Peter FILZMOSER
Curriculum Vitae
August 2023

Contact address
Head of Research Group *Computational Statistics*
Institute of Statistics and Mathematical Methods in Economics
TU Wien – Vienna University of Technology
Wiedner Hauptstraße 8-10
A-1040 Vienna, Austria
Phone: +43 1 58801 10560
FAX: +43 1 58801 105699
E-mail: P.Filzmoser@tuwien.ac.at
Home Page: http://cstat.tuwien.ac.at/filz/

PERSONAL

Birth date: May 3, 1968
Married, four children
Austrian Citizen

EDUCATION

Engineer's degree, Graduate School for Electrical Engineering Wels, 1987
Master's degree, Vienna University of Technology, 1993 (Mathematics)
Doctor of Technical Sciences, Vienna University of Technology, 1996 (Mathematics)
Habilitation, Vienna University of Technology, 2001 (Statistics)

EMPLOYMENT

1993–2001: Assistant Professor, Department of Statistics and Probability Theory, TU Wien.

March–July 2005: Visiting Professor, Department of Statistics and Decision Support Systems, University of Vienna.

January and June 2007: Visiting Professor, GREMAQ (Groupe de Recherche en Economie Mathématique), Université de Toulouse I, France.

March–May 2008: Visiting Professor, Department of Applied Mathematics, Belarusian State University, Minsk, Belarus.

2012–2015: Consultant for Palacký University Olomouc, Czech Republic (1/2 position)

2001–2017: Associate Professor, Department of Statistics and Probability Theory, TU Wien.

2017–present: Full Professor, Institute of Statistics and Mathematical Methods in Economics, TU Wien.

COURSES TAUGHT

Introductory Statistics, Multivariate Statistics, Robust Statistics, Statistical Computing, Geostatistics, Exploratory Data Analysis and Visualization, Probability Theory, Econometrics, Advanced Regression and Classification, Classification and Discriminant Analysis

DOCTORAL THESES (SUPERVISOR OR ESSENTIALLY INVOLVED)

Greet Pison: Robust multivariate analysis and diagnostic tools, Univ. Anwerp, June 2002.

Pantelis Christodoulides: Principal plane analysis: Introducing criteria for the simultaneous extraction of principal planes, TU Wien, December 2002.

Sabine Verboven: Robust calibration methods, Univ. Antwerp, March 2004.

Sven Serneels: Robustness and uncertainty in multivariate calibration, Univ. Antwerp, June 2005.

Sonja Huber: The measurement of operational risks – Considering the loss distribution approach in combination with robust statistics, Univ. Innsbruck, January 2009.

Valentin Todorov: Multivariate robust statistics: methods and computation, TU Wien, April 2009.

Matthias Templ: New developments in statistical disclosure control and imputation in Official Statistics, TU Wien, May 2009.

Bettina Liebmann: Chemometric methods and near-infrared spectroscopy applied to bioenergy production, TU Wien, August 2010.

Andreas Alfons: On statistical simulation and robust statistics with application to Laeken indicators and quality of life research, TU Wien, October 2010.

Heinrich Fritz: Robust clustering and dimension reduction: Methods, algorithms and implementation, TU Wien, September 2011.

Brian Godsey: Probabilistic modeling of high-dimensional and high-throughput biological data, TU Wien, November 2013.

Cagatay Turkay: Integrating computational tools in interactive and visual methods for enhancing high-dimensional data and cluster analysis, University of Bergen, Norway, November 2013.

Petra Kynclova: Methodological contributions to compositional data analysis, TU Wien, January 2016.

Mehmet Can Mert: Theoretical and practical aspects in compositional data analysis, TU Wien, October 2016.

Fatma Sevinc Kurnaz: New robust penalized estimators for linear and logistic regression, Yildiz Technical University, Istanbul, Turkey, June 2017.

Sara de la Rosa de Saa: Scale measures with fuzzy data: Analyzing their robustness and application to fuzzy rating scale-based questionnaires, University of Oviedo, Spain, June 2017.

Thomas Ortner: Local projections for high-dimensional data analysis, TU Wien, October 2017.

Irene Hoffmann: Sparse and robust modeling for high-dimensional data, TU Wien, November 2017.

Šárka Brodinová: Robust statistical grouping methods for high-dimensional data, TU Wien, November 2017.

Fabian Schroeder: Cost sensitive screening methods for binary classification, TU Wien, June 2018.

Jan Walach: Robust log-ratio methods for classifying high-dimensional metabolomics data, TU Wien, March 2019.

Dominika Mikšová: Advanced statistical methods for geochemical mineral exploration, TU Wien, May 2020.

Sonia Perez-Fernandez: ROC curves for multivariate markers: decision rules and visualization, TU Wien and University of Oviedo, February 2021.

Christopher Rieser: Spatial dependence, trends, functional outliers and sparsity in Compositional Data Analysis, TU Wien, March 2022.

HONORS and AWARDS

1992: Förderungsstipendium of the Vienna University of Technology awarded for my diploma thesis.

1996: Mobilitätsstipendium of the Creditanstalt-Bankverein awarded for my doctoral thesis.

2003: Talentförderungsprämie (section "Science") from Land Oberösterreich.

2007: Scholarship of the Austrian Research Association for research and teaching activities in Minsk/Belarus.

2008: e-Learning award, Vienna University of Technology.

2014: Elected Member of the International Statistical Institute (ISI).

2019: Felix Chayes Prize awarded from the International Association for Mathematical Geosciences (IAMG) for Excellence in Research in Mathematical Petrology.

MEMBERSHIP IN SCIENTIFIC ORGANIZATIONS AND NETWORKS

- Member of the ESF Network "Statistical Analysis of Complex Data with Robust and Related Statistical Methods (SACD)" of the European Science Foundation, together with 9 other research partners of statistical institutions in Europe, 2004-2006.
- Co-Chair of the European Research Consortium for Informatics and Mathematics (ERCIM) Working Group "Computing & Statistics"
- Member of the COST Action IC0702 – Combining Soft Computing Techniques and Statistical Methods to Improve Data Analysis Solutions – European Science Foundation, 2008-2012.
- Chair member of STUDIA (Studiengruppe für Internationale Analysen) in Schlierbach.
- Chair member of the Austrian Statistical Society.
- Member of "The International Association for Statistical Computing (IASC)", since 2009.
- Member of the Board of Directors of the European Regional Section, "The International Association for Statistical Computing (IASC)", since 2010.
- Member of the Executive Committee of "The International Association for Statistical Computing (IASC) (2013-2017)".

ORGANIZATION OF EVENTS

- Main organizer of the "International Conference on Robust Statistics" (ICORS 2001), 23-27 July 2001, Vorau, Austria.
- Organizer of the "Workshop TU Wien—STUDIA", 3-5 September 2002, Schlierbach, Austria.
- Main organizer of the workshop "Robust Modeling of Environmental Data" (RMED'03), 9-10 July 2003, Vorau, Austria.
- Main organizer of the "Workshop on Robustness for High-dimensional Data" (RobHD'04), 5-8 May 2004, Vorau, Austria.
- Member of the Scientific Programme Committee of the "Conference on Computational Statistics" (COMPSTAT 2004), 23-27 August 2004, Prague, Czech Republic.
- Co-chair of the Programme Committee of the "Seventh International Conference Computer Data Analysis and Modeling", 6-10 September 2004, Minsk, Belarus.
- Member of the Scientific Programme Committee of the international workshop "Developments in Statistical Methodology: Diagnostics, Robustness, Exploration, and Modeling" (DREaM 2005), March 30 – April 2, 2005, Milton Keynes and Cranfield, United Kingdom.
- Member of the Scientific Programme Committee of the "International Conference on Robust Statistics" (ICORS 2005), 12-17 June 2005, Jyväskylä, Finland.

- Member of the Scientific Programme Committee of the international workshop "Perspectives in Modern Statistical Inference III", 18-22 July 2005, Mikulov, Czech Republic.
- Co-organizer of the workshop "Robust Statistics and R", 26-28 October 2005, Treviso, Italy.
- Member of the Scientific Programme Committee of the "International Conference on Robust Statistics" (ICORS 2006), 12-17 July 2006, Lisbon, Portugal.
- Co-chair of the Programme Committee of the "Eight International Conference Computer Data Analysis and Modeling", 11-15 September 2007, Minsk, Belarus.
- Member of the Scientific Programme Committee of the "International Conference on Robust Statistics" (ICORS 2007), 17-21 September 2007, Buenos Aires, Argentina.
- Co-organizer of the workshop "Robust Statistics and R", October 28 – November 2, 2007, Banff, Canada.
- Member of the Scientific Programme Committee of the "First International Conference of the ERCIM Working Group on Computing & Statistics", 19-21 June 2008, Neuchatel, Switzerland.
- Member of the Scientific Programme Committee of the "International Conference on Robust Statistics" (ICORS 2008), 8-12 September 2008, Antalya, Turkey.
- Organizer of the workshop "Statistik/Stochastik der TU Wien/TU Dresden", 24-28 September 2008, Vorau, Austria.
- Member of the Scientific Programme Committee of the "International Conference on Robust Statistics" (ICORS 2009), 14-19 June 2009, Parma, Italy.
- Member of the Scientific Programme Committee of the "Second International Conference of the ERCIM Working Group on Computing & Statistics", 29-31 October 2009, Limassol, Cyprus.
- Member of the Scientific Programme Committee of the "International Conference on Indicators and Survey Methodology", 24-26 February 2010, Vienna, Austria.
- Member of the Scientific Programme Committee of the "Workshop on Exploratory Data Analysis and Visualization", 27-28 May 2010, Vienna, Austria.
- Member of the Scientific Programme Committee of the "International Conference on Robust Statistics" (ICORS 2010), June 28 - July 2, 2010, Prague, Czech Republic.
- Co-chair of the Program Committee of the "International Conference Computer Data Analysis and Modeling", 7-11 September 2010, Minsk, Belarus.
- Local organizer of the "15th Young Statisticians Meeting", 29-31 October 2010, Vorau, Austria.
- Member of the Scientific Programme Committee of the "Third International Conference of the ERCIM Working Group on Computing & Statistics", 10-12 December 2010, London, UK.
- Member of the Scientific Programme Committee of the "International Conference on Robust Statistics" (ICORS 2011), June 27 - July 1, 2011, Valladolid, Spain.
- Member of the Scientific Programme Committee of the "Statistik-Tage der Österreichischen Statistischen Gesellschaft", 7-9 September 2011, Graz, Austria.
- Member of the Scientific Programme Committee of the "First International Conference on Pattern Recognition Applications and Methods", 6-8 February 2012, Vilamoura, Portugal.
- Member of the Scientific Programme Committee of the "20th International Conference on Computational Statistics" (Compstat 2012), 27-31 August 2012, Limassol, Cyprus.
- Main organizer of the "Statistische Woche 2012", 18-21 September 2012, Vienna, Austria.
- Main organizer of the "Workshop on Compositional Data Analysis" (CoDaWork 2013), 3-7 June 2013, Vorau, Austria.
- Member of the Scientific Programme Committee of the "International Conference on Robust Statistics" (ICORS 2013), 7-11 July, 2013, St. Petersburg, Russia.

- Co-chair of the Program Committee of the "International Conference Computer Data Analysis and Modeling", 10-14 September 2013, Minsk, Belarus.
- Main organizer of the "IASC-ERS Summer School on R", 23-27 September 2013, Vorau, Austria.
- Member of the Scientific Programme Committee of the "Österreichische Statistiktage", 23-25 October 2013, Vienna, Austria.
- Member of the Scientific Programme Committee of "GeoMap" (Workshop on Practical Aspects of Geochemical Exploration and Mapping with Logratio Techniques), 17-20 June 2014, Olomouc, Czech Republic.
- Member of the Scientific Programme Committee of "International Conference on Robust Statistics" (ICORS 2015), 12-16 January, 2015, Kolkata, India.
- Member of the Scientific Programme Committee of "Workshop on Compositional Data Analysis" (CoDaWork 2015), 1-5 June 2015, Girona, Spain.
- Member of the Scientific Programme Committee of the "Workshop on Compositional Data Analysis" (CoDaWork 2017), 5-9 June 2017, Abbadia San Salvatore, Italy.
- Head of the Scientific Programme Committee of the 1st conference on "Data Science, Statistics & Visualisation" (DSSV 2017), 12-14 July 2017, Lisbon, Portugal.
- Member of the Scientific Programme Committee of the "International Conference on Robust Statistics" (ICORS 2017), 3-7 July 2017, Wollongong, Australia.
- Member of the Scientific Programme Committee of the "18th Annual Conference of the International Association for Mathematical Geosciences" (IAMG 2017), 2-8 September 2017, Perth, Australia.
- Organizer of the 1st Workshop "Mountain Village Science Series" (MOVISS 2017), 20-23 September 2017, Vorau, Austria.
- Organizer of the "R Summer School", 25-27 September 2017, Vorau, Austria.
- Member of the Scientific Programme Committee of the "18th International Summer Conference on Probability and Statistics" (ISCPS 2018), 25-30 June 2018, Pomorie, Bulgaria.
- Member of the Scientific Programme Committee of the 2nd conference on "Data Science, Statistics & Visualisation" (DSSV 2018), 9-11 July 2018, Vienna, Austria.
- Organizer of the 2nd Workshop "Mountain Village Science Series" (MOVISS 2018), 9-12 September 2018, Vorau, Austria.
- Member of the Scientific Programme Committee of the "International Conference on Robust Statistics" (ICORS 2019), 28-31 May 2019, Guayaquil, Ecuador.
- Member of the Scientific Programme Committee of the "Cconference on "Data Science, Statistics & Visualisation" (DSSV 2019), 13-15 August 2019, Kyoto, Japan.
- Member of the Scientific Programme Committee of the "Cconference on "Data Science, Statistics & Visualisation" (DSSV 2020), 29-31 July 2020, NC State University, USA.
- Member of the Scientific Programme Committee of the 10th International Conference on Soft Methods in Probability and Statistics (SMPS 2020), 16-18 September 2020, Valladolid, Spain.
- Member of the Scientific Programme Committee of the "Cconference on "Data Science, Statistics & Visualisation" (DSSV 2021), 7-9 July 2021, Erasmus University Rotterdam, The Netherlands.
- Organizer of the 20th International Conference on Robust Statistics (ICORS 2021), 20-24 September 2021, Vienna, Austria.
- Member of the Scientific Programme Committee of the "Cconference on "Data Science, Statistics & Visualisation" (DSSV 2022), 27-29 June 2022, National Cheng Kung University Tainan, Taiwan.

- Member of the Scientific Programme Committee of the International Conference on Robust Statistics (ICORS 2022), 5-8 July 2022, University of Waterloo, Canada.
- Member of the Scientific Programme Committee of the "Cconference on "Data Science, Statistics & Visualisation" (DSSV-ECDA 2023), 5-7 July 2023, University of Antwerp, Belgium.

GRANTS AND FUNDED RESEARCH PROJECTS

- "Generalized relative data and robustness in Bayes spaces" (FWF), together with Palacky University Olomouc, August 2022 - July 2025.
- "SEMACRET – Sustainable exploration for orthomagmatic (critical) raw materials in the EU: Charting the road to the green energy transition", (EU Horizon Europe), together with 13 partners from science and industry, June 2022 - May 2025.
- "Meal Demand Forecast" (FFG, with support of Schrankerl GmbH, Vienna), January 2022 - December 2023.
- "Feature detection in multidimensional datasets of lubricated contacts" (FFG COMET), together with AC2T Wiener Neustadt, June 2021 - May 2024.
- "AI4CSM – Automotive Intelligence for Connected Shared Mobility" (EU Horizon 2020), together with 40 partners from science and industry, May 2021 - June 2024.
- "New Methodological Developments for GAMs and VGAMs" (FWF), January 2020 - December 2022.
- "Development of tools for controlling, optimizing and analyzing music sales" (FFG, with support of Rebeat GmbH, Tulln, Austria), September 2016 - August 2018.
- "Computer data analysis and modeling for complex stochastic systems" (ÖeAD IMPULSE project), joint with Belarussian State University Minsk, April 2016 - March 2018.
- "Statistics in metabolomics for biomarker research in medicine" (FFG), together with Palacky University Olomouc, January 2015 - December 2017.
- "Statistics in metabolomics for biomarker research in medicine" (FWF), together with Palacky University Olomouc, January 2015 - December 2017.
- "Meteorite chemistry and comparison with Rosetta comet data" (FWF), together with 6 other institutions, October 2014 - September 2017.
- "DEXHELPP - Decision Support for Health Policy and Planning: Methods, Models and Technologies based on Existing Health Care Data" (FFG), together with 9 other Austrian institutions, July 2014 - June 2018.
- "IFEDH - Innovative Framework for Evidence Based Decision-making in Healthcare" (FFG), together with 9 other Austrian institutions October 2010 - September 2012.
- "Future of communities by the analysis of success factors" (FFG), together with the institutions SPES and STUDIA in Schlierbach, April 2007 - March 2009.
- EuroConference, funded by the European Commission, for the organization of the "International Conference on Robust Statistics" (ICORS 2001), July 23-27, 2001, in Vorau, Austria.

PROFESSIONAL SOFTWARE

- Package *chemometrics* for R (http:/www.R-project.org): Software for statistical data analysis of data from chemometrics.
- Package *clustTool* for R (http:/www.R-project.org): Software for clustering data with spatial dependence.
- Package *mvoutlier* for R (http:/www.R-project.org): Software for multivariate outlier detection.

- Package *pcaPP* for R (http:/www.R-project.org): Robust principal component analysis based of projection pursuit.
- Package *robCompositions* for R (http:/www.R-project.org): Robust estimation for compositional data.
- Package *StatDA* for R (http:/www.R-project.org): Software for statistical data analysis of data with spatial dependence.
- Package *tlemix* for R (http:/www.R-project.org): Software for robust fitting of finite mixture models.

RESEARCH VISITS

Aug./Sept. 1997: Université Libre de Bruxelles, Belgium (Prof. Croux)
Sept./Oct. 1997: Universitaire Instelling Antwerpen, Belgium (Prof. Rousseeuw)
Feb. 1998: Universitaire Instelling Antwerpen, Belgium (Prof. Rousseeuw)
Oct./Nov. 1998: Université Libre de Bruxelles, Belgium (Prof. Croux)
Nov./Dec. 1999: Université Libre de Bruxelles, Belgium (Prof. Croux)
Aug. 2000: Université Libre de Bruxelles, Belgium (Prof. Croux)
June 2001: Université Libre de Bruxelles, Belgium (Prof. Croux)
July 2002: Katholieke Universiteit Leuven, Belgium (Prof. Croux)
Oct./Nov. 2002: Instituto Superior Tecnico Lisbon, Portugal (Prof. Branco)
Sept. 2005: Charles University Prague, Czech Republic (Prof. Visek)
Nov. 2005: Katholieke Universiteit Leuven, Belgium (Prof. Croux)

EDITORIAL WORK

Associate Editor of
Journal of Data Science, Statistics, and Visualisation (since 2019), Journal of the Belarusian State University. Mathematics and Informatics (since 2019), AStA Advances in Statistical Analysis (since 2017), Austrian Journal of Statistics (since 2013), Journal Computational Statistics (since 2007), Chemometrics and Intelligent Laboratory Systems (since 2014)

Special issue editor of
A. Buccianti, P. Filzmoser, K. Hron, editors. *Computers & Geosciences*, 134, 2020.
P. Filzmoser, Yu. Kharin, editors. *Austrian Journal of Statistics*, 49(4), 2020.
P. Filzmoser, Yu. Kharin, editors. *Austrian Journal of Statistics*, 46(3& 4), 2017.
P. Filzmoser, K. Hron, and R. Tolosana-Delgado, editors. *Applied Geochemistry*, 75, 2016.
P. Filzmoser and K. Hron, editors. *Statistical Modelling*, 15(2), 2015.
P. Filzmoser, Yu. Kharin, editors. *Austrian Journal of Statistics*, 43(3& 4), 2014.
P. Filzmoser, C. Gatu, and A. Zeileis, editors. Special issue on "Statistical Algorithms and Software in R", *Computational Statistics & Data Analysis*, 71, 2014.
P. Filzmoser, R. Viertl, editors. *Austrian Journal of Statistics*, 41(1), 2012.
P. Filzmoser, Yu. Kharin, editors. *Austrian Journal of Statistics*, 40(1& 2), 2011.
R. Dutter, P. Filzmoser, Yu. Kharin, editors. *Austrian Journal of Statistics*, 37(1), 2008.
R. Dutter, P. Filzmoser, Yu. Kharin, editors. *Austrian Journal of Statistics*, 34(2), 2005.
R. Dutter, P. Filzmoser, U. Gather, and P.J. Rousseeuw, editors. *Metrika*, 55(1), 2002.
R. Dutter, P. Filzmoser, U. Gather, and P.J. Rousseeuw, editors. *Metrika*, 55(2), 2002.

