

# Assoc.Prof. Dipl.-Ing. Dr.techn. Holger Arthaber



## Personal Details

Nationality: Austria  
Phone: +43 1 58801 35420  
Email: [holger.arthaber@tuwien.ac.at](mailto:holger.arthaber@tuwien.ac.at)  
Web: <https://www.tuwien.at/etit/e354/team/arthaber-holger>  
ORCID: 0000-0002-9218-5510  
Address: TU Wien, Institute of Electrodynamics, Microwave and Circuit Engineering  
Gusshausstrasse 25/354, 1040 Wien, Austria

## Education

2017 TU Wien, Habilitation (Venia Docendi) in “Radio Frequency Engineering”, Habilitation title: “Digitally Driven Switched Mode Power Amplifiers (Amplifier Design, Digital Modulation, and Modeling)”  
2000–2004 TU Wien, Doctoral/PhD study, completed with distinction, thesis title: “Harmonic Load Pull Methods”  
1995–2000 TU Wien, Diploma study in electrical engineering/communication engineering, focus on signal processing and radio frequency engineering, finished with distinction, thesis title: “Algorithmen zur Kombination von Diversitätssignalen in GSM” (“Algorithms for Diversity Combining in GSM”)

## Academic Career and Work Experience

2017–now TU Wien, Institute of Electrodynamics, Microwave and Circuit Engineering (EMCE); Associate Professor, Head of Microwave Engineering Group (full-time)  
2015–2019 Brno University of Technology, Czech Republic, external peer and advisor of Antennas and High-frequency Circuits Group (4h/week)  
2009–2017 TU Wien, Institute of Electrodynamics, Microwave and Circuit Engineering; Assistant Professor, Head of Microwave Engineering Group  
2000–2008 TU Wien, Institute of Electrical Measurements and Circuit Design; Assistant (Microwave Engineering)  
1999–2000 TU Wien, Institute of Communications and Radio Frequency Engineering; Research Assistant  
1998–2000 Freelancer (Embedded systems HW/SW-design for several companies)

## Achievements

2017 Austrian Standards: Living Standards Awards 2017, Category Projects  
2014 Austrian Patent Office: Inventum 2013, top ten patents of the year  
2004 TU Wien: Dr. Ernst Fehrer Preis  
2004 Arbeitskreis der Hochschullehrer für Messtechnik e.V.: Messtechnik-Preis  
2001 Wirtschaftskammer Wien: Technikpreis der Wiener Wirtschaft

## Current Teaching

- “RF Simulation Tools” (optional course, 3 ECTS, held 2018–now)
- “Privatissimum for Doctoral Students” (optional course, 3 ECTS, held 2017–now)
- “Seminar for Diploma Students” (optional course, 2 ECTS, held 2014–now)
- “RF Techniques” (mandatory course, 6 ECTS, held 2011–now)
- “Lab RF Techniques” (mandatory course, 3 ECTS, held 2004–now)
- “Advanced RF Techniques” (optional course, 6 ECTS, held 2003–now)
- “Seminar RF Techniques” (optional course, 3 ECTS, held 2003–now)
- “Bachelor Thesis with Seminar” (mandatory course, 10 ECTS, held 2012–now)
- “Orientation ETIT” (mandatory course, 1 ECTS, 2017–now)

## Past Teaching

- “Seminar for Diploma Students” (mandatory course, 3 ECTS, held 2014–2016)
- “Messtechnik” (mandatory course, 4 ECTS, held 2000–2013)
- “Messtechnik Labor” (mandatory course, 2 ECTS, held 2000–2013)
- “Messgeräte – Eine Einführung” (optional course, 1 ECTS, held 2001–2013)
- “Steuerungstechnik” (optional course, 1 ECTS, held 2000–2012)
- “Projektarbeit (Übergangsregelung B.-Arbeit)” (optional course, 2.5 ECTS, held 2012)
- “Messtechnik, Bakkalaureats-Vertiefung” (optional course, 7.5 ECTS, held 2004–2011)
- “EDV-orientierte Projektarbeit für Elektrotechnik” (optional course, held 2000–2004)
- “Programmierpraktikum” (optional course, held 2000–2004)
- “Messtechnik, Vertiefung” (optional course, held 2003)
- “Hochfrequenztechnik 1” (optional course, held 2002)
- “Elektronische Schaltungstechnik” (optional course, held 2001)
- “Einführungspraktikum Elektrotechnik” (optional course, held 2000)
- “Einf. Elektrotechnik Labor” (optional course, held 2000)

## Theses Supervision

- PhD theses: Main supervisor of 8 ongoing and 4 finished PhD theses
- Diploma theses: Supervisor of more than 30 finished diploma theses
- Bachelor theses/projects: Supervisor of more than 40 finished bachelor theses

## Research Interests

- Antenna design and measurements
- Indoor Localization
- Digitally (binary) driven RF power amplifiers
- EMC low-cost equipment
- Load-pull techniques (active/broadband loads, IF-calibration techniques)
- Localization techniques
- Material characterization
- Microwave sensing
- Microwave system design
- Mixed digital/RF circuits (incl. real-time signal processing)
- Modeling and linearization of RF power amplifiers (with focus on digitally driven amplifiers)
- Nonlinear measurement techniques (LSNA, X-parameters, pulsed measurements)
- RFID systems (channel measurement/emulation, localization algorithms)
- Software defined radios (SDRs)

## Activities in the Scientific and Academic Community

*(Not including non-regular activities)*

2022–2024	Guest editor MDPI “Sensors”, special Issue on Microwave Sensing Systems
2018–now	Editorial board member of Wiley/Hindawi “International Journal of RF and Microwave Computer-Aided Engineering”
2018	Reviewer for “Research Foundation - Flanders (FWO)”, Belgium
2017	Organizer of “5 <sup>th</sup> Workshop of Radio Frequency Working Group (ARGE HFT)”, September 28 <sup>th</sup> /29 <sup>th</sup> , 2017
2017	Guest editor IEEE “Transactions for Microwave Theory and Techniques”, INMMiC-related mini issue
2017	TPC chair, “International Workshop on Integrated Nonlinear Microwave and Millimetre-wave Circuits (INMMiC)”, Graz, Austria, April 20 <sup>th</sup> –21 <sup>st</sup> , 2017
2015–2021	Co-operation with Brno University of Technology, peer and external advisor of Antennas and High-frequency Circuits Group (INWITE project)
2013–2017	Member of “Radio Frequency Working Group of the Austrian Research Association” (ARGE HFT)
2012–now	Reviewer for “The European Conference on Antennas and Propagation (EuCAP)”
2012	Panel Member, “Academy of Finland, Wireless Data Transfer Review Panel”
2012	Contributions to RF teaching of Telecommunication Master Curriculum
2011	Chair and Organizer of “International Workshop on Integrated Nonlinear Microwave and Millimetre-wave Circuits (INMMiC)”, Vienna, Austria April 18 <sup>th</sup> –19 <sup>th</sup> , 2011
2011–now	URSI Austria, Head of Commission B (Fields and Waves)
2011–now	TPC Core and Steering Committee Member of “International Workshop on Integrated Nonlinear Microwave and Millimetre-wave Circuits (INMMiC)”
2010–now	Reviewer for “Radioengineering Journal” (Proceedings of Czech and Slovak Technical Universities)
2008–now	Reviewer for “The International EURASIP Workshop on RFID Technology”
2008–now	Reviewer for “The European Microwave Conference (EuMC)”
2007	Co-Chair and Co-Organizer of “The First International EURASIP Workshop on RFID Technology”, RFID 2007, Vienna, Austria, September 24 <sup>th</sup> –25 <sup>th</sup> , 2007

## **Skills**

- Languages:
  - German (native)
  - English (fluent, all teaching is given in English at present)
- Radio Frequency Engineering specific:
  - Microwave Office (Circuit/System Design: Expert, Field Simulation: Advanced)
  - Ansoft 3D EM High Frequency Structure Simulator (Expert)
  - Maury ATS Load-Pull Measurement System (Expert)
  - CST 3D EM Simulator (Advanced)
  - SONNET 2.5D EM Simulator (Expert)
  - COMSOL (General Knowledge)
  - NSI Nearfield Antenna Measurement Systems (Expert)
  - Keysight 89600-Series Signal Analysis (Expert)
- Additional Technical Skills:
  - Mixed Signal/RF/Digital Co-Design (Expert)
  - VHDL based FPGA Logic and Embedded Design (Advanced)
  - Embedded System Design, Hardware/Software on 8-bit 8051 and 32-bit ARM (Expert)
  - Real-Time Operating Systems (in general: Advanced, FreeRTOS: Expert)
  - Programming Languages: C (Expert), C++ (Advanced), Python (Advanced), MATLAB (Expert)
  - Experienced in CE-Qualification and CE-approved Hardware Design (Expert)
  - SolidEdge 3D CAD Design (Expert)
  - Fusion360 (Expert in both CAD and PCB design)

## **Management Education**

- „Teamentwicklung und Managementtraining“ (four day course)
- „ExpertInnen führen ExpertInnen“ (five hours course)
- „Führend Forschen – Forschend Führen“ (one day course)
- „ManagerIn als Beruf“ (two days course)
- „MitarbeiterInnenführung kompakt für WissenschaftlerInnen“ (one day course)

## Research Projects

*(Projects with a volume < €10,000 omitted)*

### Active projects

01/2018–12/2025 “CDG Location” (€ 604,686; head of external module of “Christian Doppler Laboratory for Location-aware Electronic Systems”): Studying of various technologies and physical layer interfaces for indoor localization. The project serves as the basis for one PhD thesis at TU Wien.

### Finished projects

10/2019–12/2022 “AMOR” (€ 304,235: project manager of TU Wien; research funding by European Funds for Regional Development EFRE): Development of a low-cost modeling and measurement framework for RF circuits. The project serves as the basis for one PhD and two Master theses at TU Wien.

