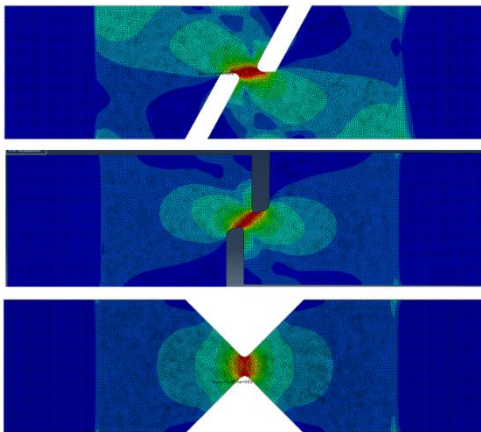


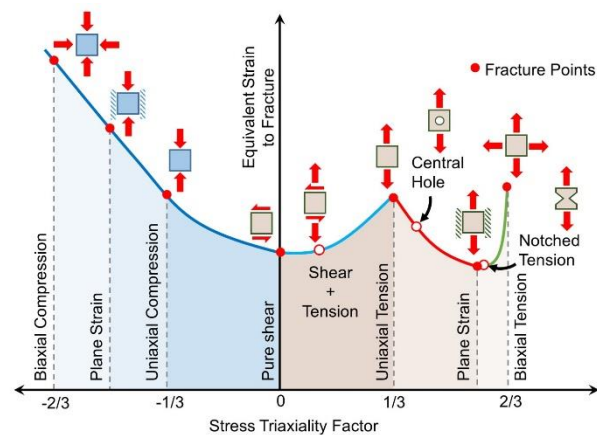
Announcement Master's Thesis

Exploring a Correlation between Basic Material Properties and Fracture Behavior

Structural materials are frequently subjected to multiaxial loading conditions, possibly leading to ductile fracture. Accurately detecting fracture locations within intricate structures and estimating corresponding failure loads is paramount for designers and engineers. The mathematical models used to estimate this complex fracture behavior are based on data from expensive experiments. In this study, we aim to develop a model that represents the relationship between basic material properties of ductile materials and multiaxial fracture behavior, eliminating the need for experiments.



Results in FE Simulations



Triaxiality Locus

What is expected to be done in this study?

- Enlarging our literature review to find triaxiality locus for different ductile materials
- Development of a mathematical model for a relationship between basic parameters and fracture behavior
- Performing FE simulations in ABAQUS CAE for validations

Your profile:

- Good knowledge of the basics of mechanics and elasticity / plasticity
- Good programming skills in ABAQUS CAE and Matlab or having a motivation to learn them
- Independence, a high level of motivation and problem-solving skills

Financial support will be provided within the study!

If you are interested in working on this master's thesis with us and would like to join our team, please contact us by sending a short email.

Vienna, September 19, 2023

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