Book editor of
P. Filzmoser, K. Hron, J.A. Martin-Fernandez, J. Palarea-Albaladejo. *Advances in Compo-*

sitional Data Analysis. Festschrift in Honour of Vera Pawlowsky-Glahn. Springer Nature Switzerland, Cham, Switzerland, 2021. DOI: 10.1007/978-3-030-71175-7

C. Agostinelli, A. Basu, P. Filzmoser, and D. Mukherjee, editors. *Recent advances in robust statistics: theory and applications.* Springer India, New Delhi, 201 pp., 2016. (ISBN: 978-81-322-3641-2)

S. Aivazian, P. Filzmoser, and Yu. Kharin, editors. *Computer Data Analysis and Modeling: Theoretical and Applied Stochastics. Proceedings of the Eleventh International Conference.* Belarusian State University, Minsk, 2016. (ISBN: 978-985-553-366-6)

C. Reimann, M. Birke, A. Demetriades, P. Filzmoser, and P. O'Connor, editors. *Chemistry of Europe's agricultural soils – Part A: Methodology and interpretation of the GEMAS data set. Geologisches Jahrbuch (Reihe B).* Schweizerbarth, Hannover, 528 pp., 2014. (ISBN: 978-3-510-96846-6)

C. Reimann, M. Birke, A. Demetriades, P. Filzmoser, and P. O'Connor, editors. *Chemistry of Europe's agricultural soils – Part B: General background information and further analysis of the GEMAS data set. Geologisches Jahrbuch (Reihe B).* Schweizerbarth, Hannover, 352 pp., 2014. (ISBN: 978-3-510-96847-3)

S. Aivazian, P. Filzmoser, and Yu. Kharin, editors. *Computer Data Analysis and Modeling: Theoretical and Applied Stochastics. Proceedings of the Tenth International Conference, Volume 1.* Belarusian State University, Minsk, 2013. (ISBN: 978-985-533-137-2)

S. Aivazian, P. Filzmoser, and Yu. Kharin, editors. *Computer Data Analysis and Modeling: Theoretical and Applied Stochastics. Proceedings of the Tenth International Conference, Volume 2.* Belarusian State University, Minsk, 2013. (ISBN: 978-985-533-138-2)

S. Aivazian, P. Filzmoser, and Yu. Kharin, editors. *Computer Data Analysis and Modeling: Complex Stochastic Data and Systems. Proceedings of the Ninth International Conference, Volume 1.* Belarusian State University, Minsk, 2010. (ISBN: 978-985-476-847-2)

S. Aivazian, P. Filzmoser, and Yu. Kharin, editors. *Computer Data Analysis and Modeling: Complex Stochastic Data and Systems. Proceedings of the Ninth International Conference, Volume 2.* Belarusian State University, Minsk, 2010. (ISBN: 978-985-476-848-9)

S. Aivazian, P. Filzmoser, and Yu. Kharin, editors. *Computer Data Analysis and Modeling: Complex Stochastic Data and Systems. Proceedings of the Eighth International Conference, Volume 1.* Belarusian State University, Minsk, 2007. (ISBN: 978-985-476-508-2)

S. Aivazian, P. Filzmoser, and Yu. Kharin, editors. *Computer Data Analysis and Modeling: Complex Stochastic Data and Systems. Proceedings of the Eighth International Conference, Volume 2.* Belarusian State University, Minsk, 2007. (ISBN: 978-985-476-505-1)

S. Aivazian, P. Filzmoser, and Yu. Kharin, editors. *Computer Data Analysis and Modeling: Robustness and Computer Intensive Methods. Proceedings of the Seventh International Conference, Volume 1.* Belarusian State University, Minsk, 2004. (ISBN: 985-445-492-4)

S. Aivazian, P. Filzmoser, and Yu. Kharin, editors. *Computer Data Analysis and Modeling: Robustness and Computer Intensive Methods. Proceedings of the Seventh International Conference, Volume 2.* Belarusian State University, Minsk, 2004. (ISBN: 985-445-492-4)

R. Dutter, P. Filzmoser, U. Gather, and P.J. Rousseeuw, editors. *Developments in Robust Statistics. International Conference on Robust Statistics 2001.* Physica-Verlag, Heidelberg, 2003.

BOOKS

P. Filzmoser, K. Hron, and M. Templ. *Applied Compositional Data Analysis. With Worked Examples in R.* Springer Series in Statistics. Springer, Switzerland, 2018. ISBN: 978-3-319-96422-5.

K. Varmuza and P. Filzmoser. *Introduction to Multivariate Statistical Analysis in Chemometrics.* CRC Press, Boca Raton, FL, 2009. ISBN: 9781420059472.

V. Todorov and P. Filzmoser. *Multivariate Robust Statistics: Methods and Computation.* Südwestdeutscher Verlag für Hochschulschriften, Saarbrücken, Germany, 2009. ISBN: 978-3-8381-0814-8.

H. Fritz and P. Filzmoser. *Plausibility of Databases and the Relation to Imputation Methods.* VDM Verlag Dr. Müller, Saarbrücken, Germany, 2008. ISBN: 978-3-8364-5992-1.

C. Reimann, P. Filzmoser, R.G. Garrett, and R. Dutter. *Statistical Data Analysis Explained. Applied Environmental Statistics with R.* John Wiley & Sons, Chichester, 2008. ISBN: 978-0-470-98581-6.

K. Adel, R. Dutter, H. Filzmoser, and P. Filzmoser. *Tiefenstrukturen der Sprache: Untersuchung regionaler Unterschiede mit statistischen Methoden.* WUV-Universitätsverlag, Wien, 1994. In German.

ARTICLES AND PAPERS (all peer-reviewed)
2023

M. Drastichova, P. Filzmoser, and Rastko Gajanin. Relationships between wellbeing and sustainable development in a group of selected developed countries. *Problemy Ekorozwoju – Problems of Sustainable Development*, 18(2), 49-77, 2023. DOI: 10.35784/preko.3941

P. Filzmoser and A. Mazak-Huemer. Massive data sets – is data quality still an issue? In: B. Vogel-Heuser and M. Wimmer (Eds.): Digital Transformation: Core Technologies and Emerging Topics from a Computer Science Perspective (Vol. 1). Springer-Vieweg, Heidelberg, Germany. pp. 269-279, 2023. DOI: 10.1007/978-3-662-65004-2_11

G. Heiler, A. Hanbury, and P. Filzmoser. The impact of COVID-19 on relative changes in aggregated mobility using mobile-phone data. *Austrian Journal of Statistics*, 52, 163-179, 2023. DOI: 10.17713/ajs.v52i4.1510

F.S. Kurnaz and P. Filzmoser. Robust and sparse multinomial regression in high dimensions. *Data Mining and Knowledge Discovery.* Published in Issue 4, 2023.

F.S. Kurnaz and P. Filzmoser. enetLTS: Robust and Sparse Methods for HighDimensional Linear, Binary, and MultinomialRegression. *Journal of Open Source Software*, 8(82), 4773, https://doi.org/10.21105/joss.04773, 2023. DOI: 10.21105/joss.04773

M. Mayrhofer and P. Filzmoser. Multivariate outlier explanations using Shapley values and Mahalanobis distances. *Econometrics and Statistics.* To appear. DOI: 10.1016/j.ecosta.2023.04.003

C. Muehlmann, P. Filzmoser, and K. Nordhausen. Spatial blind source separation in the presence of a drift. *Austrian Journal of Statistics.* To appear.

N. Piccolotto, M. Bögl, C. Muehlmann, K. Nordhausen, P. Filzmoser, J. Schmidt, and S. Miksch. Data type agnostic visual sensitivity analysis. *IEEE VIS 2023.* To appear.

C. Rieser and P. Filzmoser. Extending compositional data analysis from a graph signal processing perspective. *Journal of Multivariate Analysis.* To appear. DOI: 10.1016/j.jmva.2023.105209

2022

M. Brandl, C.A. Hauzenberger, P. Filzmoser, and M.M. Martinez. Geochemical sourcing of chipped stone tools from Platia Magoula Zarkou. In: E. Alram-Stern, K. Gallis, and G.

Toufexis (Eds.). *Platia Magoula Zarkou. The Neolithic Period.* Austrian Academy of Sciences Press, Austria, pp. 291-309, 2022. https://library.oapen.org/handle/20.500.12657/58537

M. Brandl, C. Hauzenberger, P. Filzmoser, and G. Trnka. Swieciechow in the south - geochemical provenance of a "flint" axe from Austria. In: M. Grygiel and P. Obst, Eds., Walking among ancient trees. Studies in honor of Ryszard Grygiel and Peter Bogucki on the 45th anniversary of their research collaboration. Fundacja Badan Archeologicnych Imenia Profesora Konrada Jazdzewskiego. Lodz, Poland, 2022, pp. 533-546.

K. Facevicova, P. Filzmoser, and K. Hron. Compositional cubes: a new concept for multi-factorial compositions. *Statistical Papers*, 2022. DOI: 10.1007/s00362-022-01350-8

K. Hron, A. Menafoglio, J. Palarea-Albaladejo, P. Filzmoser, R. Talska, and J.J. Egozcue. Weighting of parts in compositional data analysis: Advances and applications. *Mathematical Geosciences*, 54, 71-93, 2022. DOI: 10.1007/s11004-021-09952-y

G.S. Monti and P. Filzmoser. A robust knockoff filter for sparse regression analysis of microbiome compositional data. *Computational Statistics*, 2022. DOI: 10.1007/s00180-022-01268-7

G.S. Monti and P. Filzmoser. Robust logistic zero-sum regression for microbiome compositional data. *Advances in Data Analysis and Classification*, 16, 301-324, 2022. DOI: 10.1007/s11634-021-00465-4

N. Mumic, O. Leodolter, A. Schwaiger, and P. Filzmoser. Scale invariant and robust pattern identification in univariate time series, with application to growth trend detection in music streaming data. In: A. Steland and K.-L. Tsui (Eds.), *Artificial Intelligence, Big Data and Data Science in Statistics. Challenges and Solutions in Environmetrics, the Natural Sciences and Technology.* Springer Nature Switzerland, Cham, pp. 25-50, 2022. DOI: 10.1007/978-3-031-07155-3

I. Pavlu, P. Filzmoser, A. Menafoglio, and K. Hron. Classification of continuous distributional data using the logratio approach. In: P. Brito and S. Dias (Eds.) Analysis of Distributional Data. CRC Press, Boca Raton, USA, pp. 183-200, 2022. DOI: 10.1201/9781315370545

P. Pfeiffer, B. Ronai, G. Vorlaufer, N. Dörr, and P. Filzmoser. Weighted LASSO variable selection for the analysis of FTIR spectra applied to the prediction of engine oil degradation. *Chemometrics and Intelligent Laboratory Systems*, 225, 104617, 2022. DOI: 10.1016/j.chemolab.2022.104617

N. Piccolotto, M. Bögl, T. Gschwandtner, C. Muehlmann, K. Nordhausen, P. Filzmoser, and S. Miksch. TBSSvis: Visual analytics for temporal Blind Source Separation. *Visual Informatics*, 2022. DOI: 10.1016/j.visinf.2022.10.002

N. Piccolotto, M. Bögl, C. Muehlmann, K. Nordhausen, P. Filzmoser, and S. Miksch. Visual parameter selection for spatial blind source separation. *Computer Graphics Forum*, 41(3), 157-168, 2022. DOI: 10.1111/cgf.14530

P. Sarala, J.P. Lunkka, V. Sarajärvi, O. Sarala, and P. Filzmoser. Timing of glacial – non-glacial stages in Finland: an exploratory analysis of the OSL data. *Arctic, Antarctic, and Alpine Research*, 54(1), 428-442, 2022. DOI: 10.1080/15230430.2022.2117765

P. Weltler, K. Rappersberger, P. Filzmoser, I. Vujic. The impact of the COVID-19 pandemic on melanoma diagnoses *JEADV Clinical Practice*, 1(2), 122-125, 2022. DOI: 10.1002/jvc2.15

2021

S. de la Rosa de Sáa, M.A. Lubiano, B. Sinova, M.A. Gil, and P. Filzmoser. Location-free robust scale estimates for fuzzy data. *IEEE Transactions on Fuzzy Systems*, 29(6), 1682-1694, 2021. DOI: 10.1109/TFUZZ.2020.2984203

J. de Sousa, K. Hron, K. Facevicova, and P. Filzmoser. Robust principal component analysis for compositional tables. *Journal of Applied Statistics*, 48(2), 214-233, 2021. DOI: 10.1080/02664763.2020.1722078

M. Drastichova and P. Filzmoser. Factors of quality of life in a group of selected European Union and OECD countries. *Problemy Ekorozwoju – Problems of Sustainable Development*, 16(2), 75-93, 2021. DOI: 10.35784/pe.2021.2.09

A.P. Duarte Silva, P. Brito, P. Filzmoser, and J.G. Dias. MAINT.Data: Modelling and analysing interval data in R. *The R Journal*, 13(2), 266-272, 2021. DOI: 10.32614/RJ-2021-074

P. Filzmoser. Robust statistics. In: B.S.D. Sagar, Q. Cheng, J. McKinley, and F. Agterberg (Eds.): Encyclopedia of Mathematical Geosciences. Encyclopedia of Earth Sciences Series. Springer, Cham, 2021. DOI: 10.1007/978-3-030-26050-7_425-1

P. Filzmoser, K. Hron, and A. Menafoglio. Logratio approach to distributional modeling. In: Daouia A., Ruiz-Gazen A. (Eds.), *Advances in Contemporary Statistics and Econometrics*. Festschrift for Christine Thomas. Springer, Cham, 2021, pp. 451-470. DOI: 10.1007/978-3-030-73249-3_23

P. Filzmoser and K. Nordhausen. Robust linear regression for high-dimensional data: an overview. *WIREs Computational Statistics*, 13(4), e1524, 2021. DOI: 10.1002/wics.1524

K. Hron, G. Coenders, P. Filzmoser, J. Palarea-Albaladejo, M. Faměra, and T.M. Grygar. Analysing pairwise logratios revisited. *Mathematical Geosciences*, 53, 1643-1666, 2021. DOI: 10.1007/s11004-021-09938-w

S. Lubbe, P. Filzmoser, and M. Templ. Comparison of zero replacement strategies for compositional data with large numbers of zeros. *Chemometrics and Intelligent Laboratory Systems*, 210, 104248, 2021. DOI: 10.1016/j.chemolab.2021.104248

D. Miksova, C. Rieser, and P. Filzmoser. Identification of mineralization in geochemistry along a transect based on the spatial curvature of log-ratios. *Mathematical Geosciences*, 53, 1513-1533, 2021. DOI: 10.1007/s11004-021-09930-4

D. Miksova, C. Rieser, P. Filzmoser, M. Middleton, and R. Sutinen. Identification of mineralization in geochemistry for grid sampling using generalized additive models. *Mathematical Geosciences*, 53, 1861-1880, 2021. DOI: 10.1007/s11004-021-09929-x

G.S. Monti and P. Filzmoser. Sparse least trimmed squares regression with compositional covariates for high dimensional data. *Bioinformatics*, 37(21), 3805-3814, 2021. DOI: 10.1093/bioinformatics/btab572

L. Moreau, C. Draily, J.-M. Cordy, K. Boyle, M. Buckley, E. Gjesfjeld, P. Filzmoser, V. Borgia, S.A. Gibson, J. Day, R. Beyer, A. Manica, M. Vander Linden, M. de Grooth and S. Pirson. Adaptive trade-offs towards the Last Glacial Maximum in north-western Europe: a multidisciplinary view from Walou Cave. *Journal of Paleolithic Archaeology*, volume 4, 2021. DOI: 10.1007/s41982-021-00078-5

N. Mumic and P. Filzmoser. A multivariate test for detecting fraud based on Benford's law, with application to music streaming data. *Statistical Methods & Applications*, 30, 819-840, 2021. DOI: 10.1007/s10260-021-00582-6

T. Ortner, P. Filzmoser, M. Rohm, S. Brodinova, and C. Breiteneder. Local projections for high-dimensional outlier detection. *Metron*, 79, 189-206, 2021. DOI: 10.1007/s40300-020-00183-5

S. Perez-Fernandez, P. Martinez-Camblor, P. Filzmoser, and N. Corral. Visualizing the decision rules behind ROC curves: understanding the classification process. *Advances in Statistical Analysis*, 105(1), 135-161, 2021. DOI: 10.1007/s10182-020-00385-2

J. Rabeder, H. Reitner, I. Wimmer-Frey, P. Filzmoser, M.C. Mert, M. Heinrich, P. Lipiarski, J.M. Reitner, G. Hobiger, and C. Benold. Integrative Analyse der Löss- und Lösslehmvorkommen im österreichischen Alpenvorland und im Wiener Becken – ein Beitrag zum Interaktiven Rohstoff-Informationssystem IRIS-Online. *Berg- und Hüttenmännische Monatshefte*, 166(4), 206-211, 2021. DOI: 10.1007/s00501-021-01096-0

C. Rieser and P. Filzmoser. Compositional trend filtering. *Annales Mathematicae et Informaticae*, 53, 257-270, 2021. DOI: 10.33039/ami.2021.02.004

C. Rieser and P. Filzmoser. Outlier detection for pandemic-related data using compositional functional data analysis. In: M. Boado-Penas, J. Eisenberg, and S. Sahin (Eds.), Pandemics: Insurance and Social Protection. Springer Nature, Cham, Switzerland, pp. 251-266, 2021. DOI: 10.1007/978-3-030-78334-1_12

N. Stefelova, A. Alfons, J. Palarea-Albaladajo, P. Filzmoser, and K. Hron. Robust regression with compositional covariates including cellwise outliers. *Advances in Data Analysis and Classification*, 15, 869-909, 2021. DOI: 10.1007/s11634-021-00436-9

K.G. van den Boogaart, P. Filzmoser, K. Hron, M. Templ, and R. Tolosana-Delgado. Classical and robust regression analysis with compositional data. *Mathematical Geosciences*, 53, 823-858, 2021. DOI: 10.1007/s11004-020-09895-w

K. Varmuza, M. Dehmer, F. Emmert-Streib, and P. Filzmoser. Automorphism groups of alkane graphs. *Croatica Chemica Acta*, 94, 47-58, 2021. DOI: 10.5562/cca3807

2020

S. Acitas, P. Filzmoser, and B. Senoglu. A new partial robust adaptive modified maximum likelihood estimator. *Chemometrics and Intelligent Laboratory Systems*, 204, 104068, 2020. DOI: 10.1016/j.chemolab.2020.104068

S. Acitas, P. Filzmoser, and B. Senoglu. A robust adaptive modified maximum likelihood estimator for the linear regression model. *Journal of Statistical Computation and Simulation*, 2020. DOI: 10.1080/00949655.2020.1856847

M. Drastichová and P. Filzmoser. The relationship between health outcomes and health expenditure in Europe by using compositional data analysis. *Problemy Ekorozwoju – Problems of Sustainable Development*, 15(2), 99-110, 2020. DOI: 10.35784/pe.2020.2.11

P. Filzmoser and M. Gregorich. Multivariate outlier detection in applied data analysis: global, local, compositional and cellwise outliers. *Mathematical Geosciences*, 52(8), 1049-1066, 2020. DOI: 10.1007/s11004-020-09861-6

P. Filzmoser, S. Höppner, I. Ortner, S. Serneels, and T. Verdonck. Cellwise robust M regression. *Computational Statistics & Data Analysis*, 147, 106944, 2020. DOI: 10.1016/j.csda.2020.106944

P. Filzmoser and K. Hron. Compositional data analysis in chemometrics, In S. Brown, R. Tauler, and B. Walczak, editors, *Comprehensive Chemometrics: Chemical and Biochemical Data Analysis*, Second Edition, Elsevier, Amsterdam, pp. 641-662, 2020. ISBN: 9780444641656

P. Filzmoser, S. Serneels, R. Maronna, and C. Croux. Robust multivariate methods in chemometrics, In S. Brown, R. Tauler, and B. Walczak, editors, *Comprehensive Chemometrics: Chemical and Biochemical Data Analysis*, Second Edition, Elsevier, Amsterdam, pp. 393-430, 2020. ISBN: 9780444641656

K. Hron, M. Engle, P. Filzmoser, and E. Fišerová. Weighted symmetric pivot coordinates for compositional data with geochemical applications. *Mathematical Geosciences*, 2020. DOI: 10.1007/s11004-020-09862-5

B. Lemiere, J. Melleton, V. Derycke, E. Gloaguen, L. Bouat, D. Miksova, P.Filzmoser, and M. Middleton. pXRF measurements on soil samples for the exploration of an antimony deposit: example from the Vendean antimony district (France). *Minerals*, 10(8), 724, 2020. DOI: 10.3390/min10080724

D. Miksova, P. Filzmoser, and M. Middleton. Imputation of values above an upper detection limit in compositional data. *Computers and Geosciences*, 136, 104383, 2020. DOI: 10.1016/j.cageo.2019.104383

D. Miksova, C. Rieser, P. Filzmoser, S.M. Thaarup, and J. Melleton. A method to identify geochemical mineralization on linear transects. *Austrian Journal of Statistics*, 49(4), 89-98, 2020. DOI: 10.17713/ajs.v49i4.1133

G.S. Monti and P. Filzmoser. High-dimensional regression with compositional covariates: a robust perspective. In A. Pollice, N. Salvati, and F. Schirripa Spagnolo: Book of Short Papers SIS 2020. Pearson, pp. 105-110, 2020.

K. Nordhausen, P. Filzmoser, and G. Fischer. Blind source separation for compositional time series. *Mathematical Geosciences*, 2020. DOI: 10.1007/s11004-020-09869-y

I. Ortner, P. Filzmoser, and C. Croux. Robust and sparse multigroup classification by the optimal scoring approach. *Data Mining and Knowledge Discovery*, 34, 723-741, 2020. DOI: 10.1007/s10618-019-00666-8

D. Rosadi, E. Putranda Setiawan, M. Templ, and P. Filzmoser. Robust covariance estimators for mean-variance portfolio optimization with transaction lots. *Operations Research Perspectives*, 7, 100154, 2020. DOI: 10.1016/j.orp.2020.100154

M. Templ, J. Gussenbauer, and P. Filzmoser. Evaluation of robust outlier detection methods for zero-inflated complex data. *Journal of Applied Statistics*, 47(7), 1144-1167, 2020. DOI: 10.1080/02664763.2019.1671961

K. Varmuza, P. Filzmoser, N. Fray, H. Cottin, S. Merouane, O. Stenzel, J. Kissel, C. Briois, D. Baklouti, A. Bardyn, S. Siljeström, J. Silen, and M. Hilchenbach. Composition of cometary particles collected during two periods of the Rosetta mission - multivariate evaluation of mass spectral data. *Journal of Chemometrics*, 34(4):e3218, 2020. DOI: 10.1002/cem.3218

O. Vencálek, K. Hron, and P. Filzmoser. A comparison of generalized linear models and compositional data analysis for parameter estimation in ordered categories models. *Statistical Modelling*, 20(3), 249-273, 2020. DOI: 10.1177/1471082X18816540

J. Walach, P. Filzmoser, Š. Kouřil, D. Friedecký, and T. Adam. Cellwise outlier detection and biomarker identification in metabolomics based on pairwise log-ratios. *Journal of Chemometrics*, 34(1):e3182, 2020. DOI: 10.1002/cem.3182

2019

S. Brodinova, P. Filzmoser, T. Ortner, C. Breiteneder, and M. Rohm. Robust and sparse k-means clustering for high-dimensional data. *Advances in Data Analysis and Classification*, 13, 905-932, 2019. DOI: 10.1007/s11634-019-00356-9

M. Drastichová and P. Filzmoser. Assessment of sustainable development using cluster analysis and principal component analysis. *Problemy Ekorozwoju – Problems of Sustainable Development*, 14(2), 7-24, 2019.

P. Filzmoser and K. Hron. Comments on: Compositional data: the sample space and its structure. *Test*, 28(3), 639-643, 2019. DOI: 10.1007/s11749-019-00671-5

C. Gozzi, P. Filzmoser, A. Buccianti, O. Vaselli, and B. Nisi. Statistical methods for the geochemical characterisation of surface waters: The case study of the Tiber River basin (Central Italy). *Computers and Geosciences*, 131, 80–88, 2019. DOI: 10.1016/j.cageo.2019.06.011

L. Moreau, A. Ciornei, E. Gjesfjeld, P. Filzmoser, S.A. Gibson, J. Day, P.R. Nigst, P. Noiret, R.A. Macleod, L. Nita, and M. Anghelinu. First geochemical 'fingerprinting' of Balkan and Prut flint from Palaeolithic Romania: potentials, limitations and future directions. *Archaeometry*, 61(3), 521-538, 2019. DOI: 10.1111/arcm.12433

D. Rosadi and P. Filzmoser. Robust second-order least-squares estimation for regression models with autoregressive errors. *Statistical Papers*, 50(1), 105-122, 2019. DOI: 10.1007/s00362-016-0829-9

A. Wurl, A. Falkner, P. Filzmoser, A. Haselböck, A. Mazak, and S. Sperl. A comprehensive prediction approach for hardware asset management. In: C. Quix, J. Bernardino (eds): Data Management Technologies and Applications. DATA 2018. Communications in Computer and Information Science, vol 862. Springer, Cham, p.26-49, 2019.