03/2021–06/2021 “UHF Load-Pull” (€ 11.400: project manager of TU Wien, research cooperation with industrial partner): Extension of a load-pull setup to VHF/UHF frequencies for performance characterization of integrated transmitters.

04/2020–01/2021 “LDACS Update” (€ 53.087: project manager of TU Wien, subcontractor for industrial partner, research funding by EU SESAR): Evaluating noise floor reduction techniques and open-loop digital predistortion performance for LDACS transmitters.

01/2018–12/2020 “InterOP” (€ 212,250; principal investigator, lead partner, and project manager of TU Wien; research funding by European Funds for Regional Development EFRE; total project volume € 653,124): Studying of linear and non-linear interference effects in shared frequency bands. The project served as the basis for one PhD thesis.

04/2018–10/2020 “Antenna Modelling” (€ 15,000; project manager of TU Wien; research cooperation with industrial partner): Development of a simulation framework for NFC transponders, including coupling of RF field simulations with nonlinear chip-behavior. The project served as the basis for one PhD thesis at TU Wien.

02/2019–11/2019 “3D-HIT” (€ 64,000; project manager of TU Wien, research cooperation with industrial partner): Investigation of the dielectric properties of hay in the microwave region for automatic characterization of selected hay properties.

10/2018–03/2019 “SESAR RX” (€ 40.767; project manager of TU Wien; subcontractor for industrial partner, research funding by EU SESAR): Conformance tests of an LDACS receiver and adaptation of an LDACS-compliant transmitter to new frequency bands.

10/2015–09/2018 “LIMAR” (€ 288,365; project manager of TU Wien; research funding by Austrian Research Promotion Agency FFG, with industrial partner): Investigation of robust receiver circuits and algorithms for the LDACS airborne communication system. The project served as the basis for one PhD thesis.

08/2017–01/2018 “SES RSSI” (€ 15,000; project manager of TU Wien; research cooperation with industrial partner): Characterization of the antenna pattern of electronic shelf labels by coherent nearfield measurements.

02/2017–01/2018 “Backscatter Localization” (€ 22,000; project manager of TU Wien; research cooperation with industrial partner): Development of a  $\Delta$ RCS measurement system for evaluating backscatter localization performance at UHF, 2.45 GHz, and 5.8 GHz. Served as the basis for a Master thesis.

10/2014–12/2017 “REFlex” (€ 257,225; principal investigator, consortium head, and project manager of TU Wien; research funding by Austrian Research Promotion Agency FFG, three academic and three industrial partners; total project volume € 937,000): Investigation of UHF RFID ranging with unmodified tags. Includes RF design, signal processing, and FPGA-concept. Interdisciplinary research including studies of ethical implications. Served as basis for three PhD theses (one at TU Wien) and multiple diploma theses.

- 04/2011–09/2015 "TX4Green" (€ 500,000; principal investigator and project manager; research funding by Vienna Science and Technology Fund WWTF): Switched mode power amplifiers with high efficiency. Includes novel design methodology for digitally driven amplifiers, PWM noise shaping and signal processing for 1-bit systems, nonlinear characterization and linearization of systems with quantized input signals. Served as the basis for three PhD theses.
- 11/2012–03/2015 "BoB" (€ 86,250; project manager of TU Wien; subcontractor for industrial partner, funded by EU EUREKA/EURIPIDES): Analysis of a novel flex-connector technology for high speeds analog/digital/RF PCBs including 3D EM-field simulations, test vehicle design and measurements
- 08/2014–01/2015 "Bodenfeuchtesensoren" (€ 12,480; project manager of TU Wien; research funding by Austrian Research Promotion Agency FFG): RF based sensing of soil moisture and salinity. Sensor optimization by 3D EM-field simulation and prototype design of an embedded sensor system.
- 06/2013–12/2013 "A1 Messungen 2.Teil" (€ 21,550; project manager of TU Wien; contract research for industrial partner): RF-performance comparison of UMTS NodeB of different vendors. Design of customer-specific tests for DECT-interference scenarios.
- 06/2012–12/2012 "A1 Messungen" (€ 24,400; project manager of TU Wien; contract research for industrial partner): RF-performance comparison of LTE eNodeB of different vendors.
- 05/2012–12/2012 "Mikrowellen-Feuchtemessung" (€ 10,000; project manager of TU Wien; contract research): Design of a microwave based moisture sensor for cellulose fibers.
- 07/2011–12/2012 "SMM EM-Simulationen" (€ 8,040, project manager of TU Wien; research cooperation with industrial partner): 3D EM-field simulation of a scanning microwave microscope's probe tip and fringing fields. Calibrated measurement of capacitors in the atto/femto-Farad range.
- 06/2011–02/2013 "LDACS1" (€ 199,616; project manager of TU Wien; subcontractor for industrial partner, research funding by EU SESAR): System design and implementation of an L-band OFDM transmitter for airborne applications with high peak power (250 W) and digital pre-distortion. RF/mixed signal/FPGA co-design.
- 03/2011–05/2011 "LVDS-Link" (€ 21,300; project manager of TU Wien; contract research for industrial partner): Measurement system for characterizing high-speed digital video links in automotive applications (TDR and eye-analysis).
- 09/2009–04/2014 "HFA-Timber" (€ 105,859; project manager of TU Wien; research funding by Austrian Research Promotion Agency FFG COMET K-project, with several industrial partners): System design, implementation, and characterization of an X-band system for measuring the grain angle in timber. RF/mixed signal/FPGA/embedded co-design.
- 05/2009–04/2011 "KapNFC" (€ 226,134; project manager of TU Wien; research funding by Austrian Research Promotion Agency FFG, with industrial partner): Body area network for keyless entry applications. 3D EM-field simulations and design of several prototypes. Project resulted in several joint patents with industrial partner.
- 01/2009–05/2009 "WAVE-Richtungsschätzung" (€ 35,000; project manager of TU Wien; contract research for industrial partner): Design of a low complexity angle of arrival measurement system for wireless access in vehicular environments. Project resulted in a granted patent (US, EU and other countries).
- 09/2008–09/2011 "Backscatter" (€ 147,116, research funding, ZiT)  
Investigation of novel backscattering-concepts for UHF RFID, design of an FPGA-based real time tag emulator.
- 06/2008–12/2008 "Holz X-Band Scanner" (€ 12,500, contract research)  
Linear stage based X-band near field scanner to check the feasibility of microwave based grain angle sensing in timber.
- 01/2008–09/2008 "kapNFC" (€ 35,000, contract research)  
Feasibility study for body area network based keyless entry system.

- 12/2007–10/2008 "Reader 868 MHz" (€ 145,160, contract research)  
Entire system design of an UHF multi-protocol RFID-reader for automotive applications. Development of an FPGA-implementable (close to optimum) parallel receiver. RF/mixed signal/FPGA co-design.
- 04/2007–03/2009 "Switched" (€ 150,000, research funding, FFG)  
Design of an RF power amplifier suited for digital/switched operation. Development of novel load/pull-measurement techniques and design of a prototype amplifier.
- 12/2006–12/2007 "Kanalsimulator 5.8GHz" (€ 104,500, contract research)  
Design of an FPGA-based channel emulator for tolling applications including anechoic chamber, RF/mixed signal/FPGA/embedded co-design.
- 07/2006–07/2006 "RFID-Messungen" (€ 10,500, contract research)  
Feasibility study for UHF RFID tolling in highway scenarios based on measurements.
- 04/2006–07/2007 "Holz X-Band Messung" (€ 15,860, contract research)  
Feasibility study of microwave based grain angle sensing.
- 02/2006–10/2006 "Kanalsimulator 868MHz" (€ 40,000, contract research)  
PC-based channel emulator for UHF RFID readers for playback of pre-recorded scenarios.

## **Publication sorted by dominant research field**

*(Only fields with  $\geq 4$  publications listed)*

### **Antenna design and measurement**

[J.29], [J.25], [J.19], [J.17], [J.16], [C.91], [C.89], [C.82], [C.32], [C.26]

### **Electromagnetic Compatibility (EMC)**

[J.41], [J.40], [J.34], [C.90], [C.84], [C.83]

### **Indoor Localization**

[J.37], [J.36], [J.33], [C.88], [C.81], [C.80], [C.79], [C.75], [C.74], [C.69]

### **Microwave sensing, measurements, and material characterization**

[J.42], [J.35], [J.32], [J.28], [J.24], [J.21], [J.20], [J.12], [J.10], [J.9], [J.3], [C.77], [C.63], [C.61], [C.54], [C.53], [C.43], [C.40], [C.19]

### **RF power amplifiers – design of analog PAs**

[J.2], [J.1], [C.21], [C.4], [C.3], [I.5]

### **RF power amplifiers – design of digital switched mode PAs**

[J.6], [C.48], [C.42], [C.38], [C.33]

### **RF power amplifiers – load/source pull**

[M.2], [B.1], [J.4], [C.13], [C.12], [C.8], [C.6], [C.5], [I.10], [I.9], [I.8], [I.7], [I.6], [I.4], [I.3], [I.2], [I.1]

### **RF power amplifiers – nonlinear modeling of digital switched mode PAs**

[C.71], [J.18], [J.15], [C.64], [C.60], [C.55], [C.52], [C.49], [C.44], [C.39], [C.37], [C.34]

### **RF power amplifiers – nonlinear modeling of analogue PAs**

[J.27], [C.66], [C.65], [C.62], [C.56], [C.14], [C.11], [C.10], [C.9], [C.7]

### **RF power amplifiers – signal processing for digital switched mode PAs**

[J.11], [J.8], [C.31], [C.30]

### **Radio frequency identification**

[J.31], [C.72], [C.70], [J.26], [J.23], [J.22], [J.14], [J.7], [C.87], [C.69], [C.68], [C.67], [C.59], [C.58], [C.50], [C.45], [C.28], [C.27], [C.25], [C.24], [C.23], [C.20], [C.18], [C.17], [C.16], [I.14], [I.12], [I.11]

### **Terahertz electronics**

[J.13], [C.47], [C.46], [C.41], [C.35]



## Publication list

### University publications

- [U.3] H. Arthaber, "Digitally Driven Switched Mode Power Amplifiers (Amplifier Design, Digital Modulation, and Modeling)", Habilitation thesis, TU Wien, Oct. 2017.
- [U.2] H. Arthaber, "Harmonic Load Pull Methods", PhD thesis, TU Wien, March 2004.
- [U.1] H. Arthaber, "Algorithms for Combining Diversity Signals in GSM", diploma thesis, TU Wien, Feb. 2000.

### Book chapters

- [B.3] H. Arthaber, "Field-based description of propagation on waveguides," in H.L. Hartnagel, R. Quay, U.L. Rohde, M. Rudolph (eds) "Fundamentals of RF and Microwave Techniques and Technologies," pp. 335–483, Springer, Cham., June 2023, doi: 10.1007/978-3-030-94100-0\_5.
- [B.2] H. Schweinzer, S. F. Shaukat, H. Arthaber, "Media," in *The Industrial Electronics Handbook, second edition*, eds. B. M. Wilamowski and J. D. Irwin, CRC Press, Mar. 2011, pp. 2-1–2-17, doi: 10.1201/b10603-4.
- [B.1] H. Arthaber, M. Mayer: "Source and Load Pull Techniques," in *Characterization and Modelling Approaches for Advanced Linearisation Techniques*, Nov. 2005, pp. 27–62, ISBN 81-308-0027-6.

### Journals (peer-reviewed)

- [J.42] H. Kähler, R. Winkler, H. Arthaber, H. Plank, S. Schmid, "Towards practical mass spectrometry with nanomechanical pillar resonators by surface acoustic wave transduction," *AIP Advances*, vol. 14, no. 12: 015119, Jan. 2024, doi: [10.1063/5.0176791](https://doi.org/10.1063/5.0176791).
- [J.41] G. Gianetti, C. Spindelberger, H. Arthaber, "Simple Semi-Analytical Septum Design for Improved Matching in Open TEM Cells," *IEEE Letters on Electromagnetic Compatibility Practice and Applications*, (Early Access), doi: [10.1109/LEMCPA.2023.3333003](https://doi.org/10.1109/LEMCPA.2023.3333003).
- [J.40] C. Spindelberger and H. Arthaber, "Investigating the Potential of the Low-Cost SDR USRP B200mini as an EMI Receiver," *IEEE Transactions on Electromagnetic Compatibility*, Oct. 2023, (Early Access), doi: [10.1109/TEMC.2023.3317731](https://doi.org/10.1109/TEMC.2023.3317731).
- [J.39] M. H. Kwon, I. Ignat, D. Platz, H. Arthaber, U. Schmid, "Aluminum Nitride Surface Acoustic Wave Resonators with High of Product by Optical Lithography," *Elsevier Sensors and Actuators A: Physical*, vol. 362 (2023) 114637, Sep. 2023, doi: [10.1016/j.sna.2023.114637](https://doi.org/10.1016/j.sna.2023.114637).
- [J.38] A. Povalac, J. Kral, H. Arthaber, O. Kolar, M. Novak, "Exploring LoRaWAN Traffic: In-Depth Analysis of IoT Network Communications," *MDPI Sensors 2023*, vol. 23, no. 17: 7333, Aug. 2023, doi: 10.3390/s23177333.
- [J.37] S. Hechenberger, S. Tertinek, H. Arthaber, "Low-Complexity Wideband Interference Mitigation for UWB ToA Estimation," *MDPI Sensors 2023*, vol. 23, no. 13: 5806, June 2023, doi: 10.3390/s23135806.
- [J.36] A. Fuchs, L. Wielander, D. Neunteufel, H. Arthaber, K. Witrisal, "Wideband TDoA Positioning Exploiting RSS-Based Clustering," *MDPI Sensors 2023*, vol. 23, no. 12: 5772, June 2023, doi: 10.3390/s23125772.
- [J.35] H. Kähler, H. Arthaber, R. Winkler, R. West, I. Ignat, H. Plank, S. Schmid, "Transduction of single nanomechanical pillar resonators by scattering of surface acoustic waves," *ACS Nano Letters 2023*, vol 23, no. 10, pp. 4344–4350, May 2023, doi: 10.1021/acs.nanolett.3c00605.
- [J.34] C. Spindelberger, H. Arthaber, "Improving the Performance of Direct-Conversion SDRs for Radiated Pre-Compliance Measurements," in *IEEE Letters on Electromagnetic Compatibility Practice and Applications*, vol. 5, no. 1, pp. 22–26, March 2023, doi: 10.1109/LEMCPA.2022.3227409.
- [J.33] D. Neunteufel, S. Grebien, H. Arthaber, "Indoor Positioning of Low-Cost Narrowband IoT Nodes: Evaluation of a TDoA Approach in a Retail Environment," *MDPI Sensors 2022*, vol. 22, no. 7: 2663, March 2022, doi: 10.3390/s22072663.

- [J.32] P. Kadera, J. Lacik, H. Arthaber, "Effective Relative Permittivity Determination of 3D Printed Artificial Dielectric Substrates Based on a Cross Unit Cell," *Radioengineering Journal*, vol. 30, no. 4, pp. 595–610, Dec. 2021, doi: 10.13164/re.2021.0595.
- [J.31] M. Pesic, H. A. Westra, A. Levanto, S. Rampetzreiter, W. Pachler, H. Arthaber, "Modeling and Extracting the Nonlinear Input Characteristics of Proximity Coupling Transponder ICs by Utilizing the ISO Measurement Setup," *IEEE Journal of Radio Frequency Identification*, vol. 6, pp. 189–196, Sept. 2021, doi: 10.1109/JRFID.2021.3112799.
- [J.30] H. Kavousi Ghafi, C. Spindelberger, H. Arthaber, "Modeling of Co-channel Interference in Bluetooth Low Energy based on Measurement Data," *EURASIP Journal on Wireless Communications and Networking 2021*, vol. 143 (2021), pp. 1–17, July 2021, doi: 10.1186/s13638-021-02005-2.
- [J.29] T. Mikulasek, J. Puskely, A. G. Yarovoy, J. Lacik, H. Arthaber, "Transverse Slot with Control of Amplitude and Phase for Traveling-Wave SIW Antenna Arrays," *IET Microwave, Antennas & Propagation*, vol. 14, issue 15, pp. 1943–1946, Dec 2020, doi: 10.1049/iet-map.2020.0069.
- [J.28] E. Auerbach, D. Berkov, B. Pichler, N. Leder, S. Gider, H. Arthaber, "Injection locking at fractional frequencies of magnetic tunnel junction (MTJ)-based read sensors' ferromagnetic resonance modes," *Physical Review Applied*, vol. 12, issue 5, pp. 054022-1–12, Nov. 2019, arXiv:1905.08183 [physics.app-ph], doi: 10.1103/PhysRevApplied.12.054022.
- [J.27] B. Pichler, G. Magerl, H. Arthaber, "A Study on Quadratic PHD Models for Large Signal Applications," *IEEE Transactions on Microwave Theory and Techniques*, vol. 67, issue 7, pp. 2514–2520, July 2019, doi: 10.1109/TMTT.2019.2915086.
- [J.26] M. Pesic, J. Gruber, S. Rampetzreiter, H. Wirtschnig, H. Arthaber, "A precise resonance frequency measurement method based on ISO-standardized setups for contactless chip cards," *International Journal of RF and Microwave Computer-Aided Engineering*, vol. 29, issue 5, May 2019, doi: 10.1002/mmce.21702.
- [J.25] P. Vasina, T. Mikulasek, J. Lacik, H. Arthaber, "Beam- and polarization-reconfigurable SIW ring-slot antenna array," *IET Microwave, Antennas & Propagation*, vol. 12, issue 15, pp. 2313–2319, Dec 2018, doi: 10.1049/iet-map.2018.5192.
- [J.24] E. Auerbach, N. Leder, S. Gider, H. Arthaber, "Characterization of MgO-Based Magnetic Tunnel Junctions' Nonlinear Ferromagnetic Resonance Modes," *IEEE Transactions on Magnetics*, vol. 54, issue 2, pp. 1–5, Jan 2018, doi: 10.1109/TMAG.2017.2744659.
- [J.23] F. Galler, S. Grebien, T. Faseth, K. Witrisal, G. Magerl, H. Arthaber, "Extension of an SDR UHF RFID Testbed for MIMO and Monostatic Time of Flight Based Ranging," *IEEE Journal of Radio Frequency Identification*, vol. 1, issue 1, pp. 32–38, Sept. 2017, doi: 10.1109/JRFID.2017.2749200.
- [J.22] S. Grebien, J. Kulmer, F. Galler, M. Goller, E. Leitinger, H. Arthaber, K. Witrisal, "Range Estimation and Performance Limits for UHF-RFID Backscatter Channels," *IEEE Journal of Radio Frequency Identification*, vol. 1, issue 1, pp. 39–50, Sept. 2017, doi: 10.1109/JRFID.2017.2749514.
- [J.21] O. Huber, H. Arthaber, "Dielectric Characterization of RF-Printed Circuit Board Materials by Microstrip Transmission Lines and Conductor-Backed Coplanar Waveguides up to 110 GHz," *IEEE Transactions on Microwave Theory and Techniques*, vol. 66, issue 1, pp. 237–244, Jan. 2018, doi: 10.1109/TMTT.2017.2750152.
- [J.20] A. Aichholzer, C. Schuberth, H. Mayer, H. Arthaber, "Microwave Testing of Moist and Oven-Dry Wood to evaluate Grain Angle, Density, Moisture Content and the Dielectric Constant of Spruce from 8 GHz to 12 GHz," *European Journal of Wood and Wood Products*, pp. 1–15, May 2017, doi: 10.1007/s00107-017-1203-x.
- [J.19] J. Puskely, T. Mikulasek, J. Lacik, Z. Raida, H. Arthaber, "SIW-Fed Vivaldi Antenna with Beam Steering Capabilities," *Microwave and Optical Technology Letters*, vol. 59, issue 5, pp. 1022–1027, May 2017, doi: 10.1002/mop.30447.
- [J.18] N. Leder, B. Pichler, T. Faseth, H. Ruotsalainen, H. Arthaber, "Hierarchical Table Based Model for All-Digital RF-Transmitters," *IEEE Transactions on Microwave Theory and Techniques*, vol. 65, issue 3, March 2017, doi: 10.1109/TMTT.2016.2630068.
- [J.17] J. Lambor, J. Lacik, Z. Raida, H. Arthaber, "High-Gain Wideband SIW Offset Parabolic Antenna," *Microwave and Optical Technology Letters*, vol. 58, issue 12, pp. 2888–2892, Dec. 2016, doi: 10.1002/mop.30170.
- [J.16] J. Puskely, J. Lacik, Z. Raida, H. Arthaber, "High Gain Dielectric Loaded Vivaldi Antenna for Ka Band Applications," *IEEE Antennas and Wireless Propagation Letters*, vol. 15, no. 1, pp. 2004–2007, Dec. 2016, doi: 10.1109/LAWP.2016.2550658.