A. Wurl, A. Falkner, A. Haselböck, A. Mazak, and P. Filzmoser. Exploring robustness in a combined feature selection approach. *Proceedings of the 8th International Conference on Data Science, Technology and Applications – Volume 1: DATA*, pages 84-91, Prague, Czech Republic, 2019.

2018

C.H. Abreu-Junior, M.J. de Lima Brossi, R.T. Monteiro, P.H.S. Cardoso, T. da Silva Mandu, T.A. Rodrigues Nogueirab, A. Ganga, P. Filzmoser, F. Carvalho de Oliveira, L. Pittol Firmee, Z. Hef, G.F. Capra. Effects of sewage sludge application on unfertile tropical soils evaluated by multiple approaches: a field experiment in a commercial Eucalyptus plantation. *Science of the Total Environment*, 655, 1457-1467, 2018.

M. Brandl, M.M. Martinez, C. Hauzenberger, P. Filzmoser, P. Nymoen, and N. Mehler. A multi-technique analytical approach to sourcing Scandinavian flint: Provenance of ballast flint from the shipwreck "Leirvigen 1", Norway. *PLoS ONE*, 13(8): e0200647, 2018. DOI 10.1371/journal.pone.0200647

G.F. Capra, S. Tidu, R. Lovreglio, G. Certini, M. Salis, V. Bacciu, A. Ganga, and P. Filzmoser. The impact of large fire on calcareous Mediterranean pedosystems (Sardinia, Italy) – An integrated multiple approach. *Science of the Total Environment*, 624, 1152-1162, 2018.

M.A. Di Palma, P. Filzmoser, M. Gallo, and K. Hron. A robust Parafact model for compositional data. *Journal of Applied Statistics*, 45(8), 1347-1369, 2018.

A.P. Duarte Silva, P. Filzmoser, and P. Brito. Outlier detection in interval data. *Advances in Data Analysis and Classification*, 12(3), 785-822, 2018.

P. Filzmoser and F.S. Kurnaz. A robust Liu regression estimator. *Communications in Statistics – Simulation and Computation*, 47(2), 432–443, 2018.

B. Flem, C. Reimann, K. Fabian, M. Birke, P. Filzmoser, and D. Banks. Graphical statistics to explore the natural and anthropogenic processes influencing the inorganic quality of drinking water, ground water and surface water. *Applied Geochemistry*, 88(Part B), 133-148, 2018.

F.S. Kurnaz, I. Hoffmann, and P. Filzmoser. Robust and sparse estimation methods for high dimensional linear and logistic regression. *Chemometrics and Intelligent Laboratory Systems*, 172, 211-222, 2018.

M. Landauer, M. Wurzenberger, F. Skopik, G. Settanni, and P. Filzmoser. Dynamic log file analysis: An unsupervised cluster evolution approach for anomaly detection. *Computers & Security*, 79, 94-116, 2018.

M. Landauer, M. Wurzenberger, F. Skopik, G. Settanni, and P. Filzmoser. Time series analysis: Unsupervised anomaly detection beyond outlier detection. In: C. Su and H. Kikuchi (eds.) Information Security Practice and Experience. ISPEC 2018. Lecture Notes in Computer Science, vol 11125. Springer, Cham. pp. 19-36, 2018.

M.C. Mert, P. Filzmoser, G. Endel, and I. Wilbacher. Compositional data analysis in epidemiology. *Statistical Methods in Medical Research*, 27(6), 1878-1891, 2018.

G.S. Monti, P. Filzmoser, and R.C. Deutsch. A robust approach to risk assessment based on species sensitivity distributions. *Risk Analysis: An International Journal*, 38 (10), 2073-2086, 2018.

T. Ortner, P. Filzmoser, M. Zaharieva, C. Breiteneder, and S. Brodinova. Guided projections for analysing the structure of high-dimensional data. *Journal of Computational and Graphical Statistics*, 27(4), 750-762, 2018.

S. Perez-Fernandez, P. Martinez-Camblor, P. Filzmoser, and N. Corral. nsROC: An R package for non-standard ROC curve analysis. *The R Journal*, https://journal.r-project.org/archive/2018/RJ-2018-043/index.html, 2018.

C. Reimann, P. Englmaier, B. Flem, O.A. Eggen, T.E. Finne, M. Anderson, and P. Filzmoser. The response of 12 different plant materials and one mushroom to Mo and Pb mineralisation along a 100-km transect in southern central Norway. *Geochemistry: Exploration, Environment, Analysis*, 18(3): 204-215, 2018.

C. Reimann, K. Fabian, M. Birke, P. Filzmoser, A. Demetriades, P. Négrel, K. Oorts, J. Matschullat, P. de Caritat, and the GEMAS Project Team. GEMAS: Establishing geochemical background and threshold for 53 chemical elements in European agricultural soil. *Applied Geochemistry*, 88(B), 302-318, 2018.

C. Reimann, K. Fabian, B. Flem, M. Andersson, P. Filzmoser, and P. Englmaier. Geosphere-biosphere circulation of chemical elements in soil and plant systems from a 100 km transect from southern central Norway. *Science of the Total Environment*, 639, 129-145, 2018.

K. Varmuza, P. Filzmoser, I. Hoffmann, J. Walach, H. Cottin, N. Fray, C. Briois, P. Modica, A. Bardyn, J. Silen, S. Siljeström, O. Stenzel, J. Kissel, and M. Hilchenbach. Significance of variables for discrimination – applied to the search of organic ions in mass spectra measured on cometary particles. *Journal of Chemometrics*, 32(4), 1-13, DOI 10.1002/cem.3001, 2018.

J. Walach, P. Filzmoser, and K. Hron. Data normalization and scaling: Consequences for the analysis in omics sciences. In: J. Jaumot, C. Bedia, and R. Tauler (eds.) Comprehensive Analytical Chemistry. Data Analysis for Omics Sciences: Methods and Applications. Elsevier, Amsterdam, The Netherlands, pp. 165-196, 2018.

A. Zimek and P. Filzmoser. There and back again: Outlier detection between statistical reasoning and data mining algorithms. *WIREs Data Mining and Knowledge Discovery*, 8: null, 2018. doi: 10.1002/widm.1280

2017

A. Alfons, C. Croux, and P. Filzmoser. Robust maximum association estimators. *Journal of the American Statistical Association*, 112 (517), 436–445, 2017.

M. Bögl, P. Filzmoser, T. Gschwandtner, T. Lammarsch, R. Leite, S. Miksch, and A. Rind. Cycle plot revisited: multivariate outlier detection using a distance-based abstraction. *Computer Graphics Forum*, 36, 227-238, 2017.

S. Brodinova, M. Zaharieva, P. Filzmoser, T. Ortner, and C. Breiteneder. Clustering of imbalanced high-dimensional media data. *Advances in Data Analysis and Classification*, 12(2), 261-284, 2017.

S. de la Rosa de Sáa, M.A. Lubiano, B. Sinova, and P. Filzmoser. Robust scale estimators for fuzzy data. *Advances in Data Analysis and Classification*, 11, 731–758, 2017.

L. Grad-Gyenge and P. Filzmoser. The paradigm of relatedness. In W. Abramowicz, R. Alt, and B. Franczyk, editors, *Business Information Systems Workshops. BIS 2016. Lecture Notes in Business Information Processing*, Springer, Cham, vol. 263, pp. 57-68, 2017.

K. Hron, P. Brito, and P. Filzmoser. Exploratory data analysis for interval compositional data. *Advances in Data Analysis and Classification*, 11(2), 223-241, 2017.

K. Hron, P. Filzmoser, P. de Caritat, E. Fiserova, and A. Gardlo. Weighted pivot coordinates for compositional data and their application to geochemical mapping. *Mathematical Geosciences*, 49, 797-814, 2017.

P. Kynčlová, K. Hron, and P. Filzmoser. Correlation between compositional parts based on symmetric balances. *Mathematical Geosciences*, 49(6), 777-796, 2017.

C. Reimann, P. Filzmoser, K. Hron, P. Kynclova, and R.G. Garrett. A new method for correlation analysis of compositional (environmental) data – a worked example. *Science of the Total Environment*, 607-608, 965–971, 2017.

C. Reimann, P. Négrel, A. Ladenberger, M. Birke, P. Filzmoser, P. O'Connor, and A. Demetriades. Comment on "Maps of heavy metals in the soils of the European Union and proposed priority areas for detailed assessment" by G. Tóth, T. Hermann, G. Szatmári, and L. Pásztor. *Science of the Total Environment*, 578, 236–241, 2017.

O.J. Stenzel, M. Hilchenbach, S. Merouane, J. Paquette, K. Varmuza, C. Engrand, F. Brandstätter, C. Koeberl, L. Ferriére, P. Filzmoser, S. Siljeström, and the COSIMA team. Similarities in element content between Comet 67P/Churyumov-Gerasimenko coma dust and selected meteorite samples. *Mothly Notices of the Royal Astronomical Society*, 469, Supp. 2, 492-505, 2017.

B. Templ, M. Templ, P. Filzmoser, A. Lehoczky, B. Czúcz, E. Baksiene, S. Fleck, H. Gregow, S. Hodzic, G. Kalvane, E. Kubin, P. Vello, D. Romanovskaja, V. Vucetic, A. Zust, and Team NS-Pheno. Phenological patterns of flowering across biogeographical regions of Europe, *International Journal of Biometeorology*, 61, 1347–1358, 2017.

M. Templ, K. Hron, and P. Filzmoser. Exploratory tools for outlier detection in compositional data with structural zeros. *Journal of Applied Statistics*, 44(4), 734-752, 2017.

J. Tobin, J. Walach, D. de Beer, P.J. Williams, P. Filzmoser, and B. Walczak. Untargeted anlysis of chromatographic data for green and fermented rooibos: problem with size effect removal. *Journal of Chromatography A*, 1525, 109–115, 2017.

J. Walach, P. Filzmoser, K. Hron, B. Walczak, and L. Najdekr. Robust biomarker identification in a two-class problem based on pairwise log-ratios. *Chemometrics and Intelligent Laboratory Systems*, 171, 277-285, 2017.

2016

A. Alfons, C. Croux, and P. Filzmoser. Robust maximum association between data sets: The R package ccaPP. *Austrian Journal of Statistics*, 45(1), 71–79, 2016.

S. Brodinova, T. Ortner, P. Filzmoser, M. Zaharieva, and C. Breiteneder. Evaluation of robust PCA for supervised audio outlier detection. In: A. Colubi, A. Blanco, C. Gatu, and G. Gonzalez-Rodriguez, editors, *Proceeding of the 22nd International Conference on Computational Statistics (COMPSTAT)*, pp. 183-194, 2016.

G.F. Capra, A. Ganga, P. Filzmoser, C. Gaviano, and S. Vacca. Combining local and scientific knowledge on soil resources through an integrated ethnopedological approach. *CATENA – An Interdisciplinary Journal of Soil Science - Hydrology - Geomorphology focusing on Geoecology and Landscape Evolution*, 142, 89–101, 2016.

P. Filzmoser, K. Hron, and R. Tolosana-Delgado. Statistical analysis of geochemical compositions: Problems, perspectives and solutions. Special Section on Geochemical Statistics, *Applied Geochemistry*, 75, 169-170, 2016.

L. Grad-Gyenge and P. Filzmoser. Recommendation techniques on a knowledge graph for email remarketing. *The Eighth International Conference on Information, Process, and Knowledge Management*, IARIA, Venice, Italy, pp. 51-56, 2016.

I. Hoffmann, P. Filzmoser, S. Serneels, and K. Varmuza. Sparse and robust PLS for binary classification. *Journal of Chemometrics*, 30, 153–162, 2016.

K. Hron, A. Menafoglio, M. Templ, K. Hrůzová, and P. Filzmoser. Simplicial principal component analysis for density functions in Bayes spaces. *Computational Statistics and Data Analysis*, 94, 330–350, 2016.

K. Hrůzová, V. Todorov, K. Hron, and P. Filzmoser. Classical and robust orthogonal regression between parts of compositional data. *Statistics*, 50(6), 1261-1275, 2016.

P. Kynčlová, P. Filzmoser, and K. Hron. Compositional biplots including external non-compositional variables. *Statistics*, 50(5), 1132-1148, 2016.

J.M. McKinley, K. Hron, E. Grunsky, C. Reimann, P. de Caritat, P. Filzmoser, K.G. van den Boogaart, and R. Tolosana-Delgado. The single component geochemical map: fact or fiction. *Journal of Geochemical Exploration*, 162, 16-28, 2016.

M.C. Mert, P. Filzmoser, and K. Hron. Error propagation in isometric logratio coordinates for compositional data: theoretical and practical considerations. *Mathematical Geosciences*, 48(8), 941-961, 2016.

L. Moreau, M. Brandl, P. Filzmoser, C. Hauzenberger, E. Goemaere, I. Jadin, H. Collet, A. Hauzeur, and R.W. Schmitz. Geochemical sourcing of flint artifacts from western Belgium and the German Rhineland: testing hypotheses on Gravettian period mobility and raw material economy. *Geoarchaeology: An International Journal*, 31(3), 229–243, 2016.

C. Reimann, P. Négrel, A. Ladenberger, M. Birke, P. Filzmoser, P. O'Connor, and A. Demetriades. Comment on "Heavy metals in agricultural soil of the European Union with implications for food safety" by G. Tóth, T. Hermann, M.R. Da Silva, and L. Montanarella. *Environment International*, 97, 258–263, 2016.

M. Templ. K. Hron, P. Filzmoser, and A. Gardlo. Imputation of rounded zeros for high-dimensional compositional data. *Chemometrics and Intelligent Laboratory Systems*, 155, 183–190, 2016.

2015

M. Bögl, W. Aigner, P. Filzmoser, T. Gschwandtner, T. Lammarsch, S. Miksch, and A. Rind. Integrating predictions in time series model selection. *Proceedings of the EuroVis Workshop on Visual Analytic, EuroVA*, Cagliari, Italy, EuroGraphics, pp. 73–77, 2015.

M. Bögl, W. Aigner, P. Filzmoser, T. Gschwandtner, T. Lammarsch, S. Miksch, and A. Rind. Visually and statistically guided imputation of missing values in univariate seasonal time series. *Poster Proceedings of the IEEE Visualization Conference 2015*, Chicago, USA, 2015. (Best Poster Award)

S. de la Rosa de Sáa, P. Filzmoser, M.Á. Gil, and M.A. Lubiano. On the robustness of absolute deviations with fuzzy data. In P. Grzegorzewski, M. Gagolewski, O. Hryniewicz, and M.Á. Gil, editors, *Strengthening Links between Data Analysis and Soft Computing*, Springer-Verlag, Heidelberg, 2015, pages 133–141.

P. Filzmoser and K. Hron. Robust coordinates for compositional data using weighted balances. In K. Nordhausen and S. Taskinen, editors, *Modern Nonparametric, Robust and Multivariate Methods. Festschrift in Honour of Hannu Oja*, Springer, Berlin, 2015, pages 167–184.

P. Filzmoser and K. Hron. Special issue: Compositional data modelling. *Statistical Modelling*, 15(2), vii-viii, 2015.

B. Flem, C. Reimann, M. Birke, D. Banks, P. Filzmoser, and B. Frengstad. Inorganic chemical quality of European tap-water: 2. Geographical distribution. *Applied Geochemistry*, 59, 211–224, 2015.

L. Grad-Gyenge, P. Filzmoser, and H. Werthner. Recommendations on a knowledge graph. In *MLRec 2015: 1st International Workshop on Machine Learning Methods for Recommender Systems*, 2015, pages 13-20.

I. Hoffmann, S. Serneels, P. Filzmoser, and C. Croux. Sparse partial robust M regression. *Chemometrics and Intelligent Laboratory Systems*, 149, 50–59, 2015.

K. Hron and P. Filzmoser. Exploring compositional data with the robust compositional biplot. In M. Carpita, E. Brentari, and E.M. Qannari, editors, *Advances in Latent Variables. Part of the series Studies in Theoretical and Applied Statistics*, Springer International Publishing, 2015, pages 219-226.

A. Kalivodová, K. Hron, P. Filzmoser, L. Najdekr, H. Janečková, and T. Adam. PLS-DA for compositional data with application to metabolomics. *Journal of Chemometrics*, 29(1), 21–28, 2015.

P. Kynčlová, P. Filzmoser, and K. Hron. Modeling compositional time series with vector autoregressive models. *Journal of Forecasting*, 34, 303–314, 2015.

J.-A. Martín-Fernández, K. Hron, M. Templ, P. Filzmoser, and J. Palarea-Albaladejo. Bayesian-multiplicative treatment of count zeros in compositional data sets. *Statistical Modelling*, 15(2), 134–158, 2015.

M.C. Mert, P. Filzmoser, and K. Hron. Sparse principal balances. *Statistical Modelling*, 15(2), 159–174, 2015.

K. Nordhausen, H. Oja, P. Filzmoser, and C. Reimann. Blind source separation for spatial compositional data. *Mathematical Geosciences*, 47(7), 753–770, 2015.

T. Ortner, P. Filzmoser, and G. Endel. Identifying structural changes in Austrian social insurance data. *IFAC-PapersOnLine*, 48-1, 115–120, 2015.

K. Varmuza and P. Filzmoser. Repeated double cross validation (rdCV) – a strategy for optimizing empirical multivariate models, and for comparing their prediction performances. In M. Khanmohammadi, editor, *Current Applications of Chemometrics*, Nova Science Publishers, New York, USA, 2015, pages 15-31.

2014

M. Brandl, C. Hauzenberger, W. Postl, M.M. Martinez, P. Filzmoser, and G. Trnka. Radiolarite studies at Krems-Wachtberg (Lower Austria): Northern Alpine vs. Carpathian lithic resources. *Quaternary International*, 351, 146–162, 2014.

A. Demetriades, C. Reimann, and P. Filzmoser. Evaluation of GEMAS project quality control results. In C. Reimann, M. Birke, A. Demetriades, P. Filzmoser, and P. O'Connor, editors, *Chemistry of Europe's Agricultural Soils. Part A: Methodology and Interpretation of the GEMAS Data Set*, Geologisches Jahrbuch, Reihe B, Heft 102, Schweizerbart, Stuttgart, 2014, pages 47–60.

P. Filzmoser and C. Reimann. Multivariate data analysis. In C. Reimann, M. Birke, A. Demetriades, P. Filzmoser, and P. O'Connor, editors, *Chemistry of Europe's Agricultural Soils. Part A: Methodology and Interpretation of the GEMAS Data Set*, Geologisches Jahrbuch, Reihe B, Heft 102, Schweizerbart, Stuttgart, 2014, pages 83–92.

P. Filzmoser, C. Reimann, and M. Birke. Univariate data analysis and mapping. In C. Reimann, M. Birke, A. Demetriades, P. Filzmoser, and P. O'Connor, editors, *Chemistry of Europe's Agricultural Soils. Part A: Methodology and Interpretation of the GEMAS Data Set*, Geologisches Jahrbuch, Reihe B, Heft 102, Schweizerbart, Stuttgart, 2014, pages 67–81.

P. Filzmoser, A. Ruiz-Gazen, and C. Thomas-Agnan. Identification of local multivariate outliers. *Statistical Papers*, 55(1), 29–47, 2014.

P. Filzmoser and B. Walczak. What can go wrong at the data normalization step for identification of biomarkers? *Journal of Chromatography A*, 1362, 194–205, 2014.

K. Hron, P. Filzmoser, M. Templ, K.G. van den Boogaart, and R. Tolosana-Delgado. Robust regression with compositional response: application to geosciences. In G.-A. Carolina et al., editors, *Mathematics of Planet Earth*, Springer, Berlin, 2014, pages 87–90.

W. Huf, K. Kalcher, R.N. Boubela, G. Rath, A. Vecsei, P. Filzmoser, and E. Moser. On the generalizability of resting-state fMRI machine learning classifiers. *Frontiers in Human Neuroscience*, 8(July), 502, 2014.

K. Kalcher, R.N. Boubela, W. Huf, L. Bartova, C. Kronnerwetter, B. Derntl, L. Pezawas, P. Filzmoser, C. Nasel, and E. Moser. The spectral diversity of resting-state fluctuations in the human brain. *PLOS ONE*, 9(4), e93375, 2014.

A. Ladenberger, J. Uhlbäck, M. Andersson, C. Reimann, T. Tarvainen, G. Morris, M. Sadeghi, M. Eklund, and P. Filzmoser. Elemental patterns in agricultural and grazing land soil in Norway, Finland and Sweden: What have we learned from continental scale mapping. In C. Reimann, M. Birke, A. Demetriades, P. Filzmoser, and P. O'Connor, editors, *Chemistry of Europe's Agricultural Soils. Part A: Methodology and Interpretation of the GEMAS Data Set*, Geologisches Jahrbuch, Reihe B, Heft 103, Schweizerbart, Stuttgart, 2014, pages 236–251.

N. Neykov, P. Filzmoser, and P. Neytchev. Ultrahigh dimensional variable selection through the penalized maximum trimmed likelihood estimator. *Statistical Papers*, 55(1), 187–207, 2014.

C. Reimann, A. Demetriades, M. Birke, P. O'Connor, J. Halamic, A. Ladenberger, and The GEMAS Project Team. Distribution of elements/parameters in agricultural and grazing land soils of Europe. In C. Reimann, M. Birke, A. Demetriades, P. Filzmoser, and P. O'Connor, editors, *Chemistry of Europe's Agricultural Soils. Part A: Methodology and Interpretation of the GEMAS Data Set*, Geologisches Jahrbuch, Reihe B, Heft 102, Schweizerbart, Stuttgart, 2014, pages 103–474.

M. Templ and P. Filzmoser. Simulation and quality of a synthetic close-to-reality employer-employee population. *Journal of Applied Statistics*, 41(5), 1053–1072, 2014.

V. Todorov and P. Filzmoser. Software tools for robust analysis of high-dimensional data. *Austrian Journal of Statistics*, 43(3-4), 255–266, 2014.

K. Varmuza, P. Filzmoser, M. Hilchenbach, H. Krüger, and J. Silén. KNN classification – evaluated by repeated double cross validation: Recognition of minerals relevant for comet dust. *Chemometrics and Intelligent Laboratory Systems*, 138, 64–71, 2014.

2013

A. Alfons, M. Templ, and P. Filzmoser. Robust estimation of economic indicators from survey samples based on Pareto tail modeling. *Journal of the Royal Statistical Society, Series C*, 62(2), 271–286, 2013.