- [J.15] H. A. Ruotsalainen, N. Leder, B. Pichler, H. Arthaber, G. Magerl, "Equivalent Complex Baseband Model for Digital Transmitters Based on 1-bit Quadrature Pulse Encoding," *IEEE Transactions on Circuits and Systems-I: Regular Papers*, vol. 62, no. 11, pp. 2739–2747, Oct. 2015, doi: 10.1109/TCSI.2015.2476395.
- [J.14] H. Arthaber, T. Faseth, F. Galler, "Spread-Spectrum Based Ranging of Passive UHF EPC RFID Tags," *IEEE Communications Letters*, vol. 19, no. 10, pp. 1734–1737, Oct. 2015, doi: 10.1109/LCOMM.2015.2469664.
- [J.13] D. Bachmann, N. Leder, M. Rösch, G. Scalari, M. Beck, H. Arthaber, J. Faist, K. Unterrainer, J. Darmo, "Broadband terahertz amplification in a heterogeneous quantum cascade laser," *Optics Express*, vol. 23, no. 3, pp. 3117–3125, Feb. 2015, doi: 10.1364/OE.23.003117.
- [J.12] J. K. Denzler, C. Lux, H. Arthaber, "Contactless moisture content and density evaluation of sawn timber using microwave transmission," *International Wood Products Journal*, vol. 5, no. 4, pp. 200–206, Nov. 2014, doi: 10.1179/2042645314Y.0000000066.
- [J.11] H. A. Ruotsalainen, H. Arthaber, T. I. Laakso, G. Magerl, "Quantization Noise Reduction Techniques for Digital Pulsed RF Signal Generation Based on Quadrature Noise Shaped Encoding," *IEEE Transactions on Circuits and Systems-I: Regular Papers*, vol. 61, no. 9, pp. 2525–2536, July 2014, doi: 10.1109/TCSI.2014.2332259.
- [J.10] A. Aichholzer, H. Arthaber, C. Schuberth, H. Mayer, "Non-Destructive Evaluation of Grain Angle, Moisture Content and Density of Spruce with Microwaves," *European Journal of Wood and Wood Products*, vol. 71, no. 6, pp. 779–786, Nov. 2013, doi: 10.1007/s00107-013-0740-1.
- [J.9] J. K. Denzler, J. Koppensteiner, H. Arthaber, "Grain angle detection on local scale using microwave transmission," *International Wood Products Journal*, vol. 4, no. 2, pp. 68–74, May 2013, doi: 10.1179/2042645313Y.0000000030.
- [J.8] H. A. Ruotsalainen, H. Arthaber, G. Magerl, "A New Quadrature PWM Modulator with Tunable Center Frequency for Digital RF Transmitters," *IEEE Transactions on Circuits and Systems-II: Express Briefs*, vol. 59, no. 11, pp. 756–760, Nov. 2012, doi: 10.1109/TCSII.2012.2222834.
- [J.7] H. Arthaber, T. Faseth, M. Winkler, "Emulation des Funkkanals und des Transponders in UHF-Mautsystemen," *e&i Elektrotechnik und Informationstechnik*, vol. 128, no. 7–8, pp. 282–287, Aug. 2011, doi: 10.1007/s00502-011-0017-5.
- [J.6] C. Schubert, P. Singerl, M. E. Gadringer, H. Arthaber, A. Wiesbauer, G. Magerl, "Highly Efficient Switched-Mode Transmitter Using a Current Mode Class-D RF Amplifier," *International Journal of RF and Microwave Computer-Aided Engineering*, vol. 20, no. 4, pp. 446–457, July 2010, doi: 10.1002/mmce.20450.
- [J.5] A. Adalan, G. Simhandl, H. Arthaber, "Robuste funkbasierte Sensornetze – Aktuelle Forschungsaktivitäten und innovative Lösungsansätze für infrastrukturlose Positionierungssysteme," *e&i Elektrotechnik und Informationstechnik*, vol. 127, no. 3, pp. 47–55,
- [J.4] H. Arthaber, M. L. Mayer, G. Magerl, "An active load-pull setup for broadband signals using digital baseband processing for the active loop," *International Journal of RF and Microwave Computer-Aided Engineering*, vol. 18, no. 6, pp. 574–581, Nov. 2008, doi: 10.1002/mmce.20333.
- [J.3] B. Považay, A. Unterhuber, B. Hermann, H. Sattmann, H. Arthaber, W. Drexler, "Full-field time-encoded frequency-domain optical coherence tomography," *Optics Express*, vol. 14, no. 17, pp. 7661–7669, Aug. 2006, doi: 10.1364/OE.14.007661.
- [J.2] H. Arthaber, "In-situ Messung von Strom- und Spannungsverläufen in Mikrowellentransistoren," *Technisches Messen*, vol. 72, no. 4, pp. 205–214, Apr. 2005, doi: 10.1524/teme.72.4.205.62918.
- [J.1] H. Arthaber, M. L. Mayer, A. Gafni, M. E. Gadringer, G. Magerl, "A Time Domain Large Signal Measurement Setup," *International Journal of RF and Microwave Computer-Aided Engineering*, vol. 15, no. 1, pp. 3–12, Jan. 2005, doi: 10.1002/mmce.20041.

#### Conference Proceedings (peer-reviewed)

- [C.91] J. Soklic, H. Arthaber, "Comparison of Methods for Computing Spherical Wave Coefficients from Truncated Measurements," 2023 IEEE Conference on Antenna Measurements & Applications, Genoa, Italy, Nov. 2023, doi: [10.1109/CAMA57522.2023.10352741](https://doi.org/10.1109/CAMA57522.2023.10352741).

- [C.90] D. Kalodikis, C. Spindelberger, H. Arthaber, "A Feed-Forward Gain Control for Improving the Dynamic Range of the Receiver's ADC in EMC Measurements," International Symposium on Electromagnetic Compatibility – EMC EUROPE, Kraków, Poland, Sep. 2023, doi: [10.1109/EMCEurope57790.2023.10274411](https://doi.org/10.1109/EMCEurope57790.2023.10274411).
- [C.89] J. Soklic, H. Arthaber, "Full-Sphere Radiation Pattern Characterization of IoT Devices via Pattern Stitching," *URSI GAAS 2023*, Sapporo, Japan, Aug. 2023, doi: [10.23919/URSIGASS57860.2023.10265620](https://doi.org/10.23919/URSIGASS57860.2023.10265620).
- [C.88] T. M. Pohl, H. Arthaber, C. Mecklenbräuker, "Reconstruction of Passive UHF RFID Tag Trajectories with a Distributed Antenna Reader System," in *Proc. 2023 IEEE International Conference on RFID (RFID)*, Seattle, USA, Sep. 2023, doi: [10.23919/EuCAP57121.2023.10133777](https://doi.org/10.23919/EuCAP57121.2023.10133777).
- [C.87] T. M. Pohl, H. Arthaber, C. Mecklenbräuker, "Spatial Statistics of Received UHF RFID Phase in Indoor Environment Using Distributed Reader Antenna System," *17th European Conference on Antennas and Propagation EuCAP 2023*, Florence, Italy, pp. 1–4, March 2023, doi: [10.23919/EuCAP57121.2023.10133777](https://doi.org/10.23919/EuCAP57121.2023.10133777).
- [C.86] J. Soklič and H. Arthaber, "Full-Sphere Characterization of Low-Gain Antennas via Truncated Field Pattern Stitching," *2022 Antenna Measurement Techniques Association Symposium (AMTA)*, Denver, USA, Oct. 2022, pp. 1-6, doi: [10.23919/AMTA55213.2022.9954961](https://doi.org/10.23919/AMTA55213.2022.9954961).
- [C.85] E. Jirousek, J. Soklič and H. Arthaber, "Improved Equivalent Circuit Model for Complementary Split Ring Resonators," *2022 Kleinheubach Conference*, Kleinheubach, Germany, Sep. 2022, pp. 1–4, ISBN: 978-3-948571-07-8.
- [C.84] C. Spindelberger, G. Giannetti and H. Arthaber, "Increasing the Test-Volume of Open TEM Cells by Using an Asymmetric Design," *2022 Kleinheubach Conference*, Kleinheubach, Germany, Sep. 2022, pp. 1–4, ISBN: 978-3-948571-07-8.
- [C.83] C. Spindelberger and H. Arthaber, "Out-of-the-Box Performance of popular SDRs for EMC pre-compliance Measurements," *2022 International Symposium on Electromagnetic Compatibility – EMC Europe*, Sep. 2022, pp. 677–682, doi: [10.1109/EMCEurope51680.2022.9901003](https://doi.org/10.1109/EMCEurope51680.2022.9901003).
- [C.82] J. Soklic, H. Arthaber, "Investigation of Coordinate System Rotation and Translation on Iteratively Reconstructed Truncated Antenna Field Patterns," *2022 IEEE International Symposium on Antennas and Propagation and USNC-URSI Radio Science Meeting (APS/URSI)*, Denver, USA, July 2022, pp. 631–632, doi: [10.1109/AP-S/USNC-URSI47032.2022.9886744](https://doi.org/10.1109/AP-S/USNC-URSI47032.2022.9886744).
- [C.81] S. Hechenberger, D. Neunteufel, H. Arthaber, "Ray Tracing and Measurement based Evaluation of a UHF RFID Ranging System," *2022 IEEE International Conference on RFID (RFID)*, 2022, Las Vegas, USA, May 2022, pp. 75–80, doi: [10.1109/RFID54732.2022.9795977](https://doi.org/10.1109/RFID54732.2022.9795977).
- [C.80] S. Hechenberger, S. Tertinek and H. Arthaber, "Performance Evaluation of Detection-based UWB Ranging in Presence of Interference," *2021 55th Asilomar Conference on Signals, Systems, and Computers*, Oct. 2021, pp. 410–414, doi: [10.1109/IEEECONF53345.2021.9723344](https://doi.org/10.1109/IEEECONF53345.2021.9723344).
- [C.79] D. Neunteufel, S. Grebien, H. Arthaber, "Bayesian CRLB for Blind Indoor Localization with Imperfect Receiver Synchronization," *2021 55th Asilomar Conference on Signals, Systems, and Computers*, Oct. 2021, pp. 517–522, doi: [10.1109/IEEECONF53345.2021.9723254](https://doi.org/10.1109/IEEECONF53345.2021.9723254).
- [C.78] M. Zaisberger, H. Arthaber, "Bit Error Rate Validation for Aeronautical Communication System LDACS for Higher Modulation Schemes," in *Proc. 2021 31st International Conference Radioelektronika (RADIOELEKTRONIKA)*, Brno, Czech Republic (virtual conference), Apr. 2021, pp. 1–6, doi: [10.1109/RADIOELEKTRONIKA52220.2021.9420211](https://doi.org/10.1109/RADIOELEKTRONIKA52220.2021.9420211).
- [C.77] J. Soklic, H. Arthaber, "Evaluating Resonant Cavity Surface Treatment Procedures with a New Unloaded Q-Factor Measurement Method", in *Proc. 50th European Microwave Conference (EuMC)*, Utrecht, The Netherlands, Jan 2021, pp. 755–758, doi: [10.23919/EuMC48046.2021.9338229](https://doi.org/10.23919/EuMC48046.2021.9338229).
- [C.76] M. Zaisberger, H. Arthaber, "Random Access Performance Evaluation and Improvements of the LDACS," in *Proc. 2020 The 4th International Conference on Telecommunications and Communication Engineering ICTCE 2020*, Singapore (virtual conference), Dec. 2020, pp. 26–34, doi: [10.1007/978-981-16-5692-7\\_4](https://doi.org/10.1007/978-981-16-5692-7_4).
- [C.75] D. Neunteufel, A. Fuchs, H. Arthaber, "ToF-based indoor positioning for low-power IoT nodes," in *Proc. 2020 54th Asilomar Conference on Signals, Systems, and Computers*, Pacific Grove, CA, USA (virtual conference), Nov. 2020, pp. 641–645, doi: [10.1109/IEEECONF51394.2020.9443431](https://doi.org/10.1109/IEEECONF51394.2020.9443431).
- [C.74] D. Neunteufel, S. Grebien, S. Hechenberger, K. Witrisal, H. Arthaber, "Coherent Chirp Generation by Narrowband Transceiver Chips for ToF Indoor Localization", in *Proc. GLOBECOM 2020 - 2020 IEEE Global Communications Conference*, Taipei, Taiwan (virtual conference), Dec. 2020, pp. 1–6, doi: [10.1109/GLOBECOM42002.2020.9348025](https://doi.org/10.1109/GLOBECOM42002.2020.9348025).

- [C.73] B. Mesgari, N. Vokić, B. Goll, B. Pichler, D. Milovančev, K. Schneider-Hornstein, H. Arthaber, H. Zimmermann, "38.5 Gb/sRoF Based Optical Receiver for 5G Mobile Remote Radio Head Applications," in *Prod. 2020 Austrochip Workshop on Microelectronics (Austrochip)*, Vienna, Austria, Oct. 2020, pp. 66–70, doi: 10.1109/Austrochip51129.2020.9232992.
- [C.72] M. Pesic, W. Pachler, S. Rampetzreiter, H. Arthaber, "Modeling and Design of Small, Passive, and Standard-compliant Proximity Coupling Transponders," in *Proc. 2020 IEEE International Conference on RFID (RFID)*, Orlando, USA, Sep. 2020, pp. 1–7, doi: 10.1109/RFID49298.2020.9244912.
- [C.71] B. Pichler, H. Arthaber, "Solution for the Large-Signal Matching Problem: Maximizing the Efficiency Using X-parameters," in *Proc. 2020 Integrated Nonlinear Microwave and Millimetre-wave Circuits Workshop (INMMiC)*, Cardiff, United Kingdom, 2020, pp. 1–3, doi: 10.1109/INMMiC46721.2020.9160069.
- [C.70] M. Pesic, S. Rampetzreiter, W. Pachler, H. Arthaber, "Searching for the Optimal Design of Small Payment Accessories," in *Proc. 2020 International Conference on Broadband Communications for Next Generation Networks and Multimedia Applications (CoBCom)*, Graz, Austria, July 2020, pp. 1–7, doi: 10.1109/CoBCom49975.2020.9174181.
- [C.69] S. Grebien, F. Galler, D. Neunteufel, H. Arthaber, K. Witrisal, "Experimental Evaluation of a UHF-MIMO RFID System for Positioning in Multipath Channels," in *Proc. 2019 International Conference on RFID Technology and Applications (RFID-TA)*, Pisa, Italy, July 2019, pp. 95–100, doi: 10.1109/RFID-TA.2019.8892179.
- [C.68] F. Galler, D. Neunteufel, H. Arthaber, "Complex-Valued Delta RCS Simulation of RFID Tags for Time of Flight Ranging Performance Assessment," in *Proc. 2019 International Conference on RFID Technology and Applications (RFID-TA)*, Pisa, Italy, July 2019, pp. 285–290, doi: 10.1109/RFID-TA.2019.8892198.
- [C.67] D. Neunteufel, F. Galler, H. Arthaber, "Comprehensive Measurement of Complex-valued Delta Radar Cross-section," in *Proc. 2018 6th International EURASIP Workshop on RFID Technology (EURFID)*, Brno, Czech Republic, pp. 1–3, Sep. 2018, doi: 10.1109/EURFID.2018.8611768.
- [C.66] B. Pichler, G. Magerl, H. Arthaber, "A Robust Extraction Technique for Second Order PHD Based Behavioral Models," in *Proc. 2018 Integrated Nonlinear Microwave and Millimetre-wave Circuits Workshop (INMMiC)*, pp. 1–7, Brive La Gaillarde, France, July 2018, doi: 10.1109/INMMiC.2018.8430017.
- [C.65] B. Pichler, N. Leder, G. Magerl, H. Arthaber, "Experimental Study on Load Dependent X-Parameter Models for PA Design," in *Proc. 2017 IEEE Radio and Antenna Days of the Indian Ocean (RADIO)*, Cape Town, South Africa, Sep. 2017, doi: 10.23919/RADIO.2017.8242245.
- [C.64] N. Leder, B. Pichler, G. Magerl, H. Arthaber, "Compacting Look-Up-Table Models for All-Digital RF-Transmitters," in *Proc. 2017 IEEE Radio and Antenna Days of the Indian Ocean (RADIO)*, Cape Town, South Africa, Sep. 2017, doi: 10.23919/RADIO.2017.8242242.
- [C.63] O. Huber, G. Magerl, H. Arthaber, "Impact of Different Surface Finishes on Insertion Loss for Microstrip Resonators up to 110 GHz," in *Proc. 2017 IEEE Radio and Antenna Days of the Indian Ocean (RADIO)*, Cape Town, South Africa, Sep. 2017, doi: 10.23919/RADIO.2017.8242233.
- [C.62] B. Pichler, N. Leder, G. Magerl, H. Arthaber, "Load Error Correction for High Power Load Dependent X-Parameter Measurements," in *Proc. 12th European Microwave Integrated Circuits Conference (EuMIC)*, pp. 216–219, Nuremberg, Germany, Oct. 2017, doi: 10.23919/EuMIC.2017.8230698.
- [C.61] O. Huber, G. Magerl, H. Arthaber, "Dispersion Behavior of the Apparent Permittivity for Quasi-TEM Transmission Lines up to 110 GHz," in *Proc. 47th European Microwave Conference (EuMC)*, pp. 839–842, Nuremberg, Germany, Oct. 2017, doi: 10.23919/EuMC.2017.8230975.
- [C.60] N. Leder, B. Pichler, G. Magerl, H. Arthaber, "Robust Verification of Look-Up-Table-Based Models for All-Digital RF-Transmitters," in *Proc. 12th European Microwave Integrated Circuits Conference (EuMIC)*, pp. 81–84, Nuremberg, Germany, Oct. 2017, doi: 10.23919/EuMIC.2017.8230665.
- [C.59] F. Galler, S. Hinteregger, T. Faseth, N. Leder, G. Magerl, H. Arthaber, "Performance Evaluation and Verification of Spread-Spectrum Based UHF RFID Ranging," in *2017 IEEE International Conference on RFID (RFID)*, pp. 124–129, Phoenix, USA, May 2017, doi: 10.1109/RFID.2017.7945597.
- [C.58] S. Hinteregger, J. Kulmer, M. Goller, F. Galler, H. Arthaber, K. Witrisal, "UHF-RFID Backscatter Channel Analysis for Accurate Wideband Ranging," in *2017 IEEE International Conference on RFID (RFID)*, pp. 117–123, Phoenix, USA, May 2017, doi: 10.1109/RFID.2017.7945596.