D. Ballabio, M. Vasighi, and P. Filzmoser. Effects of supervised Self Organising Maps parameters on classification performance. *Analytica Chimica Acta*, 765, 45–53, 2013.

M. Bögl, W. Aigner, P. Filzmoser, T. Lammarsch, S. Miksch, and A. Rind. Visual analytics for model selection in time series analysis. *IEEE Transactions on Visualization and Computer Graphics, Special Issue "VIS 2013"*, 19(12), 2237–2246, 2013.

R.N. Boubela, K. Kalcher, W. Huf, C. Kronnerwetter, P. Filzmoser, and E. Moser. Beyond noise: Using temporal ICA to extract meaningful information from high-frequency fMRI signal fluctuations during rest. *Frontiers in Human Neuroscience*, 7, 1-12, 2013.

C. Croux, P. Filzmoser, and H. Fritz. Robust sparse principal component analysis. *Technometrics*, 55(2), 202–214, 2013.

P. Filzmoser and K. Hron. Robustness for compositional data. In C. Becker, R. Fried and S. Kuhnt, editors, *Robustness and Complex Data Structures, Festschrift in Honour of Ursula Gather*, pages 117–131, Springer Verlag, Heidelberg, 2013.

P. Filzmoser and V. Todorov. Robust methods for the imperfect world. *Information Sciences*, 245, 4–20, 2013.

M. Gschwandtner and P. Filzmoser. Outlier detection in high dimension using regularization. *Advances in Intelligent Systems and Computing*, 190 AISC, 237–244, 2013.

K. Hron and P. Filzmoser. Exploring compositional data with the robust compositional biplot. In E. Brentari and M. Carpita, editors, *Advances in Latent Variables*, Vita e Pensiero, Milan, Italy, ISBN 978 88 343 2556 8.

K. Hron and P. Filzmoser. Robust diagnostics of fuzzy clustering results using the compositional approach. *Advances in Intelligent Systems and Computing*, 190 AISC, 245–253, 2013.

K. Hron, P. Filzmoser, S. Donevska, and E. Fišerová. Covariance-based variable selection for compositional data. *Mathematical Geosciences*, 45(4), 487–498, 2013.

K. Hron, M. Templ, and P. Filzmoser. Estimation of a proportion in survey sampling using the logratio approach. *Metrika*, 76(6), 799–818, 2013.

K. Kalcher, R.N. Boubela, W. Huf, B. Biswal, P. Baldinger, U. Sailer, P. Filzmoser, S. Kasper, C. Lamm, R. Lanzenberger, and E. Moser. RESCALE: Voxel-specific Task-fMRI Scaling Using Resting State Fluctuation Amplitude. *NeuroImage*, 70, 80–88, 2013.

J.C. Martinez Avila, P. Filzmoser, and N.M. Neykov. Statistical modeling of hunting success using hunter surveys. *Austrian Journal of Statistics*, 42(2), 67–80, 2013.

G.S. Monti, K. Hron, P. Filzmoser, and M. Templ. Covariance-based outlier detection for compositional data with structural zeros: application to Italian Survey of Household Income and Wealth data. In E. Brentari and M. Carpita, editors, *Advances in Latent Variables*, Vita e Pensiero, Milan, Italy, ISBN 978 88 343 2556 8.

M. Templ, S. Aklan, P. Filzmoser, M. Preusser, J.A. Hainfellner. Statistical indicators for the analysis of digitalized brain tumor images. *Austrian Journal of Statistics*, 42(2), 81–100, 2013.

R. Todeschini, D. Ballabio, V. Consonni, F. Sahigara, and P. Filzmoser. Locally-centred Mahalanobis distance: a new distance measure with salient features towards outlier detection. *Analytica Chimica Acta*, 787, 1–9, 2013.

V. Todorov and P. Filzmoser. Comparing classical and robust sparse PCA. *Advances in Intelligent Systems and Computing*, 190 AISC, 283-291, 2013.

K. Varmuza, P. Filzmoser, and M. Dehmer. Multivariate linear QSPR/QSAR models and their evaluation. *Computational and Structural Biotechnology Journal*, 5 (6), e201302007, 1-10, 2013.

2012

R.N. Boubela, W. Huf, K. Kalcher, R. Stadky, P. Filzmoser, L. Pezawas, S. Kasper, C. Windischberger, and E. Moser. A highly parallelized framework for computationally intensive MR data analysis. *Magnetic Resonance Materials in Physics, Biology and Medicine (MAGMA)*, 25 (4), 313–320, 2012.

P. Filzmoser, M. Gschwandtner, and V. Todorov. Review of sparse methods in regression and classification with application to chemometrics. *Journal of Chemometrics*, 26, 42–51, 2012.

P. Filzmoser, K. Hron, and C. Reimann. Interpretation of multivariate outliers for compositional data. *Computers & Geosciences*, 39, 77–85, 2012.

P. Filzmoser, K. Hron, and M. Templ. Discriminant analysis for compositional data and robust parameter estimation. *Computational Statistics*, 27(4), 585–604, 2012.

H. Fritz, P. Filzmoser, and C. Croux. A comparison of algorithms for the multivariate L_1-median. *Computational Statistics*, 27, 393–410, 2012.

K. Hron, P. Filzmoser, and K. Thompson. Linear regression with compositional explanatory variables. *Journal of Applied Statistics*, 39(5), 1115–1128, 2012.

K. Hron, M. Jelinkova, P. Filzmoser, R. Kreuziger, P. Bednar, P. Bartak. Statistical analysis of wines using a robust compositional biplot. *Talanta*, 90, 46–50, 2012.

K. Kalcher, W. Huf, R.N. Boubela, P. Filzmoser, L. Pezawas, B.B. Biswal, S. Kasper, E. Moser, and C. Windischberger. Fully exploratory network independent component analysis of the 1000 functional connectomes database. *Frontiers in Human Neuroscience*, 6, 1–34, 2012.

J. Kehrer, R.N. Boubela, P. Filzmoser, and H. Piringer. A generic method for the integration of interactive visualization and statistical computing using R. IEEE Conf. Visual Analytics Science and Technology (VAST 2012), 133–134, 2012.

J.A. Martín-Fernández, K. Hron, M. Templ, P. Filzmoser, and J. Palarea-Albaladejo. Model-based replacement of rounded zeros in compositional data: classical and robust approaches. *Computational Statistics and Data Analysis*, 56(9), 2688–2704, 2012.

N.M. Neykov, P. Cizek, P. Filzmoser, and P.N. Neytchev. The least trimmed quantile regression. *Computational Statistics & Data Analysis*, 56, 1757–1770, 2012.

N. Neykov, P. Filzmoser, and P. Neytchev. Robust joint modeling of mean and dispersion through trimming. *Computational Statistics & Data Analysis*, 56, 34–48, 2012.

C. Pascoal, M.R. de Oliveira, R. Valadas, P. Filzmoser, P. Salvador, and A. Pacheco. Robust feature selection and robust PCA for internet traffic anomaly detection. *Proceedings of the 31th IEEE International Conference on Computer Communications (IEEE INFOCOM 2012)*, Orlando, Florida, ISSN 0743-166X, pp. 1755–1763, 2012.

C. Reimann, M. Birke, and P. Filzmoser. Temperature-dependent leaching of chemical elements from mineral water bottle materials. *Applied Geochemistry*, 27, 1492–1498, 2012.

C. Reimann, P. Filzmoser, K. Fabian, K. Hron, M. Birke, A. Demtriades, E. Dinelli, A. Ladenberger, and The GEMAS Project Team. The concept of compositional data analysis in practice - Total major element concentrations in agricultural and grazing land soils of Europe. *Science of the Total Environment*, 426, 196–210, 2012.

J. Sucharova, I. Suchara, M. Hola, S. Marikova, C. Reimann, R. Boyd, P. Filzmoser, and P. Englmaier. Top-/bottom-soil ratios and enrichment factors: What do they really show? *Applied Geochemistry*, 27, 138–145, 2012.

M. Templ, A. Alfons, and P. Filzmoser. Exploring incomplete data using visualization techniques. *Advances in Data Analysis and Classification*, 6(1), 29–47, 2012.

K. Varmuza, P. Filzmoser, B. Liebmann, and M. Dehmer. Redundancy analysis for characterizing the correlation between groups of variables – applied to molecular descriptors. *Chemometrics and Intelligent Laboratory Systems*, 117, 31–41, 2012.

2011

A. Alfons, W.E. Baaske, P. Filzmoser, W. Mader, and R. Wieser. Robust variable selection with application to quality of life research. *Statistical Methods and Applications*, 20, 65–82, 2011.

A. Alfons, S. Kraft, M. Templ, and P. Filzmoser. Simulation of close-to-reality population data for household surveys with application to EU-SILC. *Statistical Methods and Applications*, 20(3), 383–407, 2011.

W. Berger, H. Piringer, P. Filzmoser, and E. Gröller. Uncertainty-aware exploration of continuous parameter spaces using multivariate prediction. *Computer Graphics Forum*, 30(3), 911–920.

J.J. Egozcue, J. Daunis-i-Estadella, V. Pawlowsky-Glahn, K. Hron and P. Filzmoser. Simplicial regression. The normal model. *Journal of Applied Probability and Statistics*, 6 (1 & 2), 87-108, 2011.

P. Filzmoser and K. Hron. Robust statistical analysis. In V. Pawlowsky-Glahn and A. Buccianti, editors, *Compositional Data Analysis. Theory and Applications*, pages 59–72, Chichester, UK, 2011. John Wiley & Sons.

P. Filzmoser, K. Hron, and M. Templ. Robust compositional data analysis. In J.J. Egozcue, R. Tolosano-Delgado, and M.I. Ortego, editors, *Proceedings of the 4th International Workshop on Compositional Data Analysis*, 4 pages, University of Girona, Girona, Spain, ISBN: 978-84-87867-76-7, 2011.

P. Filzmoser and V. Todorov. Review of robust multivariate statistical methods in high dimension. *Analytica Chimica Acta*, 705, 2–14, 2011.

K. Hron, M. Templ, and P. Filzmoser. Classical and robust imputation of missing values for compositional data using balances. In J.J. Egozcue, R. Tolosano-Delgado, and M.I. Ortego, editors, *Proceedings of the 4th International Workshop on Compositional Data Analysis*, 1 page, University of Girona, Girona, Spain, ISBN: 978-84-87867-76-7, 2011.

W. Huf, K. Kalcher, G. Pail, M.-E. Friedrich, P.. Filzmoser, and S. Kasper. Meta-analysis: Fact or fiction? How to interpret Meta-analyses. *The World Journal of Biological Psychiatry*, 12, 188–200, 2011.

H. Katschnig, G. Endel, F. Endel, P. Filzmoser, and B. Weibold. Identifying psychiatric patients' pathways of care by record linkage after pseudonymisation: linking inpatient and outpatient data for the total population of a province of Austria. *Psychiatrische Praxis*, Issue S 01, Vol. 38, DOI: 10.1055/s-0031-1277820

C. Reimann, M. Birke, and P. Filzmoser. Data Analysis for Urban Geochemical Data. In: C.C. Johnson, A. Demetriates, J. Locutura, R.T. Ottesen (eds.), *Mapping the Chemical Environment of Urban Areas*, pages 99–115, Wiley-Blackwell, Chichester, UK, 2011.

A. Sarbu, G.A. Janauer, U. Schmidt-Mumm, P. Filzmoser, D. Smarandache, and G. Pascale. Characterization of the potamal Danube River and the Delta: connectivity determines indicative macrophyte assemblages. *Hydrobiologia*, 671(1), 75-93, 2011.

J. Sucharova, I. Suchara, M. Hola, C. Reimann, R. Boyd, P. Filzmoser, and P. Englmaier. Linking chemical elements in forest floor humus (O-horizon) in the Czech Republic to contamination sources. *Environmental Pollution*, 159, 1205–1214, 2011.

I. Suchara, J. Sucharova, M. Hola, C. Reimann, R. Boyd, P. Filzmoser, and P. Englmaier. The performance of moss, grass, and 1- and 2-year old spruce needles as bioindicators of contamination: A comparative study at the scale of the Czech Republic. *Science of the Total Environment*, 409, 2281–2297, 2011.

J. Sucharova, I. Suchara, M. Hola, C. Reimann, R. Boyd, P. Filzmoser, and P. Englmaier. Spatial distribution of lead and lead isotopes in soil B-horizon, forest-floor humus, grass (Avenella flexuosa) and spruce (Picea abies) needles across the Czech Republic. *Applied Geochemistry*, 26, 1205–1214, 2011.

M. Templ, K. Hron, and P. Filzmoser. robCompositions: an R-package for robust statistical analysis of compositional data. In V. Pawlowsky-Glahn and A. Buccianti, editors, *Compositional Data Analysis. Theory and Applications*, pages 341–355, Chichester, UK, 2011. John Wiley & Sons.

M. Templ, P. Filzmoser, and K. Hron. Analysis of compositional data using robust methods. The R-package robCompositions. In J.J. Egozcue, R. Tolosano-Delgado, and M.I. Ortego, editors, *Proceedings of the 4th International Workshop on Compositional Data Analysis*, 5 pages, University of Girona, Girona, Spain, ISBN: 978-84-87867-76-7, 2011.

M. Templ, A. Kowarik, and P. Filzmoser: Imputation of complex data with R-package VIM: Traditional and new methods based on robust estimation, Key Invited paper. UNECE worksession on statistical data editing, Ljubljana, Slovenia, 9-11 May 2011, 10 pages.

M. Templ, A. Kowarik, and P. Filzmoser. Iterative stepwise regression imputation using standard and robust methods. *Computational Statistics & Data Analysis*, 55, 2793–2806, 2011.

H. Treiblmaier and P. Filzmoser. Benefits from using continuous rating scales in online survey research. *Proceedings of the International Conference on Information Systems (ICIS)*, Shanghai, China, December 4-7, 2011. Association for Information Systems 2011, ISBN 978-0-615-55907-0. http://aisel.aisnet.org/icis2011/proceedings/researchmethods/1/

V. Todorov, M. Templ, and P. Filzmoser. Detection of multivariate outliers in business survey data with incomplete information. *Advances in Data Analysis and Classification.* 5(1), 37–56, 2011.

V. Todorov, M. Templ, and P. Filzmoser: Software for multivariate outlier detection in survey data, Key Invited paper. UNECE worksession on statistical data editing, Ljubljana, Slovenia, 9-11 May 2011, 16 pages.

C. Turkay, P. Filzmoser, and H. Hauser. Brushing dimensions–A dual visual analysis model for high-dimensional data. *IEEE Transactions on Visualization and Computer Graphics.* 17(12), 2591–2599, 2011

K. Varmuza, C. Engrand, P. Filzmoser, M. Hilchenbach, J. Kissel, H. Krüger, J. Silen, and M. Trieloff. Random projection for dimensionality reduction–Applied to time-of-flight secondary ion mass spectrometry data. *Analytica Chimica Acta*, 705, 48–55, 2011.

2010

A. Alfons, M. Templ, and P. Filzmoser. An object-oriented framework for statistical simulation: the R package simFrame. *Journal of Statistical Software*, 37(3), 1-36, 2010.

A. Alfons, M. Templ, and P. Filzmoser. Contamination models in the R package simFrame for statistical simulation. In S. Aivazian, P. Filzmoser, and Yu. Kharin, editors, *Proceedings of the Ninth International Conference on Computer Data Analysis and Modeling*, volume 2, pages 178–181, Minsk, 2010. Belarusian State University.

A. Alfons, M. Templ, P. Filzmoser, and J. Holzer. A comparison of robust methods for Pareto tail modeling in the case of Laeken indicators. In C. Borgelt, G. González-Rodríguez, W. Trutschnig, M.A. Lubiano, M.A. Gil, P. Grzegorzewski, and O. Hryniewicz, editors, *Combining Soft Computing and Statistical Methods in Data Analysis*, pages 17–24, Springer-Verlag, Berlin, 2010.

K. Böheim, S.-M. Pok, M. Schlögel, and P. Filzmoser. Active middle ear implant compared with open-fit hearing aid in sloping high-frequency sensorineural hearing loss. *Otology & Neurotology*, 31(3), 424–429, 2010.

P. Filzmoser. Soft methods in robust statistics. In C. Borgelt, G. González-Rodríguez, W. Trutschnig, M.A. Lubiano, M.A. Gil, P. Grzegorzewski, and O. Hryniewicz, editors, *Combining Soft Computing and Statistical Methods in Data Analysis*, pages 273–280, Springer-Verlag, Berlin, 2010.

P. Filzmoser and K. Hron. Multivariate outlier detection with compositional data. In S. Aivazian, P. Filzmoser, and Yu. Kharin, editors, *Proceedings of the Ninth International Conference on Computer Data Analysis and Modeling*, volume 1, pages 45–52, Minsk, 2010. Belarusian State University.

P. Filzmoser and K. Hron. Robust multivariate methods for compositional data. In Y. Lechevallier and G. Saporta, editors, *COMPSTAT 2010 – Proceedings in Computational Statistics*, pages 79–88, Springer-Verlag, Berlin, 2010.

P. Filzmoser, K. Hron, and C. Reimann. The bivariate statistical analysis of environmental (compositional) data. *Science of the Total Environment*, 408, 4230–4238, 2010.

K. Hron and P. Filzmoser. Elements of robust regression for data with absolute and relative information. In C. Borgelt, G. González-Rodríguez, W. Trutschnig, M.A. Lubiano, M.A. Gil, P. Grzegorzewski, and O. Hryniewicz, editors, *Combining Soft Computing and Statistical Methods in Data Analysis*, pages 329–335, Springer-Verlag, Berlin, 2010.

K. Hron, M. Templ, and P. Filzmoser. Exploratory compositional data analysis using the R-package robCompositions. In S. Aivazian, P. Filzmoser, and Yu. Kharin, editors, *Proceedings of the Ninth International Conference on Computer Data Analysis and Modeling*, volume 1, pages 179–186, Minsk, 2010. Belarusian State University.

K. Hron, M. Templ, and P. Filzmoser. Imputation of missing values for compositional data using classical and robust methods. *Computational Statistics & Data Analysis*, 54, 3095–3107, 2010.

Z. Karácsony and P. Filzmoser. Asymptotic normality of kernel type regression estimators for random fields. *Journal of Statistical Planning and Inference*, 140, 872–886, 2010.

J. Kehrer, P. Filzmoser, and H. Hauser. Brushing moments in interactive visual analysis. *Computer Graphics Forum*, 29(3), 813–822, 2010.

B. Liebmann, P. Filzmoser, and K. Varmuza. Robust and classical PLS regression compared. *Journal of Chemometrics*, 24, 111–120, 2010.

C. Reimann, M. Birke, and P. Filzmoser. Bottled drinking water: water contamination from bottle materials (glass, soft PET, hard PET), the influence of colour and acidification. *Applied Geochemistry*, 25, 1030–1046, 2010.

C. Reimann, M. Birke, and P. Filzmoser. Reply to the comment "Bottled drinking water: water contamination from bottle materials (glass, hard PET, soft PET), the influence of colour and acidification" by Hayo Müller-Simon. *Applied Geochemistry*, 25, 1464–1465, 2010.

V. Todorov and P. Filzmoser. Robust statistic for the one-way MANOVA. *Computational Statistics & Data Analysis*, 54, 37–48, 2010.

H. Treiblmaier and P. Filzmoser. Exploratory factor analysis revisited: How robust methods support the detection of hidden multivariate data structures in IS research. *Information & Management*, 47, 197–207, 2010.

K. Varmuza, P. Filzmoser, and B. Liebmann. Random projection experiments with chemometric data. *Journal of Chemometrics*, 24, 209–217, 2010.

2009

W.E. Baaske, P. Filzmoser, W. Mader, and R. Wieser. Agriculture as a success factor for municipalities. In H. Peyerl, editor, *Jahrbuch der Österreichischen Gesellschaft für Agrarökonomie*, volume 18(1), pages 21–30, Wien, 2009. Facultas Verlag.

P. Filzmoser. Discussion of "Invariant co-ordinate selection" by D.E. Tyler, F. Critchley, L. Dümbgen, and H. Oja. Journal of the Royal Statistical Society, Series B. 71(3), 583, 2009.

P. Filzmoser and K. Hron. Correlation analysis for compositional data. *Mathematical Geosciences*, 41, 905–919, 2009.

P. Filzmoser, K. Hron, and C. Reimann. Principal component analysis for compositional data with outliers. *Environmetrics*, 20, 621–632, 2009.

P. Filzmoser, K. Hron, and C. Reimann. Univariate statistical analysis of environmental (compositional) data: Problems and possibilities. *Science of the Total Environment*, 407, 6100–6108, 2009.

P. Filzmoser, K. Hron, C. Reimann, and R.G. Garrett. Robust factor analysis for compositional data. *Computers & Geosciences*, 35, 1854–1861, 2009.

P. Filzmoser, B. Liebmann, and K. Varmuza. Repeated double cross validation. *Journal of Chemometrics*, 23(4), 160–171, 2009.

P. Filzmoser, S. Serneels, R. Maronna, and P.J. Van Espen. Robust multivariate methods in Chemometrics, In S.D. Brown, R. Tauler, and B. Walczak, editors, *Comprehensive Chemometrics: Chemical and Biochemical Data Analysis*, Elsevier, Amsterdam, 2009, pp. 681–722.

C. Reimann, A. Demetriades, O.A. Eggen, P. Filzmoser and the EuroGeoSurveys Geochemistry expert group. The EuroGeoSurveys geochemical mapping of agricultural and grazing land soils project (GEMAS) - Evaluation of quality control results of aqua regia extraction analysis. Technical Report 2009.049, Geological Survey of Norway (NGU), Trondheim, Norway, 2009.

V. Todorov and P. Filzmoser. An object oriented framework for robust multivariate analysis. *Journal of Statistical Software*. 32(3), 1–47, 2009.

2008

C. Croux, P. Filzmoser, and K. Joossens. Classification efficiencies for robust linear discriminant analysis. *Statistica Sinica.* 18, 581-599, 2008.

P. Filzmoser and K. Hron. Outlier detection for compositional data using robust methods. *Mathematical Geosciences.* 40(3), 233–248, 2008.

P. Filzmoser, R. Maronna, and M. Werner. Outlier Identification in High Dimensions. *Computational Statistics and Data Analysis*, 52, 1694–1711, 2008.

M. Germ, O. Urbanc-Berčič, G.A. Janauer, P. Filzmoser, N. Exler, and A. Gaberščik. Macrophyte distribution pattern in the Krka River–the role of habitat quality. *Large Rivers*, 18(1-2), 145–155, 2008.

M. Templ, P. Filzmoser, and C. Reimann. Cluster analysis applied to regional geochemical data: Problems and possibilities. *Applied Geochemistry.* 23(8), 2198–2213, 2008.