- [C.57] E. Auerbach, S. Gider, G. Albuquerque, N. Leder, H. Arthaber, D. Süß, "High-frequency modes of the dual free layer sensor," in *2017 IEEE International Magnetics Conference (INTERMAG)*, Dublin, Ireland, April 2017, doi: 10.1109/INTMAG.2017.8007851.
- [C.56] B. Pichler, N. Leder, G. Magerl, H. Arthaber, "On the Dependability of Load Dependent X-Parameter Models for Varying Loads," in *The International Workshop on Integrated Nonlinear Microwave and Millimetre-wave Circuits (INMMiC)*, Graz, Austria, Apr. 2017, doi: 10.1109/INMMIC.2017.7927306.
- [C.55] N. Leder, B. Pichler, G. Magerl, H. Arthaber, "Delay Compensation and Tracking for All-Digital RF-Transmitter Models," in *The International Workshop on Integrated Nonlinear Microwave and Millimetre-wave Circuits (INMMiC)*, Graz, Austria, Apr. 2017, doi: 10.1109/INMMIC.2017.7927307.
- [C.54] E. Auerbach, N. Leder, S. Gider, D. Süß, H. Arthaber, "Characterization of Dynamic Nonlinear Effects in MTJ-Based Magnetic Sensors," in *The International Workshop on Integrated Nonlinear Microwave and Millimetre-wave Circuits (INMMiC)*, Graz, Austria, Apr. 2017, doi: 10.1109/INMMIC.2017.7927309.
- [C.53] O. Huber, T. Faseth, H. Arthaber, E. Schlaffer, "Optimized Launching Pads for Investigating Transmission Line Losses for Different Surface Finishes of RF-PCBs up to 110 GHz," in *Proc. IEEE International Microwave and RF conference (IMaRC)*, Hyderabad, India, pp. 165–168, Dec. 2015, doi: 10.1109/IMaRC.2015.7411371.
- [C.52] N. Leder, B. Pichler, H. Ruotsalainen, T. Faseth, H. Arthaber, "On nonlinear memory effects in all digital RF-transmitters," in *Proc. IEEE International Microwave and RF conference (IMaRC)*, Hyderabad, India, pp. 300–303, Dec. 2015, doi: 10.1109/IMaRC.2015.7411377.
- [C.51] P. Krivic, G. Radosavljevic, S. Birgermajer, N. Cselyuszka, H. Arthaber, "Design and Fabrication of the Bosma Stripline Circulator in LTCC Technology," in *Proc. International Conference on Microwaves, Communications, Antennas and Electronic Systems (COMCAS)*, Tel Aviv, Israel, Nov. 2015, doi: 10.1109/COMCAS.2015.7360454.
- [C.50] F. Galler, T. Faseth, H. Arthaber, "Implementation aspects of an SDR based EPC RFID reader testbed," in *2015 International EURASIP Workshop on RFID Technology (EURFID'15)*, Rosenheim, Germany, pp. 94–97, Oct. 2015, doi: 10.1109/EURFID.2015.7332391.
- [C.49] N. Leder, B. Pichler, H. Ruotsalainen, T. Faseth, H. Arthaber, "Nonlinear Simulation of Digital RF Transmitters Under Modulated Excitation," in *The International Workshop on Integrated Nonlinear Microwave and Millimetre-wave Circuits (INMMiC)*, Taormina, Italy, Oct. 2015, doi: 10.1109/INMMIC.2015.7330359.
- [C.48] B. Pichler, N. Leder, T. Faseth, H. Arthaber, "Calibration Method for Coupler Based Time Domain Waveform Measurements," in *The International Workshop on Integrated Nonlinear Microwave and Millimetre-wave Circuits (INMMiC)*, Taormina, Italy, Oct. 2015, doi: 10.1109/INMMIC.2015.7330363.
- [C.47] D. Bachmann, N. Leder, M. Rösch, G. Scalari, M. Beck, H. Arthaber, J. Faist, K. Unterrainer, J. Darmo, "Broadband quantum cascade laser based terahertz amplifier with an integrated emitter," in *EQEC 2015 - Conference Digest CLEO Europe 2015*, München, Deutschland, June 2015, ISBN: 978-1-4673-7475-0.
- [C.46] D. Bachmann, N. Leder, M. Rösch, M. Beck, H. Arthaber, J. Faist, K. Unterrainer, J. Darmo, "Amplification of broadband terahertz pulses in a quantum cascade heterostructure," in *Abstracts in Laser Science to Photonic Applications CLEO 2015*, San Jose, CA, USA, May 2015, doi: 10.1364/CLEO\_SI.2015.SM1H.6.
- [C.45] F. Galler, T. Faseth, H. Arthaber, "SDR based EPC UHF RFID Reader DS-SS Localization Testbed," in *Proc. IEEE Wireless and Microwave Technology Conference WAMICON*, Cocoa Beach, USA, Apr. 2015, doi: 10.1109/WAMICON.2015.7120382.
- [C.44] N. Leder, T. Faseth, H. Ruotsalainen, H. Arthaber, "Computationally efficient table based modeling for digital RF transmitters," in *Proc. IEEE Wireless and Microwave Technology Conference WAMICON*, Cocoa Beach, USA, Apr. 2015, doi: 10.1109/WAMICON.2015.7120371.
- [C.43] O. Huber, T. Faseth, H. Arthaber, E. Schlaffer, "Characterization of Printed Circuit Board Material & Manufacturing Technology for High Frequency Applications up to 110 GHz," in *Proc. IEEE Wireless and Microwave Technology Conference (WAMICON)*, Cocoa Beach, USA, Apr. 2015, doi: 10.1109/WAMICON.2015.7120406.
- [C.42] B. Pichler, N. Leder, T. Faseth, H. Arthaber, G. Magerl, "Efficiency Enhanced Switched Mode Power Amplifier for Digital RF Transmitters," in *Proc. IEEE Wireless and Microwave Technology Conference (WAMICON)*, Cocoa Beach, USA, Apr. 2015, doi: 10.1109/WAMICON.2015.7120392.



- [C.41] D. Bachmann, N. Leder, M. Rösch, G. Scalari, M. Beck, H. Arthaber, J. Faist, K. Unterrainer, J. Darmo, "Broadband terahertz amplification in a heterogeneous quantum cascade structure," in *International Workshop on Optical Terahertz Science and Technology (OTST 2015)*, San Diego, CA, USA, Mar. 2015.
- [C.40] O. Huber, T. Faseth, H. Arthaber, E. Schlaffer, "Characterization of Printed Circuit Board Material & Manufacturing Technology for High Frequency Applications", in *IPC APEX EXPO 2015*, San Diego, USA, pp. 1–11, Feb. 2015.
- [C.39] N. Leder, T. Faseth, H. A. Ruotsalainen, H. Arthaber, "Characterization and Modeling of Pulse Drivers for Switch Mode Power Amplifier Measurements," in *Proc. IEEE Topical Conference on Power Amplifiers for Wireless and Radio Applications (PAWR)*, San Diego, USA, pp. 1–4, Jan. 2015, doi: 10.1109/PAWR.2015.7139213.
- [C.38] B. Pichler, N. Leder, T. Faseth, H. Arthaber, "Design of a PWM Driven Continuous Mode Class F Amplifier using Harmonic Load Pull Measurements," in *Proc. Mediterranean Microwave Symposium (MMS)*, Marrakesh, Morocco, pp. 1–3, Dec. 2014, doi: 10.1109/MMS.2014.7088942.
- [C.37] N. Leder, T. Faseth, H. A. Ruotsalainen, H. Arthaber, "Nonlinear Modeling and Model-Validation for Digital Switched Mode RF Power Amplifiers," in *Proc. Mediterranean Microwave Symposium (MMS)*, Marrakesh, Morocco, pp. 73, Dec. 2014, doi: 10.1109/MMS.2014.7088934.
- [C.36] B. Haindl, J. Meser, S. Müller, H. Arthaber, T. Faseth, M. Zaisberger, "LDACS1 Conformance and Compatibility Assessment," in *33rd Digital Avionics Systems Conference Proc.*, Colorado Springs, USA, pp. 5-9, Oct. 2014, doi: 10.1109/DASC.2014.6979447.
- [C.35] D. Bachmann, M. Krall, M. Rösch, G. Scalari, N. Leder, H. Arthaber, M. Beck, J. Faist, K. Unterrainer, J. Darmo, "Towards a broadband metal-metal terahertz quantum cascade laser amplifier," in *Technical Digest International Quantum Cascade Lasers School & Workshop (IQCLSW 2014)*, Policoro, Italy, Sept. 2014, ISBN 978-1-4799-3454-6.
- [C.34] H. A. Ruotsalainen, N. Leder, H. Arthaber, G. Magerl, "Behavioral modeling of digital transmitters with time delay neural networks," in *Proc. IEEE International Microwave Symposium 2014 (IMS)*, Tampa Bay, USA, pp. 1–4, June 2014, doi: 10.1109/MWSYM.2014.6848253.
- [C.33] N. Leder, H. Arthaber, H. A. Ruotsalainen, "Characterization and Optimization of Pulse Drivers for Switched Mode Power Amplifier Measurements," in *Integrated Non-linear Microwave and Millimetre-wave Circuits Workshop 2014, INMMIC*, Leuven, Belgium, pp. 1-3, Apr. 2014, doi: 10.1109/INMMIC.2014.6815107.
- [C.32] P. Gentner, H. Arthaber, A. L. Scholz, C. F. Mecklenbräuker, "Passive MEMS Antenna Structures for an Hybrid UHF/UWB RFID Tag," in *2014 8th European Conference on Antennas and Propagation (EuCAP)*, The Hague, The Netherlands, pp. 3643–3646, Apr. 2014, doi: 10.1109/EuCAP.2014.6902619.
- [C.31] H. A. Ruotsalainen, H. Arthaber, G. Magerl, "Quantization Noise Cancellation Scheme for Digital Quadrature RF Pulse Encoding," in *IEEE MTT-S International Microwave Symposium Digest*, Seattle, USA, pp. 1–4, July 2013, doi: 10.1109/MWSYM.2013.6697367.
- [C.30] H. A. Ruotsalainen, H. Arthaber, "Evaluation of Quadrature PWM Modulator Performance for Digital Wideband Transmitters," in *Proc. 42nd European Microwave Conference (EuMC)*, Amsterdam, The Netherlands, pp. 1308–1311, Oct./Nov. 2012, ISBN 978-2-87487-027-9.
- [C.29] S. Diernberger, J. Freudenthaler, H. Prossinger, H.-P. Bantleon, H. Arthaber, "Tongue impact on a midpalatal device in Children," in *88th Congress of the European Orthodontic Society*, Santiago de Compostela, Spain, June 2012.
- [C.28] M. Winkler, T. Faseth, J. Steininger, H. Arthaber, "Implementation of a receiver for an EPC tag emulator for performance evaluation," in *Proc. 41st European Microwave Conference (EuMC)*, Manchester, United Kingdom, pp. 119–122, Oct. 2011, ISBN 978-1-61284-235-6.
- [C.27] T. Faseth, M. Winkler, H. Arthaber, G. Magerl, "The influence of multipath propagation on phase-based narrowband positioning principles in UHF RFID," in *IEEE Topical Conference on Antennas and Propagation in Wireless Communications (APWC)*, Torino, Italy, pp. 1144–1147, Sept. 2011, doi: 10.1109/APWC.2011.6046829.
- [C.26] P. Gentner, M. Wiessflecker, H. Arthaber, A. L. Scholz, C. F. Mecklenbräuker, "Measured Wideband Near-field Characteristics of an UWB RFID Tag with On-Chip Antenna," in *Proc. IEEE International Conference on Ultra-Wideband*, Bologna, Italy, pp. 479-483, Sept. 2011, doi: 10.1109/ICUWB.2011.6058890.