A. Weisser, G. Endel, P. Filzmoser, and M. Gyimesi. ATC → ICD – evaluating the reliability of prognoses for ICD-10 diagnoses derived from the ATC-Code of prescriptions. *BMC Health Services Research.* 8(Suppl I):A10, 2008. doi:10.1186/1472-6963-8-S1-A10.

2007

C. Croux and P. Filzmoser. Discussion of "A Survey of Robust Statistics," by S. Morgenthaler, *Statistical Methods and Applications*, 15 (3), 271–293, 2007.

C. Croux, P. Filzmoser, and M.R. Oliveira. Algorithms for projection-pursuit robust principal component analysis. *Chemometrics and Intelligent Laboratory Systems*, 87, 218–225, 2007.

P. Filzmoser and H. Fritz. Exploring high-dimensional data with robust principal components. In S. Aivazian, P. Filzmoser, and Yu. Kharin, editors, *Proceedings of the Eighth International Conference on Computer Data Analysis and Modeling*, volume 1, pages 18–22, Minsk, 2007. Belarusian State University.

N. Neykov, P. Filzmoser, R. Dimova, and P. Neytchev. Robust fitting of mixtures using the trimmed likelihood estimator. *Computational Statistics and Data Analysis*, 17 (3), 299-308, 2007.

C. Reimann, A. Arnoldussen, P. Englmaier, P. Filzmoser, T.E. Finne, R.G. Garrett, F. Koller, and Ø. Nordgulen. Element concentrations and variations along a 120-km transect in southern Norway - Anthropogenic vs. geogenic vs. biogenic element sources and cycles. *Applied Geochemistry*, 22, 851–871, 2007.

2006

I. Fazekas and P. Filzmoser. A functional central limit theorem for kernel type density estimators. *Austrian Journal of Statistics*, 35(4), 409–418, 2006.

P. Filzmoser, K. Joossens, and C. Croux. Multiple group linear discriminant analysis: Robustness and error rate. In A. Rizzi and M. Vichi, editors, *COMPSTAT 2006 – Proceedings in Computational Statistics*, pages 521–532, Physica-Verlag, Heidelberg, 2006.

P. Filzmoser, S. Serneels, C. Croux, and P.J. Van Espen. Robust multivariate methods: The projection pursuit approach. In M. Spiliopoulou, R. Kruse, C. Borgelt, A. Nürnberger, and W. Gaul, editors, *From Data and Information Analysis to Knowledge Engineering*, pages 270–277, Springer Verlag, Berlin, 2006.

G.A. Janauer, P. Filzmoser, H. Otahelova, A. Gaberscik, J. Topic, A. Berczik, R. Igic, V. Vulchev, A. Sarbu, A. Kohler, and N. Exler. Macrophyte Habitat Preference, River Restoration, and the WFD: making use of the MIDCC data base. In Proceedings 36th International Conference of IAD, pages 81–85, Austrian Committee Danube Research/IAD, Vienna. ISBN 13:978-3-9500723-2-7, 2006.

G.A. Janauer, E. Lanz, P. Filzmoser, and N. Exler. Breg and Brigach, source streams of the Danube: changes based on macrophyte surveys 1967, 1989, and 2004. In Proceedings 36th International Conference of IAD, pages 86–90, Austrian Committee Danube Research/IAD, Vienna. ISBN 13:978-3-9500723-2-7, 2006.

A. Sarbu, G. Janauer, N. Exler, and P. Filzmoser. The aquatic vegetation of large Danube river branches in Romania. In Proceedings 36th International Conference of IAD, pages 101–106, Austrian Committee Danube Research/IAD, Vienna. ISBN 13:978-3-9500723-2-7, 2006.

B. Richter, M. Gwechenberger, P. Filzmoser, M. Marx, P. Lercher, and H.D. Gössinger. Is inducibility of atrial fibrillation after radio frequency ablation really a relevant prognostic factor? *European Heart Journal*, 27, 2553–2559, 2006.

S. Serneels, C. Croux, P. Filzmoser, and P.J. Van Espen. The partial robust M approach. In M. Spiliopoulou, R. Kruse, C. Borgelt, A. Nürnberger, and W. Gaul, editors, *From Data and Information Analysis to Knowledge Engineering*, pages 230–237, Springer Verlag, Berlin, 2006.

D. Zick, H. Gassner, P. Filzmoser, J. Wanzenböck, B. Pamminger-Lahnsteiner, and G. Tischler. Changes in the fish species composition of all Austrian lakes > 50 ha during the last 150 years. *Fisheries Management and Ecology*, 13, 103–111, 2006.

2005

J.A. Branco, C. Croux, P. Filzmoser, and M.R. Oliveira. Robust canonical correlations: a comparative study. *Computational Statistics*, 20(2):203–229, 2005.

P. Filzmoser. Identification of multivariate outliers: a performance study. *Austrian Journal of Statistics*, 34(2):127–138, 2005.

P. Filzmoser, R.G. Garrett, and C. Reimann. Multivariate outlier detection in exploration geochemistry. *Computers & Geosciences*, 31:579–587, 2005.

P.J. van Helvoort, P. Filzmoser, and P.F.M. van Gaans. Sequential factor analysis as a new approach to multivariate analysis of heterogeneous geochemical datasets: an application to a bulk chemical characterization of fluvial deposits (Rhine-Meuse delta, The Netherlands). *Applied Geochemistry*, 20:2233–2251, 2005.

C. Reimann, P. Filzmoser, and R.G. Garrett. Background and threshold: critical comparison of methods of determination. *Science of the Total Environment*, 346:1–16, 2005.

S. Serneels, C. Croux, P. Filzmoser, and P.J. Van Espen. Partial robust M-regression. *Chemometrics and Intelligent Laboratory Systems*, 79(1-2):55–64, 2005.

S. Serneels, P. Filzmoser, C. Croux, and P.J. Van Espen. Robust continuum regression. *Chemometrics and Intelligent Laboratory Systems*, 76(2):197–204, 2005.

2004

P. Filzmoser. A multivariate outlier detection method. In S. Aivazian, P. Filzmoser, and Yu. Kharin, editors, *Proceedings of the Seventh International Conference on Computer Data Analysis and Modeling*, volume 1, pages 18–22, Minsk, 2004. Belarusian State University.

P. Filzmoser and R. Viertl. Testing hypotheses with fuzzy data: The fuzzy *p*-value. *Metrika*, 59(1):21–29, 2004.

N. Neykov, P. Filzmoser, R. Dimova, and P. Neytchev. Mixture of GLMs and the trimmed likelihood methodology. In J. Antoch, editor, *COMPSTAT: Proceedings in Computational Statistics*, pages 1585–1592, Heidelberg, 2004. Physica-Verlag.

M.R. Oliveira, J.A. Branco, C. Croux, and P. Filzmoser. Robust redundancy analysis by alternating regression. *Theory and Applications of Recent Robust Methods*, edited by M. Hubert, G. Pison, A. Struyf and S. Van Aelst, Series: Statistics for Industry and Technology, pages 235–246, Birkhäuser, Basel. 2004. (ISBN: 3-7643-7060-2)

2003

C. Croux, P. Filzmoser, G. Pison, and P.J. Rousseeuw. Fitting multiplicative models by robust alternating regressions. *Statistics and Computing*, 13:23–36, 2003.

P. Filzmoser and C. Croux. Dimension reduction of the explanatory variables in multiple linear regression. *Pliska Studia Mathematica Bulgarica*, 14:59–70, 2003.

P. Filzmoser, G.A. Janauer, and N. Exler. A statistical method for finding indicators of water quality. In M. Ruoppa, P. Heinonen, A. Pilke, S. Rekolainen, H. Toivonen, and H. Vuoristo, editors, *How to assess and monitor ecological quality in freshwaters*, pages 19–23, Copenhagen, 2003. Nordic Council of Ministers.

G. Pison, P.J. Rousseeuw, P. Filzmoser, and C. Croux. Robust factor analysis. *Journal of Multivariate Analysis*, 84:145–172, 2003.

2002

P. Filzmoser. Robust factor analysis methods and applications. In G.A. Marcoulides and I. Moustaki, editors, *Latent variable and latent structure models*, pages 153–194, Mahwa, New Jersey, 2002. Lawrence Erlbaum Associates.

P. Filzmoser and C. Croux. A projection algorithm for regression with collinearity. In K. Jajuga, A. Sokolowski, and H.-H. Bock, editors, *Classification, Clustering, and Data Analysis*, pages 227–234, Berlin, 2002. Springer-Verlag.

P. Filzmoser and C. Reimann. Robust multivariate methods in geostatistics. In W. Gaul and G. Ritter, editors, *Classification, Automation, and New Media*, pages 429–436, Berlin, 2002. Springer-Verlag.

P. Filzmoser and P.J. Rousseeuw. Robust statistics. In *The Encyclopedia of Life Support Systems*, Oxford, UK, 2002. EOLSS Publishers. http://www.eolss.net.

C. Reimann, P. Filzmoser, and R.G. Garrett. Factor analysis applied to regional geochemical data: Problems and possibilities. *Applied Geochemistry*, 17:185–206, 2002.

2001

P. Filzmoser. Robust principal component regression. In S. Aivazian, Yu. Kharin, and H. Rieder, editors, *Proceedings of the Sixth International Conference on Computer Data Analysis and Modeling*, volume 1, pages 132–137, Minsk, 2001. Belarusian State University.

C. Reimann, H. Niskavaara, G. Kashulina, P. Filzmoser, R. Boyd, T. Volden, O. Tomilina, and I. Bogatyrev. Critical remarks on the use of terrestrial moss (Hylocomium splendens and Pleurozium schreberi) for monitoring of airborne pollution. *Environmental Pollution*, 113: 41–57, 2001.

2000

C. Dehon, P. Filzmoser, and C. Croux. Robust methods for canonical correlation analysis. In H.A.L. Kiers, J.P. Rasson, P.J.F. Groenen, and M. Schrader, editors, *Data Analysis, Classification, and Related Methods*, pages 321–326, Berlin, 2000. Springer-Verlag.

P. Filzmoser. Orthogonal principal planes. *Psychometrika*, 63:363–376, 2000.

P. Filzmoser, C. Dehon, and C. Croux. Outlier resistant estimators for canonical correlation analysis. In J.G. Bethlehem and P.G.M. van der Heijden, editors, *COMPSTAT: Proceedings in Computational Statistics*, pages 301–306, Heidelberg, 2000. Physica-Verlag.

P. Filzmoser and C. Reimann. Prediction of the spatial structure of censored data by robust statistical methods. Technical Report 2000.84, Geological Survey of Norway (NGU), Trondheim, Norway, 2000.

G. Pison, P.J. Rousseeuw, P. Filzmoser, and C. Croux. A robust version of principal factor analysis. In J.G. Bethlehem and P.G.M. van der Heijden, editors, *COMPSTAT: Proceedings in Computational Statistics*, pages 385–390, Heidelberg, 2000. Physica-Verlag.

C. Reimann and P. Filzmoser. Normal and lognormal data distribution in geochemistry: Death of a myth. Consequences for the statistical treatment of geochemical and environmental data. *Environmental Geology*, 39(9):1001–1014, 2000.

1999

P. Filzmoser. Robust principal components and factor analysis in the geostatistical treatment of environmental data. *Environmetrics*, 10:363–375, 1999.

P. Filzmoser, R. Baumgartner, and E. Moser. A hierarchical clustering method for analyzing functional MR images. *Magnetic Resonance Imaging*, 17:817–826, 1999.

P. Filzmoser, C. Croux, G. Pison, and P.J. Rousseeuw. Robust estimation in the factor analysis model. In H. Friedl, A. Berghold, and G. Kauermann, editors, *Proceedings of the 14th International Workshop on Statistical Modelling*, pages 513–515, Graz, Austria, 1999. University of Technology.

1998

C. Croux and P. Filzmoser. A robust biplot representation of two-way tables. In A. Rizzi, M. Vichi, and H.-H. Bock, editors, *Advances in Data Science and Classification*, pages 355–361, Berlin, 1998. Springer-Verlag.

C. Croux and P. Filzmoser. Robust factorization of a data matrix. In R. Payne and P. Green, editors, *COMPSTAT, Proceedings in Computational Statistics*, pages 245–249, Heidelberg, 1998. Physica-Verlag.

P. Filzmoser. Generalized principal planes. In K. Fernandez-Aguirre and A. Morineau, editors, *Actes du IVème Congrès International d'Analyses Multidimensionnelles Des Données*, pages 87–100, Saint-Mandé, France, 1998. Cisia-Ceresta.

P. Filzmoser. The usage of robust multivariate methods in combination with geostatistical tools. In A. Buccianti, G. Nardi, and R. Potenza, editors, *Proceedings of IAMG'98*, pages 415–420, Naples, Italy, 1998. De Frede.

P. Filzmoser, R. Baumgartner, and E. Moser. A split and merge algorithm for analyzing functional MR images. *Magnetic Resonance Materials in Physics, Biology and Medicine (MAGMA)*, 6, Suppl. 1:90–91, 1998.

1997

K. Böheim, A. Nahler, H. Schlögel, and P. Filzmoser. Results with gold pistons in small-fenestra stapedectomy. *Oto-Rhino-Laryngologia Nova*, 7:235–240, 1997. In German.

P. Filzmoser. Finding structures of interest in a large data set using factor analysis. *Austrian Journal of Statistics*, 26(2):27–34, 1997.

P. Filzmoser. Investigation of the language in Germany and Austria using statistical methods. In R. Klar and O. Opitz, editors, *Classification and Knowledge Organization*, pages 658–660, Heidelberg, 1997. Springer-Verlag.

C. Kollmann, P. Filzmoser, W. Backfrieder, and H. Bergmann. Ein automatisiertes Verfahren zur Segmentierung der Farbinformation von amplitudenkodierten Ultraschall-Farbdoppler-geräten (AKDS). In K. Beckh et al., editor, *Ultraschall in der Medizin*, page 79, Stuttgart, 1997. Georg Thieme Verlag. In German.

SCIENTIFIC PRESENTATIONS

2023

"Robust statistical methods applied to high-dimensional data from tribology," **Invited Presentation**, *ANAKON 2023*, TU Wien, Vienna, Austria, April 13, 2023.

"A robust knockoff filter for sparse regression with microbiome compositions," *ODAM 2023*, Palacký University Olomouc, Olomouc, Czech Republic, June 12, 2023.

2022

"Statistik basierend auf absoluter bzw. relativer Information," **Invited Presentation**, *TUForMath*, TU Wien, Vienna, Austria, April 7, 2022.

"Robust and sparse multinomial regression", **Invited Presentation**, *Statistics and Econometrics Seminar, Humboldt Universität Berlin*, Berlin, Germany, May 31, 2022.

"Outliers and compositional data," *SEMACRET kick-off meeting*, Oulu, Finland, virtual presentation, June 7, 2022.

"Robust multinomial regression in high dimensions," **Invited Presentation**, *International Conference on Robust Statistics (ICORS 2022)*, Waterloo, Canada, July 5, 2022.

"Benford goes multivariate: A new fraud detection method, with application to music streaming data," **Invited Presentation**, *Models and Learning in Clustering and Classification*, Catania, Italy, Aug. 31, 2022.

"Robust linear and logistic regression for high-dimensional compositional data," **Invited Presentation**, *Applied Statistics 2022*, Ljubljana, Slovenia, Sep. 20, 2022.

2021

"Garbage in - garbage out: Die Auswirkungen der Datenqualität auf Machine Learning," **Invited Presentation**, *Zukunftsfragen des Baubetriebes*, TU Wien, Vienna, Austria, May 18, 2021.

"Introduction to data analysis techniques and the CODA approach," **Invited Presentation**, *Short course on Fingerprinting techniques in mineral exploration*, Virtual meeting, June 17, 2021.

"Introduction to robust statistics," **Invited Presentation**, Data Science Group of VNR Verlag, Virtual meeting, Bonn, Germany, June 28, 2021.

"Robust logistic zero-sum regression for compositional data," **Invited Presentation**, *Data Science, Statistics and Visualisation (DSSV)*, Virtual meeting, Rotterdam, The Netherlands, July 9, 2021.

"A robust method to classify high-dimensional microbiome compositions," **Invited Presentation**, *The 63rd Session of the International Statistical Institute*, Virtual meeting, De Hague, The Netherlands, July 15, 2021.

Robustness aspects for the statistical analysis related to industrial applicationsa, **Invited Presentation**, *International Conference on Mathematical Methods in Economy and Industry (MMEI)*, Smolenice, Slovakia, September 16, 2021.

Relativ versus absolut: Eine Einführung in die Analyse von Kompositionsdaten. **Invited Presentation**, *AC²T Student Camp*, Vorau, Austria, September 30, 2021.

2020

"Robust and sparse k-means clustering in high dimension," **Invited Presentation**, *Seminar of the Institute of Applied Statistics*, University of Linz, Linz, Austria, January 23, 2020.

"Statistical data analysis of surface geochemical data including case studies from Finland, Greenland and France," *Online seminar of the project Upscaling deep buried geochemical exploration techniques into European business – UpDeep*, Espoo, Finland, March 26, 2020.

"Strategies to replace high proportions of zeros in compositional data," **Invited Presentation**, *Conference on IT and Data Science (virtual)*, Debrecen, Hungary, Novemver 7, 2020.

2019

"Potentials of compositional data analysis in practical applications," **Invited lecture**, *Correspondence Analysis and Related Methods (CARME)*, Stellenbosch, South Africa, February 4, 2019.

"Robust and sparse classification in high dimensions," **Invited lecture**, *Seminar presentation at the Institute of Statistics, Stellenbosch University*, Stellenbosch, South Africa, February 8, 2019.

"Compositional Data Analysis," **Invited lecture**, *Short Course at the Conference of the Portuguese Society for Classification and Data Analysis*, Viseu, Portugal, April 11, 2019.

"The log-ratio approach to handle relative information." **Keynote lecture**, *Conference of the Portuguese Society for Classification and Data Analysis*, Viseu, Portugal, April 13, 2019.

"Buzzword Data Science – an Overview of Common Methods and their Use in R," **Invited lecture**, *Annual Meeting of the Austrian Actuarial Association*, TU Wien, Vienna, Austria, May 23, 2019.

"Robust k-means-based clustering for high-dimensional data." *International Conference on Robust Statistics (ICORS)*, Guayaquil, Ecuador, May 29, 2019.

"Robust and sparse estimation methods for linear and logistic regression in high dimensions." **Keynote lecture**, *Data Science, Machine Learning and Statistics (DMS)*, Van, Turkey, June 26, 2019.

"Fraud detection in the digital music industry." **Invited lecture**, *Benford's Law for fraud detection. Foundations, methods and application*, Stresa, Italy, July 12, 2019.

"Advanced methods of classification and regression." **Invited lecture**, *Austrian Academy of Sciences AI Summer School 2019*, Ligist, Austria, August 8, 2019.

"Outliers and compositional data." **Keynote lecture**, *20th Annual Conference of the International Association for Mathematical Geosciences*, State College, USA, August 15, 2019.

"Outlier detection in compositional data: from row-wise to cell-wise." **Invited lecture**, *The 62nd Session of the International Statistical Institute*, Kuala Lumpur, Malaysia, August 22, 2019.

"Linear methods for regression and classification." **Invited lecture**, *Data Science School, University of Bolzano*, Bolzano, Italy, August 27, 2019.

"Correlation analysis for compositional environmental data." **Invited lecture**, *Statistische Woche*, Trier, Germany, September 11, 2019.

"Robust and sparse k-means clustering for high-dimensional data." **Invited lecture**, *CDAM 2019 – Computer Data Analysis and Modeling*, Minsk, Belarus, Sep. 21, 2019.

"Robust regression and classification methods for high-dimensional data." **Invited lecture**, *Predictive Analytics Konferenz*, Vienna, Austria, October 3, 2019.

"k-means clustering for high-dimensional data: a robust and sparse method." *ÖSG Statistiktage*, Vienna, Austria, October 24, 2019.

"Correlation analysis for compositional data." **Invited lecture**, *Seminar presentation at KU Leuven*, Leuven, Belgium, November 26, 2019.

2018

"Choice of influencing factors: Lasso," **Invited lecture**, *BASF: Data Science Compact Course*, Großräschen, Germany, January 25, 2018.

"Robust elastic net (logistic) regression for high dimensional data," **Invited lecture**, *Visual Data Science and its role in Computational Medicine*, Delft, The Netherlands, February 6, 2018.

"What statistical tool is best?" **Invited lecture**, *Drawing Insights from Complex Data*, TU Wien, Vienna, Austria, April 11, 2018.

"Robust maximum association estimators," **Invited lecture**, *Forecasting from Complexity*, University of Minnesota, Minneapolis, USA, April 24, 2018.

"Estimators for robust maximum association," **Invited lecture**, *Modern Stochastics: Theory and Applications*, Taras Shevchenko National University of Kyiv, Kiew, Ukraine, May 24, 2018.

"Robust and sparse estimation methods for linear and logistic regression in high dimensions," **Invited lecture**, *Seminar at the Department of Finance, Accounting and Statistics, Wirtschaftsuniversität Wien*, Vienna, Austria, June 15, 2018.

"Robust linear and logistic regression in high dimension," **Invited lecture**, *Seminar at the Center for Medical Statistics, Informatics, and Intelligent Systems, MedUni Wien*, Vienna, Austria, June 18, 2018.

"Robust maximum association estimators," **Invited lecture**, *International Conference on Robust Statistics (ICORS 2018)*, Leuven, Belgium, July 3, 2018.

"The log-ratio methodology: Major concepts, robustness, and practical use," **Invited lecture**, *International Conference on Computational Statistics (COMPSTAT 2018)*, Iasi, Romania, August 28, 2018.

"The log-ratio methodology for compositional data analysis: concepts and applications," *Statistische Woche*, Linz, Austria, September 13, 2018.

"Robust estimators of maximum association," **Invited lecture**, *ISOR Colloquium at University of Vienna*, Vienna, Austria, November 19, 2018.

2017

"Compositional data analysis of geochemical data," **Invited lecture**, *Geological Survey of Finland*, Espoo, Finland, April 4, 2017.

"Correlation between variables in compositional data," **Invited lecture**, *European Geosciences Union General Assembly*, Vienna, Austria, April 28, 2017.

"Robust and sparse estimation methods for high dimensional linear and logistic regression," **Invited lecture**, *Workshop devoted to the 60th birthday of Peter Rousseeuw*, Leuven, Belgium, June 2, 2017.

"Symmetric coordinates for determining pairwise association between compositional parts," *Workshop on Compositional Data Analysis (CoDaWork 2017)*, Abbadia San Salvatore, Italy, June 6, 2017.

"PLS for regression and binary classification: robustness and sparsity," **Invited lecture**, *7th International Chemometrics Research Meeting (ICRM 2017)*, Berg en Dal, The Netherlands, September 12, 2017.

2016

"Robust statistics: Theory and practice", **Invited lecture**, *Summer School System Simulation – Computational Complex Systems*, Bad Fischau, Austria, May 30, 2016.

"Robustness in practice", **Invited lecture**, *International Conference on Robust Statistics*, Geneva, Switzerland, July 7, 2016.

"Sparse and robust PLS for regression and binary classification", **Invited lecture**, *Conference on Computational Statistics (COMPSTAT 2016)*, Oviedo, Spain, August 24, 2016.

"Opportunities of compositional data analysis for source apportionment", **Invited lecture**, *Workshop of the CEN/TC 264/WG 44 on Source Apportionment*, Vienna, Austria, November 10, 2016.

"Methodological concepts for source apportionment", **Invited lecture**, *Workshop on "Evaluierung von Monitoringdaten zu POPs, POP-Kandidaten und Ersatzstoffe zur Aufklärung von Ursachen, Pfaden und Trends der Umweltbelastung*, Bundesumweltamt (UBA), Berlin, Germany, November 18, 2016.

2015

"Robust statistics and R", **Invited lecture**, *International Conference on Robust Statistics*, Kolkata, India, January 11, 2015.

"Local multivariate outlier identification", **Invited lecture**, *Seminar at the Palacký University*, Olomouc, Czech Republic, January 26, 2015.

"Binary classification in high dimension using robust sparse PLS", **Invited lecture**, *Seminar at the Department of Statistics, TU Graz*, Graz, Austria, March 20, 2015.

"Advanced statistical methods for regression and Classification", **Invited lecture series**, *Innovative Lecture (INNOLEC), Masaryk University Brno*, Brno, Czech Republic, April 7-14, 2015.

"Robust statistical methods in theory and practice", **Invited lecture**, *Seminar at BASF*, Ludwigshafen, Germany, April 20, 2015.

"Constructing weighted balances for compositional data," *ODAM 2015 – Olomoucian Days of Applied Mathematics*, Olomouc, Czech Republic, May 21, 2015.

"Robust coordinates for compositional data using weighted balances," (P. Filzmoser, K. Hron, A. Gardlo, and P. de Caritat), **Invited keynote lecture**, *CoDaWork–International Workshop on Compositional Data Analysis*, L'Escala, Spain, June 2, 2015.

"Robust binary classification for high-dimensional data", **Invited lecture**, *Seminar at the Palacký University*, Olomouc, Czech Republic, June 15, 2015.

"High-dimensional regression and classification with sparse partial robust M estimation," **Invited Presentation**, *The 60th Session of the International Statistical Institute*, Rio de Janeiro, Brasil, July 27, 2015.

"Sparse partial robust M-estimation for regression and classification," **Invited Presentation**, *Statistische Woche*, Hamburg, Germany, September 15, 2015.

"Robust regression in high dimension," **Keynote lecture**, *Eighth International Workshop on Simulation*, Vienna, Austria, September 21, 2015.

"Basic and advanced methods for statistical analysis of geochemical data using R," **Invited Lectures**, *Wortshop at Geological Survey of Finland*, Espoo, Finland, September 28–October 1, 2015.

"Combining compositional and non-compositional information in the biplot," **Invited Presentation**, *Seminar presentation, K.U. Leuven*, Leuven, Belgium, November 9, 2015.

"Pairwise Mahalanobis distances in the context of local outlier detection," **Invited Presentation**, *Current and Future Challenges in Robust Statistics*, Banff, Canada, November 17, 2015.

2014

"Spline interpolation", **Invited lecture**, *Seminar at the Palacký University*, Olomouc, Czech Republic, February 24, 2014.

"Statistical aspects when analyzing geochemical compositions," **Invited lecture**, *European Geosciences Union General Assembly*, Vienna, Austria, April 28, 2014.

"Generalized additive models", **Invited lecture**, *Seminar at the Palacký University*, Olomouc, Czech Republic, April 28, 2014.

"Statistical analysis of compositional data," **Invited lecture**, *Seminar at the Lisbon University of Technology*, Lisbon, Portugal, May 15, 2014.

"Opportunities of compositional data analysis in chemometrics," **Keynote lecture**, *Chemometrics in Analytical Chemistry*, Richmond, VA, USA, June 12, 2014.

"Sparse partial robust M regression," *International Conference on Robust Statistics (ICORS 2014)*, Halle, Germany, August 11, 2014.

"Outlier detection in interval data," *Conference on Computational Statistics (COMPSTAT 2014)*, Geneva, Switzerland, August 19, 2014.

"Identifikation multivariater Ausreißer bei Intervalldaten," *Workshop TU Wien – TU Dresden* Innsbruck, Austria, August 26, 2014.

"Identification of multivariate outliers in interval data", **Invited lecture**, *Seminar at the Palacký University*, Olomouc, Czech Republic, September 29, 2014.

"PCA and beyond," **Invited lecture**, *Seminar for students of the Palacký University*, Velké Losiny, Czech Republic, November 21, 2014.

2013

"Robust dimension reduction for high-dimensional data," **Invited lecture**, *Seminar at the Palacký University*, Olomouc, Czech Republic, February 4, 2013.

"Sparse regression and classification methods for high-dimensional data," **Invited lecture**, *Seminar at the Vienna PhD-School of Informatics, Vienna University of Technology*, Vienna, Austria, February 7, 2013.

"Advanced methods for regression and classification, and how to use them in R," **Invited lecture**, *ECO Winter Workshop, Linnaeus University Kalmar*, Kalmar, Sweden, February 28, 2013.

"Sparse and robust principal component analysis," (P. Filzmoser, C. Croux, and H. Fritz), **Invited Presentation**, *DAGStat: Joint Statistical Meeting*, Freiburg, Germany, March 20, 2013.

"Variable selection in regression models," **Invited lecture**, *Seminar at the Palacký University*, Olomouc, Czech Republic, April 8, 2013.

"Robust variable selection in linear regression with compositional explanatory variables", **Invited lecture**, *Seminar at the University of Geneva*, Geneva, Switzerland, April 19, 2013.

"Computational statistics: The ATC/ICD project and applications," **Invited lecture**, *Workshop on Innovative Methods for Evidence Based Decision Making in Healthcare*, Vienna, Austria, April 23, 2013.

"Stepwise variable selection in robust regression with compositional explanatory variables," *ODAM 2013 – Olomoucian Days of Applied Mathematics*, Olomouc, Czech Republic, June 14, 2013.

"Outlier detection in compositional data with structural zeros," *ODAM 2013 – Olomoucian Days of Applied Mathematics*, Olomouc, Czech Republic, June 14, 2013.

"Analysis of chemical data from a compositional point of view," **Invited lecture**, *CCM VIII – Colloquium Chemiometricum Mediterraneum*, Bevagna, Italy, July 2, 2013.

"Robust linear regression for compositional data," `ICORS 2013 -- International Conference on Robust Statistics`, St. Petersburg, Russia, July 8, 2013.

"A projection-pursuit method for sparse robust PCA," **Invited lecture**, *CDAM 2013 – Computer Data Analysis and Modeling*, Minsk, Belarus, Sep. 11, 2013.

"R tools for robust statistical analysis of high-dimensional data," *CDAM 2013 – Computer Data Analysis and Modeling*, Minsk, Belarus, Sep. 13, 2013.

"Linear and non-linear methods for regression and classification," **Invited lecture**, *Workshop at the University of Debrecen*, Debrecen, Hungary, October 21, 2013.

"Support vector machine," **Invited lecture**, *Seminar at the Palacký University*, Olomouc, Czech Republic, November 4, 2013.

"Robust statistics: theoretical and practical considerations," **Invited lecture**, *Seminar for students of the Palacký University*, Dolni Morava, Czech Republic, November 16, 2013.

"Multivariate Regression und Klassifikation mit Anwendungen aus der Chemometrie," **Invited lecture**, *Herbstseminar der Wiener Biometrischen Sektion*, Vienna, Austria, November 21, 2013.

"Sparse multivariate statistical methods for high-dimensional data," **Invited lecture**, *Seminar at the University of Bergen*, Bergen, Norway, November 22, 2013.

"Concepts of compositional data analysis," **Invited lecture**, *Seminar at the Institute for Water Quality, Resource and Waste Management, Vienna University of Technology*, Vienna, Austria, November 25, 2013.

2012

"Review of sparse methods in regression and classification with application to chemometrics," (P. Filzmoser, M. Gschwandtner, and V. Todorov), **Invited Presentation**, *Seminar at the National Institute of Chemistry*, Ljubljana, Slovenia, February 1, 2012.

"Identification of local multivariate outliers," (P. Filzmoser, A. Ruiz-Gazen, and C. Thomas-Agnan), **Invited Presentation**, *Workshop on Statistical Methods for Dependent Data*, Witten, Germany, February 29, 2012.

"Robust sparse principal component analysis," (P. Filzmoser, C. Croux, and H. Fritz), **Invited Presentation**, *Austrian Statistical Society*, Vienna, Austria, June 4, 2012.

"Compositional data analysis: challenges for environmental sciences," (P. Filzmoser and K. Hron), **Invited Presentation**, *Seminar presentation, University of Venice*, Venice, Italy, June 13, 2012.

"Sparse statistical methods: theory, applications, software," (P. Filzmoser, M. Gschwandtner, V. Todorov), **Invited Presentation**, *ECO Summer School*, Verona, Italy, June 14, 2012.

"Robust ultrahigh-dimensional variable selection through trimming," (P. Filzmoser, N. Neykov, P. Neytchev), **Invited Presentation**, *International Conference on Robust Statistics*, Burlington, VT, USA, August 7, 2012.

"Robust sparse PCA in R," (P. Filzmoser, C. Croux, H. Fritz), **Invited Presentation**, *International Conference on Computational Statistics*, Limassol, Cyprus, August 28, 2012.

"Compositional data analysis: Consequences for chemometrics," **Invited lecture**, *2nd African-European Conference on Chemometrics*, Stellenbosch, South Africa, November 21, 2012.

"Introduction to concepts of robust statistics," **Invited lecture**, *Seminar at the Palacký University*, Olomouc, Czech Republic, November 26, 2012.

"Regression and classification methods with application to high-dimensional data," **Invited lecture**, *Seminar at the Palacký University*, Olomouc, Czech Republic, December 17, 2012.

2011

"Discriminant analysis for compositional data and robust parameter estimation," (P. Filzmoser, K. Hron, and M. Templ), *ODAM 2011*, Olomouc, Czech Republic, January 27, 2011.

"Robuste multivariate Methoden für die Analyse von Kompositionsdaten," **Invited Presentation**, *Workshop TU Dresden – TU Wien*, Dresden, Germany, March 17, 2011.

"Robust compositional data analysis," (<u>P. Filzmoser</u>, K. Hron, and M. Templ), **Invited keynote lecture**, *CoDaWork–International Workshop on Compositional Data Analysis*, Sant Feliu de Guixols, Spain, May 13, 2011.

"Robust sparse principal component analysis based on projection-pursuit", (<u>P. Filzmoser</u>, C. Croux, and H. Fritz), **Invited Presentation**, *International Conference on Robust Statistics*, Valladolid, Spain, June 28, 2011.

"Robust statistics: Concepts, methods, applications, and computation," **Invited Presentation**, *SEAMS-GMU 2011 International Conference on Mathematics and Its Applications*, Yogyakarta, Indonesia, July 12-15, 2011.

"Multivariate statistics using R," **Invited Presentation**, *Workshop for students and lecturers of the University of Salatiga*, Salatiga, Indonesia, July 11-12, 2011.

"Robust sparse principal component analysis," *Österreichische Statistiktage der ÖSG*, Graz, Austria, Sep. 8, 2011.

"Sparse multivariate methods for high-dimensional data," **Invited Presentation**, *7th International Symposium on Computer Applications and Chemometrics in Analytical Chemistry*, Sümeg, Hungary, September 19, 2011.

"Regression and classification methods for high-dimensional data with application to chemometrics," **Invited Presentation**, *Conferencias Statistical Robustness, Universidad Oviedo*, Oviedo, Spain, Oct. 17, 2011.

"Analyzing high-dimensional data, with application to chemometrics," **Invited Presentation**, *Workshop for students at the University of Valladolid*, Valladolid, Spain, Oct. 20, 2011.

"Sparse regression and classification methods for high-dimensional data," **Invited Presentation**, *Seminar talk at the University of Valladolid*, Valladolid, Spain, Oct. 20, 2011.

"Finding relevant descriptors," **Invited Presentation**, *Workshop "Molecular Descriptors": Introduction – Theory – Applications*, Vienna, Austria, Dec. 5, 2011.

2010

"Robust multivariate methods for compositional data," **Invited Presentation**, *DAGStat 2010: Deutsche Arbeitsgemeinschaft Statistik*, Dortmund (Germany), March 24, 2010.

"Data analysis with robust statistical methods," (<u>P. Filzmoser</u> and M. Templ), **Invited Keynote Presentation**, *EDAVIS Workshop*, Vienna (Austria), May 27, 2010.

"The "chemometrics" package in R – Application in multivariate calibration and classification," **Invited Presentation**, *Chemometrics Workshop*, Vienna (Austria), June 28, 2010.

"Robust multivariate methods for compositional data," (<u>P. Filzmoser</u> and K. Hron), **Invited Presentation**, *Compstat 2010*, Paris (France), August 23, 2010.

"Multivariate outlier detection with compositional data," (<u>P. Filzmoser</u> and K. Hron), **Invited Presentation**, *CDAM 2010*, Minsk (Belarus), September 8, 2010.

"Soft methods in robust statistics," **Invited Keynote Presentation**, *SMPS 2010 (5th International Conference on Soft Methods in Probability and Statistics)*, Oviedo (Spain), September 30, 2010.

"Robust multivariate methods for high-dimensional data," **Invited Keynote Presentation**, *Chemometrics in Analytical Chemistry (CAC 2010)*, Antwerp (Belgium), October 20, 2010.

2009

"Exploratory Data Analysis and Visualization with R," **Invited Presentation**, *Workshop: R in Teaching and Empirical Research*, Vienna (Austria), January 16, 2009.

"ErfolgsVision: Statistische Methodik," **Invited Presentation**, *Workshop: Erfolgsfaktoren für Gemeinden*, Bad Zell, Austria, February 26, 2009.

"Robust Exploratory Factor Analysis as a Reliable Statistical Tool in IS Research," *KIMEP International Research Conference*, Almaty, Kazakhstan, April 24, 2009.

"Robust Statistics: Concepts, Methods, Applications, and Software," **Invited Presentation**, *COST Spring School*, Mieres, Spain, May 19, 2009.

"Robust Factor Analysis," **Invited Presentation**, *ICORS 2009*, Parma, Italy, June 16, 2009.

"Statistical Practices for Environmental Monitoring," **Invited Presentation**, *The 57th Session of the International Statistical Institute*, Durban, South Africa, August 18, 2009.

"Applied Environmental Statistics with Focus on Exploratory Data Analysis," **Invited Lecture**, IASC-ERS Summer School on Computational Aspects in Environmental Statistics, Pamporovo, Bulgaria, September 7, 2009.

"Classification methods applied to chemical data using the R library 'chemometrics'," *5th International Symposium on Computer Applications and Chemometrics in Analytical Chemistry*, (P. Filzmoser, H. Gieber, B. Liebmann, K. Varmuza), Siofok, Hungary, September 29, 2009.

"The Estimation of Missing Data in Presence of Outliers: Computational Aspects," (P. Filzmoser, H. Fritz, K. Hron, M. Templ), **Invited Presentation**, *Second Workshop of the ERCIM Working Group on Computing & Statistics*, Limassol, Cyprus, October 29, 2009.

"Statistische Analyse von Kompositionsdaten," **Invited Lecture**, Institut für Statistik, Technische Universität Graz, Austria, November 20, 2009.

2008

"Outlier Identification and Robust PCA for Compositional Data," **Invited Presentation**, *Seminar of the Statistics Department, Belarusian State University*, Minsk (Belarus), March 2008.

"Tools for local multivariate outlier detection," (P. Filzmoser, A. Ruiz-Gazen, C. Thomas-Agnan, C. Reimann), **Invited Presentation**, *1st Workshop of the ERCIM Working Group on Computing and Statistics (ERCIM '08)*, Neuchatel (Switzerland), June 2008.

"Robust fitting of mixtures: The approach based on the Trimmed Likelihood Estimator," *Conference of the German Classification Society (GfKl)*, Hamburg (Germany), July 2008.

"Defining background: Which statistical method? Outliers versus extreme values," **Invited Presentation**, *Eurosoil 2008*, Vienna (Austria), August 2008.

"Robust statistics: a clever approach for using the useful data information," *4th International Symposium on Computer Applications and Chemometrics in Analytical Chemistry*, Balatonalmadi (Hungary), September 2008.

"Robust Statistical Methods for Compositional Data," (P. Filzmoser and K. Hron), **Invited Presentation**, *ICORS 2008*, Antalya (Turkey), September 2008.

"Robuste Statistik mit Kompositionsdaten," **Invited Presentation**, *Seminar of the Department of Applied Statistics, Univ. für Bodenkultur*, Vienna (Austria), October 2008.

2007

"Robustness for Large Data Sets: New Challenges in High Dimension," **Invited Presentation**, *Seminar of the Department of Statistics, Univ. Toulouse I*, Toulouse (France), January 2007.

"Robust PCA for Flat Data," **Invited Presentation**, *International Workshop on Computational and Financial Econometrics*, Geneva (Switzerland), April 2007.

"Robuste Schätzung am Beispiel von Hauptkomponentenanalyse," **Invited Presentation**, *Seminar of the Department of Mathematical Stochastics*, Technical University of Dresden, Dresden (Germany), June 2007.

"Data Quality Issues for Statistical Methods," **Invited Presentation**, *11th Meeting of CEN/TG 230/WG 2*, Vienna (Austria), June 2007.

"Robust Principal Components," **Invited Presentation**, *Jubilee International Conference 60 years Institute of Mathematics and Informatics, Bulgarian Academy of Sciences*, Sofia (Bulgaria), Juli 2007.

"Exploring High-dimensional Data with Robust Principal Components," *8th International Conference on Computer Data Analysis and Modeling: Complex Stochastic Data and Systems*, Minsk (Belarus), September 2007.

"Package mvoutlier for Multivariate Outlier Detection," **Invited Presentation**, *International Workshop on Robust Statistics and R*, Banff (Canada), October 2007.

"Robustness for Compositional Data," **Invited Presentation**, *Seminar für Statistik*, Dortmund (Germany), November 2007.

2006

"Projection Pursuit Algorithms for Robust Multivariate Methods," **Invited Presentation**, *Robust Classification and Discrimination with High Dimensional Data*, Florence (Italy), January 2006.

"Outliers or Extremes?" **Invited Presentation**, *Seminar of Dept. of Applied Economics*, K.U. Leuven, Leuven (Belgium), February 2006.

"Extremwerte oder Ausreißer?" **Invited Presentation**, *Seminar of Department of Applied Statistics*, University of Linz, Linz (Austria), March 2006.

"Outlier Detection with Application to Geochemistry," *The R User Conference 2006*, Vienna (Austria), June 2006.

"Outlier Identification in High Dimensions," **Invited Presentation**, *International Conference on Robust Statistics (ICORS 2006)*, Lisbon, Portugal, July 2006.

"Multiple Group Linear Discriminant Analysis: Robustness and Error Rate," **Invited Presentation**, *17th Compstat Conference of the International Association for Statistical Computing*, Rome, Italy, August 2006.

"Analyzing Multivariate Data: Methods and their Pitfalls," **Invited Presentation**, *Arsenal Research*, Vienna, Austria, September 2006.

"What can Robust Statistics Offer for Practice?," **Invited Presentation**, *Geological Survey of Norway (NGU)*, Trondheim, Norway, October 2006.

"Outlier Detection in Very High Dimension," **Invited Presentation**, *University of Liege*, Liege, Belgium, November 2006.

2005

"Statistical Analysis of Data from the MIDCC Project," **Invited Presentation**, *Workshop MIDCC*, Mosonmagyarovar (Hungary), February 2005.

"Robust Multivariate Methods: The Projection Pursuit Approach," **Invited Presentation**, *29th Annual Conference of the German Classification Society (GfKl)*, Magdeburg (Germany), March 2005.

"The Projection Pursuit Approach for Robust Multivariate Analysis," **Invited Presentation**, *ISDS Kolloquium, University of Vienna*, Vienna (Austria), May 2005.

"Partial Robust M-Regression," **Invited Presentation**, *International Conference on Robust Statistics (ICORS 2005)*, Jyväskylä, Finland, June 2005.

"Partial Robust Regression versus Robust Partial Least Squares," *Perspectives in Modern Statistical Inference III*, Mikulov, Czech Republic, July 2005.

"Multivariate und robuste Statistik in der Praxis," **Invited Presentation**, *Forum Junge Statistik, Austrian Statistical Society*, Vienna, Austria, September 2005.

"Analyzing Data with Robust Statistical Methods," **Invited Presentation**, *VRVis Center*, Vienna (Austria), October 2005.

"The Package *pcaPP*: PCA by Projection Pursuit," **Invited Presentation**, *International Workshop on Robust Statistics and R*, Treviso (Italy), October 2005.

"Multivariate Outlier Detection with Application to Geochemistry," **Invited Presentation**, *Seminar of the Department of Statistics, Univ. Toulouse I*, Toulouse (France), November 2005.

"Robuste Statistik zur Erkennung multivariater Ausreißer," **Invited Presentation**, *Wissenswertes aus der Mathematik, TU Wien*, Wien (Austria), November 2005.

2004

"Statistical Analysis of Data from the MIDCC Project," **Invited Presentation**, *Workshop MIDCC*, Mosonmagyarovar (Hungary), February 2004.

"Statistical Methods in Developing Quality Assessment Criteria," **Invited Presentation**, *Workshop "What's fishy about the Water Framework Directive?"*, Stockholm (Sweden), March 2004.

"Konzepte der robusten Statistik mit Anwendungen," **Invited Presentation**, *VRVis Center*, Vienna (Austria), May 2004.

"Partial Least Squares Regression," **Invited Presentation**, *Workshop "Robust Analysis of Large Data Sets"*, Banff (Canada), June 2004.

"An Adaptive Method for Multivariate Outlier Detection," **Invited Presentation**, *International Conference on Robust Statistics (ICORS 2004)*, Beijing (China), July 2004.

"Mixture of GLMs and the Trimmed Likelihood Methodology," (presented by N. Neykov), *Conference on Computational Statistics (COMPSTAT 2004)*, Prague (Czech Republic), August 2004.

"A Multivariate Outlier Detection Method," **Invited Presentation**, *Seventh International Conference on Computer Data Analysis and Modeling (Robustness and Computer Intensive Methods)*, Minsk (Belarus), September 2004.

2003

"Robust factor analysis and extended models," **Invited Presentation**, Masaryk University Brno (Czech Republic), March 2003.

"Robuste Faktorenanalyse und erweiterte Modelle," **Invited Presentation**, Inst. f. Ökonometrie, TU-Wien, Mai 2003.