- [C.25] M. Winkler, T. Faseth, H. Arthaber, G. Magerl, "An UHF RFID Tag Emulator for Precise Emulation of the Physical Layer," in *Proc. 40th European Microwave Conference 2010*, Paris, France, pp. 1750–1753, Sept. 2010, ISBN 978-1-4244-7232-1.
- [C.24] M. Winkler, T. Faseth, H. Arthaber, "Implementation of an EPC Tag Emulator for Reproduction of Worst Case Scenarios," in *Workshop Proceedings Third International EURASIP Workshop on RFID Technology*, Cartagena, Spain, pp. 70–73, Sept. 2010, ISBN 978-84-96997-47-9.
- [C.23] T. Faseth, M. Winkler, C. Schuberth, H. Arthaber, G. Magerl, "Design and Implementation of a Wireless Link Coupled Channel Emulator for DSRC Wireless Systems," in *Proc. IEEE International Microwave Symposium 2010*, Anaheim, California, USA, pp. 1632–1635, May 2010, doi: 10.1109/MWSYM.2010.5517792.
- [C.22] M. E. Gadringer, T. Faseth, C. Schuberth, H. Arthaber, G. Magerl, "Broadband Baseband Amplifier for a Direct Conversion Measurement Receiver," in *Tagungsband zur Informationstagung Mikroelektronik 10*, Vienna, Austria, pp. 203–207, Apr. 2010, ISBN 978-3-85133-055-7.
- [C.21] C. Schuberth, P. Singerl, H. Arthaber, M. Gadringer, G. Magerl, "Design of a Current Mode Class-D RF Amplifier Using Load Pull Techniques," in *Proc. IEEE International Microwave Symposium 2009*, Boston, USA, pp. 1521–1524, June 2009, doi: 10.1109/MWSYM.2009.5165998.
- [C.20] H. Arthaber, C. Schuberth, "A UHF RFID Channel Emulator Hardware for Playback of Measured Link-Scenarios," in *Proc. IEEE International RFID Conference 2009*, Orlando, USA, pp. 34–41, Apr. 2009, doi: 10.1109/RFID.2009.4911206.
- [C.19] A. Adalan, H. Arthaber, C. Mecklenbräuker, "Through-wall Human Respiration Detection with IEEE 802.15.4a Compliant Pulses," in *Proc. 4th IEEE UWB Forum Sensing Communications*, Vienna, Austria, 13 p, Apr. 2009.
- [C.18] H. Arthaber, C. Schuberth, "A Channel Emulator for UHF RFID Systems," in *Proc. IEEE Radio and Wireless Conference 2009*, San Diego, California, USA, pp. 518–521, Jan. 2009, doi: 10.1109/RWS.2009.4957402.
- [C.17] H. Arthaber, C. Schuberth, "An 868/915 MHz UHF RFID Channel Emulator for the Evaluation of Tag/Reader/System-Performance," in *Tagungsband zur Informationstagung Mikroelektronik 08*, Vienna, Austria, pp. 289–295, Oct. 2008, ISBN 978-3-85133-049-6.
- [C.16] A. Adalan, H. Arthaber, "A Modular RFID Test-Bed with Active RX/TX-Decoupling," in *Tagungsband zur Informationstagung Mikroelektronik 08*, Vienna, Austria, pp. 263–268, Oct. 2008, ISBN 978-3-85133-049-6.
- [C.15] S. Diernberger, H. Arthaber, J. Freudenthaler, H.-P. Bantleon, "Tongue Force during Swallowing: A Reliability Study," in *Proc. 84th European Orthodontic Congress*, Lisbon, Portugal, June 2008.
- [C.14] D. D. Silveira, H. Arthaber, P. L. Gilabert, G. Magerl, E. Bertran, "Application of Optimal Delays Selection on Parallel Cascade Hammerstein Models for the Prediction of RF-Power Amplifier Behavior," in *Asia-Pacific Microwave Conference (APMC-06) Proceedings*, Yokohama, Japan, pp. 283–286, Dec. 2006, doi: 10.1109/APMC.2006.4429423.
- [C.13] M. Mayer, H. Arthaber, G. Magerl, D. Köther, J. Lees, J. Benedikt, P. J. Tasker, "Advanced Load Pull Systems," in *IEE Workshop on 'High Efficiency Power Amplifier Design for Next Generation Wireless Applications'*, Cambridge, United Kingdom, pp. 27–33, May 2006, doi: 10.1049/ic:20060002.
- [C.12] C. Schuberth, H. Arthaber, M. Mayer, G. Magerl, R. Quay, Friedbert van Raay, "Load Pull Characterization Of GaN/AlGaN HEMTs," in *Proc. Integrated Non-linear Microwave and Millimetre-wave Circuits Workshop 2006, INMMIC*, Aveiro, Portugal, pp. 180–182, Jan. 2006, doi: 10.1109/INMMIC.2006.283541.
- [C.11] D. D. Silveira, M. Gadringer, H. Arthaber, G. Magerl, "RF-Power Amplifier Characteristics Determination using Parallel Cascade Wiener Models and Pseudo-Inverse Techniques," in *Asia Pacific Microwave Conference (APMC-05) Proceedings*, Suzhou, China, pp. 204–208, Dec. 2005, doi: 10.1109/APMC.2005.1606224.
- [C.10] D. D. Silveira, M. Gadringer, H. Arthaber, M. Mayer, G. Magerl, "Modeling, Analysis and Classification of a PA based on Identified Volterra Kernels," in *European Microwave Week 2005 Conference Proceedings*, Paris, France, pp. 405–408, Oct. 2005, ISBN 2-9600551-0-1.
- [C.9] E. Aschbacher, H. Arthaber, M. Rupp, "A fast Algorithm for Digital Pre-Distortion of Nonlinear Power Amplifiers," in *Proc. 13th European Signal Processing Conference EUSIPCO*, Antalya, Turkey, Sept. 2005, ISBN 978-160-4238-21-1.



- [C.8] H. Arthaber, M. L. Mayer, G. Magerl, "Dynamic Load Line Measurement of an Actively Terminated Harmonic Controlled Amplifier," in *Integrated Non-linear Microwave and Millimetre-wave Circuits Workshop 2004*, Rome, Italy, pp. 35–38, Nov. 2004, ISBN: 88-88748-34-2.
- [C.7] M. L. Mayer, H. Arthaber, M. E. Gadringer, "Linearization Techniques," in *Proc. IEEE Compound Semiconductor IC Symposium 2004*, Monterey, USA, pp. 1–76, Oct. 2004.
- [C.6] H. Arthaber, M. L. Mayer, G. Magerl, "A Broadband Active Harmonic Load-Pull Setup with a Modulated Generator as Active Load," in *Proc. European Microwave Conference 2004*, Amsterdam, Netherlands, pp. 685–688, Oct. 2004, ISBN: 1-58053-994-7.
- [C.5] H. Arthaber, "In-situ Messung von Strom- und Spannungsverläufen in Mikrowellentransistoren," in *XVIII. Messtechnisches Symposium des Arbeitskreises der Hochschullehrer für Messtechnik e.V.*, Freiburg, Germany, pp. 87–103, Oct. 2004, ISBN: 3-8322-3190-0.
- [C.4] M. E. Gadringer, H. Arthaber, G. Magerl, "Feedforward amplifier using power sensors for the loop balancing," in *IEEE Proceedings 33<sup>rd</sup> European Microwave Conference 2003*, Munich, Germany, pp. 1223–1226, Oct. 2003, doi: 10.1109/EUMA.2003.340800.
- [C.3] M. E. Gadringer, H. Arthaber, G. Magerl, "Loop controller for a feedforward amplifier minimizing the measured power signal," in *Proc. IEEE Radio and Wireless Conference 2003*, Boston, Massachusetts, USA, pp. 281–284, Aug. 2003, doi: 10.1109/RAWCON.2003.1227947.
- [C.2] F. Schlögl, H. Zimmermann, H. Dietrich, H. Arthaber: "Operational amplifier with bulk regulator for extended input-voltage range in digital 120nm CMOS Technology," in *Austrochip Tagungsband 2002*, Graz, Austria, pp. 83–86, April 2002.
- [C.1] H. Arthaber, A. F. Molisch, E. Bonek, J. S. Hammerschmidt, "Diversity techniques and spatial preprocessing for existing GSM mobile terminals," in *Proc. International Conference on Telecommunications 2000 (ICT 2000)*, Acapulco, Mexico, pp. 1045–1050, May 2000, ISBN: 968-36-7763-0.