"Univariate and Multivariate Outlier Detection with Application to Geochemical Data," *Workshop on Robust Modeling of Environmental Data (RMED'03)*, Vorau (Austria), July 2003.

"Measures of Association based on Projection Pursuit," **Invited Presentation**, *International Conference on Robust Statistics (ICORS 2003)*, Antwerp (Belgium), July 2003.

"Robust Statistics: The Solution to the Heterogeneity Problem?," **Keynote Lecture**, *Goldschmidt 2003*, Kurashiki (Japan), September 2003.

"Multivariate Outlier Detection and Visualization," *StatGIS 2003: Interfacing Geostatistics, GIS and Spatial Databases*, Pörtschach (Austria), September 2003.

"A Statistical Method for Finding Indicators of Water Quality," *Symposium on "How to assess and monitor ecological quality in freshwaters"*, Helsinki (Finland), October 2003.

"Maße für Assoziation basierend auf Projection Pursuit," *Österreichische Statistiktage*, Wien (Austria), October 2003.

2002

"Robust factor analysis," **Invited Presentation**, *International Conference on Robust Statistics (ICORS 2002)*, Vancouver (Canada), May 2002.

"Dimension reduction of the explanatory variables in (robust) multiple linear regression," **Invited Presentation**, *XXII International Seminar on Stability Problems for Stochastic Models and Seminar on Statistical Data Analysis (SDA 2002)*, Varna (Bulgaria), May 2002.

"Robust fitting of additive and multiplicative models," **Invited Presentation**, Université Libre de Bruxelles (Belgium), July 2002.

"A projection algorithm for regression with collinearity," *8th Conference of the Federation of Classification Societies (IFCS 2002)*, Cracow (Poland), July 2002.

"Robust estimation of the parameters in the FANOVA model," **Invited Presentation**, Instituto Superior Tecnico Lisbon (Portugal), November 2002.

2001

"Robust canonical correlation analysis," *Contemporary Data Analysis, Theory and Methods*, Buenos Aires (Argentina), March 2001.

"Applications of robust factor analysis," **Invited Presentation**, *Robust Statistics Afternoon, Université Libre de Bruxelles*, Brussels (Belgium), June 2001.

"Robust principal component regression," **Invited Presentation**, *Sixth International Conference on Computer Data Analysis and Modeling (Robustness and Computer Intensive Methods)*, Minsk (Belarus), September 2001.

"Prediction of censored data by robust principal component regression," **Invited Presentation**, Charles University Prague (Czech Republic), October 2001.

2000

"Robust multivariate methods in geostatistics," *24th Annual Meeting of the Classification Society (GfKl)*, Passau (Germany), March 2000.

"Factor analysis in a robust way," *22nd Biennal Conference of the Society for Multivariate Analysis in the Behavioural Sciences*, London (Great Britain), July 2000.

"Outlier resistant estimators for canonical correlation analysis," *14th Compstat Conference of the International Association for Statistical Computing*, Utrecht (The Netherlands), August 2000.

"Canonical correlation analysis in a robust way," *International Data Analysis Conference (IDA 2000)*, Innsbruck (Austria), September 2000.

1999

"Robust factor analysis based on criss-cross regressions," *The 2nd SFB 475 Conference on 'Reduction of Complexity in Multivariate Data Structures'*, Dortmund (Germany), March 1999.

"Robust factor analysis," *Annual Conference of the Austrian Statistical Society*, Vienna (Austria), April 1999.

"Interactive clustering of functional MR images," *5th International Conference on Functional Mapping of the Human Brain*, Düsseldorf (Germany), June 1999.

"Robust estimation in the factor analysis model," *14th International Workshop on Statistical Modelling*, Graz (Austria), July 1999.

"Robust parameter estimation in factor analysis," *Conference '20 Years Cooperation TU Dresden – TU Wien*, Ottenstein (Austria), September 1999.

"Robust multivariate methods applied to geostatistical data," *XXème Rencontre Franco-Belge de Statisticiens*, Brussels (Belgium), November 1999.

"The FAIR estimator," **Invited Presentation**, Universitaire Instelling Antwerpen (Belgium), December 1999.

"Modern robust statistical methods and applications," **Invited Presentation**, Technical University of Dresden (Germany), December 1999.

1998

"Robust estimation of the parameters in the bilinear model," *Annual Conference of the Austrian Statistical Society*, Linz (Austria), April 1998.

"A hierarchical clustering method for analyzing fMR images," **Invited Presentation**, University of Vienna (Austria), May 1998.

"A robust biplot representation of two-way tables," *VI Conference of IFCS on Data Science, Classification and Related Methods*, Rome (Italy), July 1998.

"A split and merge algorithm for analyzing functional MR images," *15th Annual Meeting of the European Society for Magnetic Resonance in Medicine and Biology (ESMRMB)*, Geneva (Switzerland), September, 1998.

"The usage of robust multivariate methods in combination with geostatistical tools," *Annual Conference of the International Association for Mathematical Geology*, Ischia (Italy), October 1998.

1997

"Generalized principal planes," *International Symposium on Contemporary Multivariate Analysis and Its Applications*, Hong Kong (Great Britain), May 1997.

"Robust principal component and factor analysis in the geostatistical treatment of environmental data," *The Eighth International Conference on Quantitative Methods for the Environmental Sciences*, Innsbruck (Austria), August 1997.

"Generalized principal planes," *4th International Meeting of Multidimensional Data Analysis*, Bilbao (Spain), September 1997.

"Some multivariate statistical techniques with emphasis on extracting informative planes," **Invited Presentation**, Universitaire Instelling Antwerpen (Belgium), September 1997.

"A robust biplot," **Invited Presentation**, Université Libre de Bruxelles (Belgium), October 1997.

"Robust estimation of the parameters in a model with additive and multiplicative terms (bilinear model)," **Invited Presentation**, Universitaire Instelling Antwerpen (Belgium), October 1997.

1996

"Investigations of the language in Germany and Austria with statistical methods," *20th Annual Meeting of the Classification Society GfKl*, Freiburg (Germany), March 1996.

"Principal planes," *12th Symposium on Computational Statistics (COMPSTAT 1996)*, Barcelona (Spain), August 1996.

SCIENTIFIC PRESENTATIONS (co-authored)

2016

"Meteorite classification by TOF-SIMS-chemometrics," (<u>K. Varmuza</u>, F. Brandstätter, C. Engrand, L. Ferriére, P. Filzmoser, M. Hilchenbach, C. Koeberl, and K. Varmuza), *27th Mass Spec Forum*, Vienna, Austria, February 24, 2016.

"An R package for robust orthogonal regression for compositional data," (<u>V. Todorov</u>, K. Hruzová, K. Hron, and P. Filzmoser), *RBRAS 2016*, Salvador, Brasil, May 24, 2016.

"A pairwise log-ratio method for the identification of biomarkers," (<u>J. Walach</u>, P. Filzmoser, K. Hron, and B. Walczak), *Chemometrics in Analytical Chemoistry (CAC 2016)*, Barcelona, Spain, June 8, 2016.

"Robust and sparse multiclass classification by the optimal scoring approach," (<u>I. Hoffmann</u>, P. Filzmoser, and C. Croux), *International Conference on Robust Statistics*, Geneva, Switzerland, July 4, 2016.

"Robust orthogonal regression for compositional data in R," (<u>V. Todorov</u>, K. Hruzova, K. Hron, and P. Filzmoser), *International Conference on Robust Statistics*, Geneva, Switzerland, July 7, 2016.

"Robust multivariate analysis of interval data," (<u>P. Brito</u>, P. Duarte Silva, and P. Filzmoser), *SINAPE - Simpósio Nacional de Probabilidade e Estatística*, Porto Alegre, Brasil, July 26, 2016.

"How sick is Austria? – A decision support framework for different evaluations of the burden of disease within the Austrian population based on different data sources," (<u>B. Glock</u>, F. Endel, G. Endel, N. Popper, K. Sandholzer, C. Rinner, G. Duftschmid, J. Holl, M. Wagner-Pinter, C. Mert, and P. Filzmoser), *International Population Linkage Conference*, Swansea, UK, August 24, 2016.

"Evaluation of robust PCA for supervised audio outlier detection," (<u>S. Brodinova</u>, T. Ortner, P. Filzmoser, M. Zaharieva, and C. Breiteneder), *Conference on Computational Statistics (COMPSTAT 2016)*, Oviedo, Spain, August 24, 2016.

"Univariate analysis of compositional data using weighted balances," (<u>K. Hron</u>, P. Filzmoser, and A. Gardlo), *Conference on Computational Statistics (COMPSTAT 2016)*, Oviedo, Spain, August 26, 2016.

"Group detection in the context of imbalanced data," (<u>S. Brodinova</u>, M. Zaharieva, P. Filzmoser, T. Ortner, and C. Breiteneder), *CDAM 2016 – Computer Data Analysis and Modeling*, Minsk, Belarus, Sep. 7, 2016.

"Robust and sparse multiclass classification by the optimal scoring approach," (<u>I. Hoffmann</u>, P. Filzmoser, and C. Croux), *CDAM 2016 – Computer Data Analysis and Modeling*, Minsk, Belarus, Sep. 7, 2016.

"Forward projection for high-dimensional data," (<u>T. Ortner</u>, P. Filzmoser, S. Brodinova, M. Zaharieva, and C. Breiteneder), *CDAM 2016 – Computer Data Analysis and Modeling*, Minsk, Belarus, Sep. 7, 2016.

"A pairwise logratio method for the identification of biomarkers," (<u>J. Walach</u>, P. Filzmoser, K. Hron, and B. Walczak), *CDAM 2016 – Computer Data Analysis and Modeling*, Minsk, Belarus, Sep. 7, 2016.

"Robust estimation approach for hazardous concentration levels using species sensitivity distribution," (<u>G. Monti</u>, P. Filzmoser, and R.C. Deutsch), *CDAM 2016 – Computer Data Analysis and Modeling*, Minsk, Belarus, Sep. 8, 2016.

"Comet and meteorite particle surface characterization by multivarite data analyses using TOF-SIMS data. Inorganics," (<u>K. Varmuza</u>, I. Hoffmann, P. Filzmoser, M. Hilchenbach, O. Stenzel, F. Brandstätter, L. Ferriére, C. Köberl, C. Engrand, J. Silén, et. al.), *COSIMA Meeting*, Kalamaki (Crete), Greece, Oct. 23-28, 2016.

"Exploring outliers in compositional data with structural zeros," (<u>K. Hron</u>, M. Templ, and P. Filzmoser), *CMStatistics (ERCIM) 2016*, Sevilla, Spain, December 10, 2016.

"Robust and sparse classification by the optimal scoring approach," (I. Hoffmann, P. Filzmoser, and C. Croux), *CMStatistics (ERCIM) 2016*, Sevilla, Spain, December 11, 2016.

"Guided projections for analysising the structure of high dimensional data," (T. Ortner, C. Breiteneder, S. Brodinova, P. Filzmoser, and M. Zaharieva), *CMStatistics (ERCIM) 2016*, Sevilla, Spain, December 11, 2016.

"A user approach to robust multivariate analysis in R," (V. Todorov and P. Filzmoser), *CMStatistics (ERCIM) 2016*, Sevilla, Spain, December 11, 2016.

2015

"Robust and sparse PLS for binary classification," (I. Hoffmann, P. Filzmoser, and S. Serneels), **Invited lecture**, *International Conference on Robust Statistics*, Kolkata, India, January 15, 2015.

"Correlation analysis for compositional data in coordinates," (K. Hron, P. Kynclova, and P. Filzmoser), *Eighth Internation Workshop on Simulation*, Vienna, Austria, September 22, 2015.

"Incorporating external non-compositional variables into a biplot of compositional data," (P. Kynclova, P. Filzmoser, and K. Hron), *Eighth Internation Workshop on Simulation*, Vienna, Austria, September 22, 2015.

"Error propagation of compositional data transformations," (M.C. Mert, P. Filzmoser, and K. Hron), *Eighth Internation Workshop on Simulation*, Vienna, Austria, September 22, 2015.

"Statistical analysis and processing of geochemical data," (C. Reimann and P. Filzmoser), **Keynote lecture**, **Workshop of the Geochemical Survey of Finland**, Espoo, Finland, October 2, 2015.

"Robust statistical methods for outlier detection with application to household expenditure data," (J. Gussenbauer, P. Filzmoser, M. Templ, and O. Dupriez), *Österreichische Statistiktage*, Vienna, Austria, October 21, 2015.

"Outlier detection in interval data," (A.P. Duarte Silva, P. Filzmoser, and P. Brito), *Symbolic Data Analysis Workshop*, Orleans, France, November 17, 2015.

"Distributional modeling using the logratio approach," (K. Hron, P. Filzmoser, and A. Menafoglio), *Symbolic Data Analysis Workshop*, Orleans, France, November 18, 2015.

"Interpretation of outliers in compositional data using the R-package mvoutlier," (K. Hron and P. Filzmoser), *CMStatistics (ERCIM) 2015*, London, UK, December 12, 2015.

"Robust statistical methods for outlier detection with application to household expenditure data," (M. Templ, J. Gussenbauer, P. Filzmoser, and O. Dupriez), *CMStatistics (ERCIM) 2015*, London, UK, December 13, 2015.

2014

"Exploratory data analysis for interval compositional data," (P. Brito, P. Filzmoser, and K. Hron), *4th Workshop in Symbolic Data Analysis (SDA 2014)*, Taipei, China, June 14, 2014.

"Characterisation of meteoritic samples with the Rosetta Cosima TOF-SIMS laboratory reference model – a covariance approach," (O.J. Stenzel, K. Varmuza, C. Engrand, L. Ferriére, F. Brandstätter, C. Koeberl, P. Filzmoser, and M. Hilchenbach), *ACM (Asteroids, Comets, Meteors) Conference*, Helsinki, Finland, July 1, 2014.

"The problem of missing values and rounded zeros in compositional data," (M. Templ, K. Hron, and P. Filzmoser), *Joint Statistical Meeting (JSM 2014)*, Boston, USA, August 3, 2014.

"Compositional regression: an overview," (R. Tolosana-Delgado, K.G. van den Boogaart, P. Filzmoser, K. Hron and M. Templ), *16th Annual Conference of the International Association for Mathematical Geosciences (IAMG)*, New Delhi, India, October 19, 2014.

"Statistical analysis of interval compositional data," (P. Brito, P. Filzmoser, and K. Hron), *7th International Conference of the ERCIM WG on Computational and Methodological Statistics (ERCIM 2014)*, Pisa, Italy, Dec. 8, 2014.

"Simplicial principal component analysis for density functions in Bayes spaces ," (K. Hron, A. Menafoglio, M. Templ, K. Hruzova, and P. Filzmoser), *7th International Conference of the ERCIM WG on Computational and Methodological Statistics (ERCIM 2014)*, Pisa, Italy, Dec. 8, 2014.

"PLS-DA for metabolomical (compositional) data using the logratio approach," (A. Kalivodova, K. Hron, and P. Filzmoser), *7th International Conference of the ERCIM WG on Computational and Methodological Statistics (ERCIM 2014)*, Pisa, Italy, Dec. 8, 2014.

"Application of T-spaces in modeling compositional time series ," (P. Kynclova, P. Filzmoser, and K. Hron), *7th International Conference of the ERCIM WG on Computational and Methodological Statistics (ERCIM 2014)*, Pisa, Italy, Dec. 8, 2014.

"Error propagation of compositional data transformations," (C. Mert, P. Filzmoser, and K. Hron), *7th International Conference of the ERCIM WG on Computational and Methodological Statistics (ERCIM 2014)*, Pisa, Italy, Dec. 8, 2014.

"Blind source separation for spatial compositional data ," (K. Nordhausen, H. Oja, P. Filzmoser, and C. Reimann), *7th International Conference of the ERCIM WG on Computational and Methodological Statistics (ERCIM 2014)*, Pisa, Italy, Dec. 8, 2014.

2013

"Correlation analysis for compositional data using classical and robust methods," (K. Hron, P. Filzmoser, and E. Fišerová), *ODAM 2013 – Olomoucian Days of Applied Mathematics*, Olomouc, Czech Republic, June 12, 2013.

"Replacement of missing values and rounded zeros in high-dimensional compositional data with application to metabolomics," *ODAM 2013 – Olomoucian Days of Applied Mathematics*, Olomouc, Czech Republic, June 12, 2013.

"Principal balances with sparse PCA," (C. Mert, P. Filzmoser, and K. Hron), *ODAM 2013 – Olomoucian Days of Applied Mathematics*, Olomouc, Czech Republic, June 12, 2013.

"Vector autoregression for compositional time series," (P. Kynčlová, P. Filzmoser, and K. Hron), *ODAM 2013 – Olomoucian Days of Applied Mathematics*, Olomouc, Czech Republic, June 13, 2013.

"Fuzzy rating or fuzzy linguistic?," (S. de la Rosa de Sáa, P. Filzmoser, M.A. Gil, and M.A. Lubiano), *ODAM 2013 – Olomoucian Days of Applied Mathematics*, Olomouc, Czech Republic, June 14, 2013.

"Exploring compositional data with the robust compositional biplot," (K. Hron and P. Filzmoser), *SIS 2013 - Advances in Latent Variables - Methods, Models and Applications*, Brescia, Italy, June 19, 2013.

"Covariance-based outlier detection for compositional data with structural zeros: application to Italian Survey of Household Income and Wealth data," (G.S. Monti, K. Hron, P. Filzmoser, and M. Templ, *SIS 2013 - Advances in Latent Variables - Methods, Models and Applications*, Brescia, Italy, June 19, 2013.

"Multivariate robust partial M-regression," (V. Todorov and P. Filzmoser) *ICORS 2013 – International Conference on Robust Statistics*, St. Petersburg, Russia, July 8, 2013.

"Variable selection and its strict evaluation," (K. Varmuza and P. Filzmoser), *Conferentia Chemometrica, CC 2013*, Sopron, Hungary, Sep. 9, 2013.

"Empirical modeling of mass spectral features by molecular descriptors," (K. Varmuza, M. Dehmer, and P. Filzmoser), *Conferentia Chemometrica, CC 2013*, Sopron, Hungary, Sep. 10, 2013.

"Sparse principal balances for high-dimensional compositional data," (<u>C. Mert</u>, P. Filzmoser, and K. Hron), *CDAM 2013 – Computer Data Analysis and Modeling*, Minsk, Belarus, Sep. 11, 2013.

"Visual analytics for model selection in time series analysis," (<u>M. Bögl</u>, W. Aigner, P. Filzmoser, T. Lammarsch, S. Miksch, and A. Rind), *IEEE VIS 2013*, Atlanta, GA, Oct. 18. 2013.

"How to model compositional time series from official statistics," (<u>P. Kynclova</u>, P. Filzmoser, and K. Hron), *Österreichische Statistiktage*, Wien, Austria, Oct. 23, 2013.

"Highly parallelized algorithms for exploratory analysis of large functional MRI datasets in R ," (<u>R. Boubela</u>, K. Kalcher, W. Huf, P. Filzmoser, and E. Moser), *ERCIM Conference*, London, Great Britain, Dec. 14, 2013.

"Robust maximum association estimators and an extension for sparsity," (<u>A. Alfons</u>, C. Croux, and P. Filzmoser), *ERCIM Conference*, London, Great Britain, Dec. 15, 2013.

"Classical and robust principal component analysis for density functions using Bayes spaces," (<u>K. Hruzova</u>, K. Hron, M. Templ, P. Filzmoser, and G. Monti), *ERCIM Conference*, London, Great Britain, Dec. 15, 2013.

"Analyzing the effect of the scientific background in "Likertizing" fuzzy rating responses to a questionnaire," (<u>S. de la Rosa de Saa</u>, P. Filzmoser, and M. Lubiano), *ERCIM Conference*, London, Great Britain, Dec. 16, 2013.

"Compositional data analysis of the resource efficiency in manufacturing," (<u>V. Todorov</u>, K. Hruzova, K. Hron, and P. Filzmoser), *ERCIM Conference*, London, Great Britain, Dec. 16, 2013.

"Sparse principal balances for high-dimensional compositional data," (<u>C. Mert</u>, P. Filzmoser, and K. Hron), *ERCIM Conference*, London, Great Britain, Dec. 16, 2013.

2012

"Robust estimation in high dimensional GLMs through trimming," (<u>N. Neykov</u>, P. Filzmoser, and P. Neytchev), **Invited Presentation**, *Workshop on Statistical Methods for Dependent Data*, Witten, Germany, February 27, 2012.

"Burden of disease of Diabetes Mellitus - consequences for capacity planning," (<u>G. Endel</u>, N. Pfeffer, I. Wilbacher, P. Filzmoser, F. Endel, A. Eisl, W. Dorda, G. Duftschmid, W. Grossmann, E. Schober, and T. Waldhör), *9th HTAi Annual Meeting. HTA in Integrated Care for a Patient Centered System*, Bilbao, Spain, June 26, 2012.

"Variable selection by the LASSO method," (<u>B. Liebmann</u>, R. Todeschini, V. Cansonni, P. Filzmoser, and K. Varmuza), *Conference on Chemometrics in Analytical Chemistry*, Budapest, Hungary, June 28, 2012.

"Repeated double cross validation for optimization and evaluation of empirical classifiers," (K. Varmuza, <u>B. Liebmann</u>, and P. Filzmoser), *Conference on Chemometrics in Analytical Chemistry*, Budapest, Hungary, June 28, 2012.

"Robust maximum correlation based on projection pursuit," (<u>A. Alfons</u>, C. Croux, P. Filzmoser), *International Conference on Robust Statistics*, Burlington, VT, USA, August 8, 2012.

"rrcovHD: Moving rrcov to high dimensions," (<u>V. Todorov</u>, P. Filzmoser), *International Conference on Robust Statistics*, Burlington, VT, USA, August 9, 2012.

"Evaluating the performance of a Bayesian-multiplicative treatment of zeros in compositional data sets," (<u>J.A. Martin-Fernandez</u>, K. Hron, M. Templ, P. Filzmoser, J. Palarea-Albaladejo), **Invited Presentation**, *International Conference on Computational Statistics*, Limassol, Cyprus, August 28, 2012.

"A framework for parallelized statistical analysis of fMRI data in R," (R. Boubela, k. Kalcher, W. Huf, E. Moser, C. Windischberger, P. Filzmoser), *Statistische Woche*, Vienna, Austria, September 18, 2012.

"Sparse and robust partial least squares regression," (V. Todorov, P. Filzmoser), *Statistische Woche*, Vienna, Austria, September 18, 2012.

"A projection-pursuit algorithm for robust maximum correlation estimators," (A. Alfons, C. Croux, P. Filzmoser), *Statistische Woche*, Vienna, Austria, September 20, 2012.

"Outlier detection by the use of the regularized MCD estimator," (M. Gschwandtner, P. Filzmoser), *Statistische Woche*, Vienna, Austria, September 20, 2012.