#### Invited Talks

- [I.14] H. Arthaber, "Spread-Spectrum based Ranging/Localization of UHF RFID Tags," in *Microwave and Radio Electronics Week (MAREW) 2021*, Brno, Czech Republic (virtual conference), pp. 1–37, April 2021.
- [I.13] H. Arthaber, F. Galler, S. Grebien, K. Witrisal, „Spread Spectrum based Localization of UHF RFID Tags," in *Proc. WMI-5 Workshop on Digital Signal Processing for Radio Frequency Identification. IEEE International Microwave Symposium 2019*, Boston, USA, pp. 1–38, June 2019.
- [I.12] H. Arthaber, K. Witrisal, "Ranging and Positioning of UHF RFID Tags," in *RAIN Alliance Meeting*, Leibnitz, Austria, pp. 1–26, Feb. 2016
- [I.11] H. Arthaber, T. Faseth, M. Winkler, "Emulation of the Radio-Link and the Transponder in UHF-based Electronic Toll Collection Systems," in *Informationstechnisches Kolloquium "Funknetze für die Mobilität der Zukunft"*, Vienna, Austria, pp. 1–49, May 2011.
- [I.10] H. Arthaber, "Active Load-Pull Using Broadband Signals," in *Proc. WHMO4 Advanced Non-Linear Characterization of RF and Microwave Components (Workshop European Microwave Conference)*, Rome, Italy, Sept. 2009.
- [I.9] H. Arthaber, "Load/Source Pulling", Johannes Kepler University, Linz, Austria, March 2009
- [I.8] H. Arthaber, C. Schuberth, G. Magerl, "A low cost resonant tuner assembly for automatic harmonic load-pull measurements," in *Proc. Target Days (TARGET)–2007*, Monte Porzio Catone, Italy, pp. 73–78, Dec. 2007, ISBN 978-88-548-1486-8.
- [I.7] H. Arthaber, "Broadband Source and Load Pulling Technique," in *Europ. Microwave Week 2007, shortcourse Notes, SCM1: RF Device Characterisation (TARGET)*, Munich, Germany, pp. 127–153, Oct. 2007.
- [I.6] M. Mayer, H. Arthaber, G. Magerl, D. Köther, J. Lees, J. Benedikt, P. J. Tasker, "Advances in Load Pulling," in *TARGET Days 2006 Book of Proceedings*, Frascati, Italy, pp. 37–40, Oct. 2006, ISBN 3-902477-07-5.
- [I.5] H. Arthaber, "RF Power Amplifier Implementation Issues," in *TARGET Summer School on Linear Power Amplifier Design & Wireless Systems*, Castelldefels, Spain, July 2006, ISBN 978-84-611-9755-2.

- [I.4] M. Mayer, H. Arthaber, G. Magerl, D. Barataud, J.-P. Teyssier, B. Bunz, G. Kompa, F. Verbeyst, M. Vanden Bossche, "Active Load-Pull Measurements," in *Proc. WSGAAS01 Black Box Modelling based on Vectorial Large Signal Network Analysis (Workshop European Microwave Week)*, Paris, France, pp. 53–85, Oct. 2005.
- [I.3] M. Mayer, H. Arthaber, G. Magerl, D. Barataud, J.-P. Teyssier, B. Bunz, G. Kompa, F. Verbeyst, M. Vanden Bossche, "Advances in Active Load-Pull Systems," in *IMS 2005 Workshop and Tutorial Notes (IEEE MTT-S International Microwave Symposium)*, Long Beach, USA, June 2005.
- [I.2] H. Arthaber, "Source and Load Pulling," in *TARGET Winter School on Device Characterisation and Modelling*, Vienna, Austria, pp. 1–64, Mar. 2005.
- [I.1] H. Arthaber, G. Magerl, "Load Pull Systems," in *EEEF/COM Workshop*, Ulm, Germany, pp. 1-25, May 2004.

## Patents

### Granted Patents

- [P.3] H. Arthaber et al, "Method for access control," EP2584541 B1, granted Aug. 2015.
- [P.2] H. Arthaber, "Method and system for locating objects," US9471820 B2, granted Oct. 2016, AT511750 B1, granted June 2013.
- [P.1] H. Arthaber, "Method and Apparatus for Measuring Signal Phase Shifts," EP2261686 B1, granted Dec. 2012; US8335247 B2, granted Dec. 2012.

### Patent Applications

- [PA.5] H. Arthaber, "Method and apparatus to produce a wideband RF signal," Austrian patent application A50672/2019 and EP4005096A1/WO2021013817A1/US20220247446A1, filed July 2019 and July 2021.
- [PA.4] H. Arthaber et al, "Method and Apparatus for estimating the projection on a reference plane of the direction of extension of the fibres of a portion of a wooden plank," ITBZ20130037 A1, EP2829876 A1, filed July 2013 and July 2014.
- [PA.3] H. Arthaber et al, "Access control device with a capacitive data communication module, the module comprising a RFID microchip or a radio receiver microchip," AT512336 A1, EP2608159 A1, filed Dec. 2011 and Dec. 2012.
- [PA.2] H. Arthaber et al, "Method for access control," AT512076 A1, EP2584540 A2, filed 18. 10. 2011 and 16. 10. 2012; derived registered design ("Gebrauchsmusteranmeldung") GM 40/2013, filed 2013.
- [PA.1] H. Arthaber, "Method and system for locating objects," EP2739989 A1, WO2013017596 A1, filed July 2012.

## Public Outreach

- [O.14] H. Arthaber, „MP3-Box (Selfmade MP3-Player),“ in *Vienna Daughters' Day, TU Wien*, April 2024.
- [O.13] H. Arthaber, „Selbstbau MP3-Player (Selfmade MP3-Player),“ in *Bring Your Kids Day, TU Wien*, Oct 2024.
- [O.12] H. Arthaber, „Wirksamkeit Strahlenabweisender Gesundheitswäsche,“ TV docu, in *ATV Die Reportage - Das Geschäft mit der Geburt (TV Station: ATV)*, 3m:10s, 22.9.2023.
- [O.11] H. Arthaber, H. Voraberger, „Neuer Adapter für Leiterplatten hilft beim Stromsparen,“ futurezone.at technology news, interview, 10.2.2020, <https://futurezone.at/science/neuer-adapter-fuer-leiterplatten-hilft-beim-stromsparen/400748184> & „Stromsparende Elektronik im Kleinformat“, *Kurier*, p. 7, 10.2.2020.
- [O.10] H. Arthaber, „Verlängerung der Reichweite von Funkautoschlüsseln,“ TV docu, in *P.M. Wissen (TV station: ServusTV)*, 4m:30s, 9.1.2019.
- [O.9] H. Arthaber, „Microwave Engineering @ TU Wien,“ in *Individual Tours for Small Groups, TU Wien, Vienna*, years 2012–ongoing.
- [O.8] H. Arthaber, N. Leder, „Mikrowellentechnik (Microwave Engineering),“ in *Meet the Inner Circle – Presentations, Open Day, TU Wien, Vienna*, years 2014–2017.
- [O.7] H. Arthaber, „RFID Real-Time Localization for Flexible Production Environments (REFlex),“ in *IKT der Zukunft und ICT in Horizon 2020 – Presentation of Reference Projects, Austrian Research Promotion Agency (FFG), Vienna*, Nov. 2015.
- [O.6] H. Arthaber, F. Galler, „UHF RFID Realtime Localization,“ in *Demonstrator at Trade Show Booth, SPS IPC Drives, Nuremburg, Germany*, Nov. 2015.
- [O.5] H. Arthaber, „Diploma Project,“ in *Diploma Projects with Secondary Technical School, HTL Donaustadt, Vienna*, years 2013–2015.
- [O.4] H. Arthaber, „Elektrosmog (Electromagnetic Pollution),“ in *Hands-on Measurements and Demonstrations, Open Day, TU Wien, Vienna*, years 2005–2012.
- [O.3] A. Adalan, H. Arthaber, „Radiobasteln (Building Your Own Radio),“ in *FIT – Frauen in die Technik (Women in Technology), Hands-On Workshop, TU Wien, Vienna*, Feb. 2008.
- [O.2] H. Arthaber, „Photonic Crystals at 26.5–40 GHz,“ in *Design of a Demonstration/Experiment, Faculty of Physics, TU Wien, Vienna*, 2008.
- [O.1] H. Arthaber, W. Ehrlich-Schupita, „Was verbirgt sich hinter dem elektromagentischen Spektrum? (What is the so-called electromagnetic spectrum?),“ in *Hands-on Measurements and Demonstrations, Yo! Einstein, TU Wien, Vienna*, years 2005–2006.