"Classical and robust correlation analysis of compositional data," (K. Hron, P. Filzmoser), *Statistische Woche*, Vienna, Austria, September 20, 2012.

"Robust variable selection for linear regression models with compositional data," (F. Schroeder, A. Braumann, P. Filzmoser), *Statistische Woche*, Vienna, Austria, September 20, 2012.

"Outlier detection in high dimension using regularization," (M. Gschwandtner, P. Filzmoser), *International Conference on Soft Methods in Probability and Statistics*," Konstanz, Germany, October 4, 2012.

"Robust diagnostics of fuzzy clustering results using the compositional approach," (K. Hron, P. Filzmoser), *International Conference on Soft Methods in Probability and Statistics*," Konstanz, Germany, October 4, 2012.

"Comparing classical and robust sparse PCA," (V. Todorov, P. Filzmoser), *International Conference on Soft Methods in Probability and Statistics*, Konstanz, Germany, October 4, 2012.

"Dementia and pathways of health service utilisation in Austria: A record linkage study in a country with a fragmented provider payment system," (H. Katschnig, F. Endel, G. Endel, B. Weibold, S. Scheffel, P. Filzmoser), *22nd Alzheimer Europe Conference*, Vienna, Austria, October 4, 2012.

"Sparse and robust partial least squares regression," (V. Todorov, P. Filzmoser), *ERCIM Conference*, Oviedo, Spain, December 2, 2012.

"A unified approach to classical and robust regression for compositional data," (K. Hron, P. Filzmoser, M. Templ, G. van den Boogaart, R. Tolosana-Delgado), Oviedo, Spain, December 3, 2012.

2011

"On the interpretation of orthonormal coordinates for compositional data with applications," (K. Hron, E. Fiserova, P. Filzmoser, and M. Templ), *ODAM 2011*, Olomouc, Czech Republic, January 27, 2011.

"Estimation of social inclusion indicators with bounded influence of incomes by tail modeling," (M. Templ, A. Alfons, P. Filzmoser, and J. Holzer), *ODAM 2011*, Olomouc, Czech Republic, January 27, 2011.

"Mathematical elements in robust statistics for CoDa," (K. Hron and P. Filzmoser), **Invited Presentation**, *RSME 2011*, Avila, Spain, February 4, 2011.

"Robust estimation of social inclusion indicators based on Pareto tail modeling," (A. Alfons, M. Templ, and P. Filzmoser), *NTTS 2011*, Brussels, Belgium, February 24, 2011.

"Identifying psychiatric patients' pathways of care by record linkage after pseudonymisation: linking inpatient and outpatient data for the total population of a province of Austria," (H. Katschnig, G. Endel, F. Endel, B. Weibold, and P. Filzmoser), *10th Workshop on Costs and Assessment in Psychiatry: Mental Health Policy and Economics*, Venice, Italy, March 25-27, 2011.

"Imputation of complex data with R-package VIM: Traditional and new methods based on robust estimation," (M. Templ, A. Kowarik, and P. Filzmoser), **Invited Presentation**, *UNECE Worksession on data editing*, Ljubljana, Slovenia, May 10, 2011.

"Analysis of compositional data using robust methods. The R-package robCompositions," (M. Templ, P. Filzmoser, and K. Hron), *CoDaWork–International Workshop on Compositional Data Analysis*, Sant Feliu de Guixols, Spain, May 12, 2011.

"Classical and robust imputation of missing values for compositional data using balances," (K. Hron, M. Templ, and P. Filzmoser), *CoDaWork–International Workshop on Compositional Data Analysis*, Sant Feliu de Guixols, Spain, May 13, 2011.

"Robust variable selection with application in the social sciences," (A. Alfons and P. Filzmoser), *Dutch/Flemish Classification Society Spring Meeting*, Antwerp, Belgium, May 13, 2011.

"Identifying psychiatric patients' pathways of care by record linkage after pseudonymisation: linking inpatient and outpatient data for the total population of a province in Austria," (H. Katschnig, G. Endel, F. Endel, P. Filzmoser, and B. Weibold), *IXth ENMESH International Conference*, Ulm, Germany, June 24, 2011.

"Robust quantile regression estimator through trimming," (N. Neykov, P. Cizek, P. Filzmoser, and P. Neytchev), *International Conference on Robust Statistics*, Valladolid, Spain, June 27, 2011.

"Sparse methods for robust discrimination in high dimensions", (V. Todorov, N. Trendafilov, and P. Filzmoser), *International Conference on Robust Statistics*, Valladolid, Spain, June 27, 2011.

"A new approach for variable selection in robust PCA, applied to anomaly detection in internet traffic flows", (C. Pascoal, M.R. de Oliveira, P. Filzmoser, A. Pacheco, and R. Valadas), *International Conference on Robust Statistics*, Valladolid, Spain, June 28, 2011.

"Linear regression with compositional explanatory variables using the logratio approach", (K. Hron and P. Filzmoser), *International Conference of Probability and Statistics*, Smolenice, Slovakia, July 5, 2011.

"Robust semi-parametric estimation of economic and social indicators", (M. Templ, A. Alfons, and P. Filzmoser), *The 58th Session of the International Statistical Institute*, Dublin, Ireland, August 26, 2011.

"A robust approach to regularized discriminant analysis," (M. Gschwandtner, P. Filzmoser, C. Croux, and G. Haesbroeck), *Österreichische Statistiktage der ÖSG*, Graz, Austria, Sep. 8, 2011.

"Sparse and robust methods for discrimination in high dimensions," (V. Todorov and P. Filzmoser), *Österreichische Statistiktage der ÖSG*, Graz, Austria, Sep. 8, 2011.

"A computational and methodological framework for visualisation and imputation of missing values: the R-package VIM," (M. Templ, A. Kowarik, P. Filzmoser, and A. Alfons), *Österreichische Statistiktage der ÖSG*, Graz, Austria, Sep. 9, 2011.

"Health service record linkage in a situation of multiple social health insurance institutions: the case of Austria", (F. Endel, G. Endel, P. Filzmoser, B. Weibold, and H. Katschnig), *SHIP (Scottish Health Informatics Programme) biennal conference*, St. Andrews, Great Britain, September 10, 2011.

"Identifying psychiatric patients' pathways of care: linking service use data for psychiatric and non-psychiatric services for the total population of a province of Austria," (H. Katschnig, G. Endel, F. Endel, P. Filzmoser, and B. Weibold), *SHIP (Scottish Health Informatics Programme) biennal conference*, St. Andrews, Great Britain, September 10, 2011.

"Repeated double cross validation for classification models," (K. Varmuza, P. Filzmoser, and B. Liebmann), *7th International Symposium on Computer Applications and Chemometrics in Analytical Chemistry*, Sümeg, Hungary, September 20, 2011.

2010

"Implementation of advanced methodology for the estimation of social inclusion indicators," (A. Alfons, M. Templ, and P. Filzmoser), **Invited Presentation**, *4th AMELI Meeting*, Vienna, Austria, February 23, 2010.

"Outlier Detection for Semi-continuous Variables," (A. Meraner, M. Templ, and P. Filzmoser), **Invited Presentation**, *4th AMELI Meeting*, Vienna, Austria, February 24, 2010.

"Visualization of Indicators in R with Application to EUSILC," (S. Zechner, P. Filzmoser, and M. Templ), **Invited Presentation**, *4th AMELI Meeting*, Vienna, Austria, February 24, 2010.

"Simulation of Population Data for Complex Household Surveys," (A. Alfons, S. Kraft, M. Templ, and P. Filzmoser), *International Conference on Indicators and Survey Methodology*, Vienna, Austria, February 25, 2010.

"Iterative Imputation of Complex Survey Data Using Robust Methods," (M. Templ, A. Kowarik, P. Filzmoser, and A. Alfons), *International Conference on Indicators and Survey Methodology*, Vienna, Austria, February 25, 2010.

"Classical and Robust Simple Random Sampling for Compositional Data," (K. Hron, P. Filzmoser, and M. Templ), *International Conference on Indicators and Survey Methodology*, Vienna, Austria, February 25, 2010.

"How to Improve the Quality of Life in Central European Municipalities," (R. Wieser, H. Filzmoser, P. Filzmoser, A. Alfons, W.E. Baaske, and W. Mader), *International Conference on Indicators and Survey Methodology*, Vienna, Austria, February 26, 2010.

"IRMI: An open-source solution for imputation of complex data using robust methods," (M. Templ, A. Kowarik, and P. Filzmoser), *European Conference on Quality in Official Statistics*, Helsinki (Finland), May 5, 2010.

"Exploring microdata with missing information," (A. Alfons, M. Templ, and P. Filzmoser), *EDAVIS Workshop*, Vienna (Austria), May 27, 2010.

"Robust joint modeling of the mean and dispersion through trimming," (N. Neykov, P. Filzmoser, and P. Neytchev), *International Conference on Robust Statistics*, Prague (Czech Republic), June 28, 2010.

"Robust discrimination in high dimensions," (V. Todorov and P. Filzmoser), *International Conference on Robust Statistics*, Prague (Czech Republic), June 29, 2010.

"Robust regression for compositional data," (K. Hron and P. Filzmoser), *International Conference on Robust Statistics*, Prague (Czech Republic), June 29, 2010.

"The R package simFrame: An object-oriented approach towards simulation studies in statistics," (A. Alfons, M. Templ, and P. Filzmoser), *useR! Conference*, Gaithersburg (USA), July 21, 2010.

"robCompositions: An R-package for robust statistical analysis of compositional data," (M. Templ, K. Hron, and P. Filzmoser), *useR! Conference*, Gaithersburg (USA), July 21, 2010.

"Exploratory compositional data analysis using the R-package robCompositions," (K. Hron, M. Templ and P. Filzmoser), **Invited Presentation**, *CDAM 2010*, Minsk (Belarus), September 8, 2010.

"Contamination models in the R package simframe for statistical simulation," (A. Alfons, M. Templ and P. Filzmoser), *CDAM 2010*, Minsk (Belarus), September 10, 2010.

"Identifying psychiatric patients' pathways through the health care system by record linkage after pseudonymisation," (H. Katschnig, G. Endel, F. Endel, P. Filzmoser, and B. Weibold), *PCSI 2010*, Munich (Germany), September 17, 2010.

"Identification of diagnose-related procedure bundles in outpatient care using statistical methods," (N. Pfeffer, A. Eisl, F. Endel, G. Endel, P. Filzmoser, C. Scholler, A, Weisser), *PCSI 2010*, Munich (Germany), September 17, 2010.

"Results of the project ATC-ICD," (<u>A. Weisser</u>, F. Endel, G. Endel, and P. Filzmoser), *PCSI 2010*, Munich (Germany), September 17, 2010.

"Statistical evaluation of molecular descriptors used in Quantitative-Structure-Activity Relationships," (<u>K. Varmuza</u>, P. Filzmoser, and M. Dehmer), *First African-European Conference on Chemometrics*, Rabat (Morocco), September 21, 2010.

"A comparison of robust methods for Pareto tail modeling in the case of Laeken indicators," (<u>A. Alfons</u>, M. Templ, P. Filzmoser, and J. Holzer), **Invited Presentation**, *SMPS 2010 (5th International Conference on Soft Methods in Probability and Statistics)*, Oviedo (Spain), September 29, 2010.

"Elements of robust regression for data with absolute and relative information," (<u>K. Hron</u> and P. Filzmoser), **Invited Presentation**, *SMPS 2010 (5th International Conference on Soft Methods in Probability and Statistics)*, Oviedo (Spain), September 30, 2010.

"Pareto Tail Modelling for Social Inclusion Indicators," (<u>A. Alfons</u>, M. Templ, and P. Filzmoser), **Invited Presentation**, *5th AMELI Meeting*, Trier (Germany), October 4, 2010.

"Robust multivariate methods for high-dimensional data," **Invited Keynote Presentation**, *Chemometrics in Analytical Chemistry (CAC 2010)*, Antwerp (Belgium), October 20, 2010.

"Random projection for dimensionality reduction," (<u>K. Varmuza</u>, P. Filzmoser, M. Hilchenbach, J. Kissel, H. Krüger, and J. Silén), *Chemometrics in Analytical Chemistry (CAC 2010)*, Antwerp (Belgium), October 21, 2010.

"Robust model selection in the social sciences," (<u>A. Alfons</u> and P. Filzmoser), **Invited Presentation**, *ERCIM Conference*, London (Great Britain), December 11, 2010.

2009

"Robust Imputation of Missing Values in Compositional Data Using the R-Package robCompositions," (<u>M. Templ</u>, P. Filzmoser, K. Hron), *NNTS Conference*, Brussels, Belgium, February 19, 2009.

"ErfolgsVision: Ergebnisdarstellung," (<u>H. Filzmoser</u>, P. Filzmoser), **Invited Presentation**, *Workshop: Erfolgsfaktoren für Gemeinden*, Bad Zell, Austria, February 26, 2009.

"Missing Values in Compositional Data: Imputation and Diagnostics," (<u>M. Templ</u>, P. Filzmoser, K. Hron), **Invited Presentation**, *6th International Conference on Computational Management Science*, Geneva, Switzerland, May 2, 2009.

"Robust Methods for the Estimation of Selected Laeken Indicators," (<u>M. Templ</u>, J. Holzer, P. Filzmoser, A. Alfons), **Invited Presentation**, *3rd AMELI Meeting*, Olten, Switzerland, June 4, 2009.

"State-of-the-art and Recent Developments in Visualisation of Missing Values and Indicators," (<u>A. Alfons</u>, M. Templ, P. Filzmoser), **Invited Presentation**, *3rd AMELI Meeting*, Olten, Switzerland, June 5, 2009.

"Simulation of a Population for the European Living and Income Conditions Survey," (<u>S. Kraft</u>, P. Filzmoser, M. Templ), **Invited Presentation**, *3rd AMELI Meeting*, Olten, Switzerland, June 5, 2009.

"Repeated Double Cross Validation," (P. Filzmoser, B. Liebmann, <u>K. Varmuza</u>), *11th Scandinavian Symposium on Chemometrics (SSC11)*, Loen, Norway, June 10, 2009.

"A Statistical Approach to the Reconstruction of Pleistocene Drainage of the Po River Basin (Italy)," (<u>G. Vezzoli</u>, K. Hron, P. Filzmoser), *ICORS 2009*, Parma, Italy, June 17, 2009.

"Statistical Estimators based on Trimming," (<u>N. Neykov</u>, P. Filzmoser, P. Neytchev), *ICORS 2009*, Parma, Italy, June 18, 2009.

"A Robust Biplot for Compositional Data," (<u>K. Hron</u>, P. Filzmoser), *ICORS 2009*, Parma, Italy, June 18, 2009.

"Robustness for Compositional Data Using the R Package robCompositions," (<u>M. Templ</u>, P. Filzmoser, K. Hron), *ICORS 2009*, Parma, Italy, June 18, 2009.

"Robust Outlier Detection in Survey Data," (<u>V. Todorov</u>, M. Templ, P. Filzmoser), *ICORS 2009*, Parma, Italy, June 18, 2009.

"Exploring the Multivariate Structure of Missing Values Using the R Package VIM," (<u>M. Templ</u>, A. Alfons, P. Filzmoser), *useR! 2009*, Rennes, France, July 8, 2009.

"Integrating R into the InfoVis System Visplore," (<u>R.N. Boubela</u>, P. Filzmoser, H. Piringer), *useR! 2009*, Rennes, France, July 8, 2009.

"Classical and robust PLS regression compared by repeated double cross validation," (<u>B. Liebmann</u>, P. Filzmoser, K. Varmuza), *5th International Symposium on Computer Applications and Chemometrics in Analytical Chemistry*, Siofok, Hungary, September 28, 2009.

"Random projection and projection pursuit based PCA applied to chemical data," (<u>K. Varmuza</u>, P. Filzmoser, B. Liebmann), *5th International Symposium on Computer Applications and Chemometrics in Analytical Chemistry*, Siofok, Hungary, September 28, 2009.

"On the Influence of Imputation Methods on Laeken Indicators: Simulations and Recommendations," (<u>A. Alfons</u>, M. Templ, P. Filzmoser), *Conference of European Statisticians*, Neuchatel, Switzerland, October 5, 2009.

"Imputation of item non-responses in compositional data using robust methods," (<u>M. Templ</u>, P. Filzmoser, K. Hron), **Invited Presentation**, *Conference of European Statisticians*, Neuchatel, Switzerland, October 5, 2009.

"Outlier Detection in Survey Data Using robust Methods," (<u>V. Todorov</u>, M. Templ, P. Filzmoser), **Invited Presentation**, *Conference of European Statisticians*, Neuchatel, Switzerland, October 5, 2009.

"Visplore and R: a symbiosis of powerful visualization and statistical processing," (<u>R.N. Boubela</u>, P. Filzmoser, H. Piringer), **Invited Presentation**, *Young Statisticians Meeting*, Triest, Italy, October 17, 2009.

"Iterative Model-based Imputation of Complex Data," (<u>M. Templ</u>, A. Kowarik, P. Filzmoser), **Invited Presentation**, *Second Workshop of the ERCIM Working Group on Computing & Statistics*, Limassol, Cyprus, October 29, 2009.

2008

"Cluster Analysis: Data Praparation? Which Algorithm? How many Clusters?," (<u>M. Templ</u>, P. Filzmoser, and C. Reimann), **Invited Presentation**, *Lifestat*, Munich (Germany), March 2008.

"A Strategy for Estimating the Prediction Performance of Regression Models – Demonstrated on a QSPR Example," (<u>K. Varmuza</u>, P. Filzmoser), *MATG/CHEM/COMP 2008*, Verbania (Italy), June 2008.

"Visualization of missing values before imputation," (<u>M. Templ</u>, P. Filzmoser), *Q2008*, Rome (Italy), July 2008.

"Robust Outlier Detection in Survey Data," (<u>V. Todorov</u>, M. Templ, and P. Filzmoser), *Compstat 2008*, Porto (Portugal), August 2008.

"Repeated Double Cross Validation for Estimation of Prediction Errors," (<u>K. Varmuza</u> and P. Filzmoser), *4th International Symposium on Computer Applications and Chemometrics in Analytical Chemistry*, Balatonalmadi (Hungary), September 2008.

"A Robust Approach for Dealing with Missing Values in Compositional Data," (<u>K. Hron</u>, M. Templ, and P. Filzmoser), *ICORS 2008*, Antalya (Turkey), September 2008.

"Recent Developments in Robust Fitting of Mixtures," (<u>N. Neykov</u>, P. Filzmoser, and P. Neytchev), *ICORS 2008*, Antalya (Turkey), September 2008.

"An Application of Robust Variable Selection with Many Variables," (<u>R. Wieser</u>, P. Filzmoser, W.E. Baaske, and W. Mader), *ICORS 2008*, Antalya (Turkey), September 2008.

"An Object Oriented Framework for Robust Multivariate Analysis in R," (<u>V. Todorov</u> and P. Filzmoser), *ICORS 2008*, Antalya (Turkey), September 2008.

"Landwirtschaft als Erfolgsfaktor für Kommunen? – Ergebnisse aus Bevölkerungsbefragungen in Bürgerbeteiligungsprozessen," (<u>W.E. Baaske</u>, P. Filzmoser, W. Mader, and R. Wieser), *ÖGA-Jahrestagung 2008*, Wien (Austria), September 2008.

"Robuste Biplots für Kompositionsdaten," (<u>K. Hron</u> and P. Filzmoser), *Workshop TU Wien/TU Dresden*, Vorau (Austria), September 2008.

"Robuste multivariate Analyse in R," (<u>V. Todorov</u> and P. Filzmoser), *Workshop TU Wien/TU Dresden*, Vorau (Austria), September 2008.

"Analyse und Visualisierung von EU-SILC Daten in R," (<u>A. Alfons</u>, <u>S. Kraft</u>, M. Templ, and P. Filzmoser), *Workshop TU Wien/TU Dresden*, Vorau (Austria), September, 2008.

"Integration der Statistiksoftware R in die Visualisierungssoftware Bulk Analyzer zur interaktiven Datenanalyse," (<u>R. Boubela</u>, P. Filzmoser, and H. Piringer), *Workshop TU Wien/TU Dresden*, Vorau (Austria), September, 2008.

"Anwendung robuster Variablenselektionsverfahren zur Analyse hochdimensionaler Daten," (<u>R. Wieser</u>, P. Filzmoser, W.E. Baaske, and W. Mader), *Workshop TU Wien/TU Dresden*, Vorau (Austria), September, 2008.

"ATC → ICD: Evaluating the reliability of prognoses for ICD-10 diagnoses derived from the ATC-Code of prescription," (<u>A. Weisser</u>, G. Endel, M. Gyimesi, and P. Filzmoser), *PCSI*, Porto (Portugal), October 2008.

"Comparison of Some Linear Regression Methods - Available in R - for a QSPR Problem," (<u>K. Varmuza</u> and P. Filzmoser), *4. German Conference on Chemoinformatics*, Goslar (Germany), November 2008.

2007

"Exploratory Tools for Spatial Multivariate Outlier Detection," (<u>A. Ruiz-Gazen</u>, C. Thomas-Agnan, P. Filzmoser, C. Reimann), *6th Spatial Econometrics and Statistics Workshop*, Dijon (France), June 2007.

"A New Variable Selection Method Based on All Subsets Regression," (A. Liebminger, L. Seyfang, P. Filzmoser, <u>K. Varmuza</u>), *Scandinavian Symposium on Chemometrics*, Lappeenranta (Finland), June 2007.

"Outlier Detection for Compositional Data and Applications to Environmetrics," (<u>K. Hron</u>, P. Filzmoser), *TIES 2007*, Mikulov (Czech Republic), August 2007.

"Visualisation of Missing Values and Robust Imputation in Environmental Surveys," (<u>M. Templ</u>, P. Filzmoser), *TIES 2007*, Mikulov (Czech Republic), August 2007.

"Robust Statistic for the One-way MANOVA," (<u>V. Todorov</u>, P. Filzmoser), *TIES 2007*, Mikulov (Czech Republic), August 2007.

"Variable Selection by All Subsets Regression and by Genetic Algorithms," L. Seyfang, P. Filzmoser, <u>K. Varmuza</u>, *Conferentia Chemometrica 2007*, Budapest (Hungary), September 2007.

"Problems and Possibilities of Cluster Analysis: Application on Geochemical Data," (<u>M. Templ</u>, P. Filzmoser, C. Reimann), *ROeS Seminar 2007*, Bern (Switzerland), September 2007.

"Exploratory Tools for Spatial Multivariate Outlier Detection," (P. Filzmoser, C. Reimann, <u>A. Ruiz-Gazen</u>, C. Thomas-Agnan), **Invited Presentation**, *International Conference on Robust Statistics*, Buenos Aires (Argentina), September 2007.

"Robust Estimation of Missing Values," (<u>H. Fritz</u>, P. Filzmoser, M. Templ), **Invited Presentation**, *International Workshop on Robust Statistics and R*, Banff (Canada), October 2007.