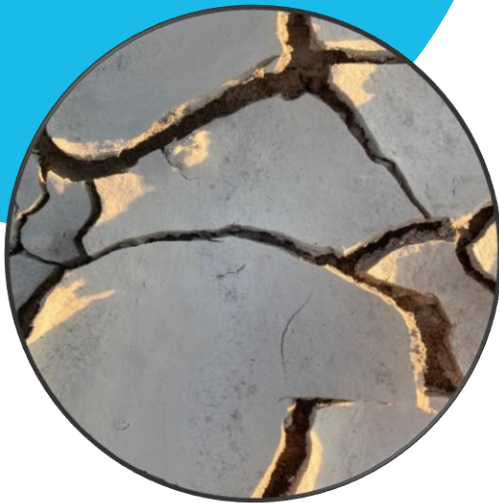




Universität Stuttgart
Institut für Mechanik (Bauwesen)
Lehrstuhl für Kontinuumsmechanik
Prof. Dr.-Ing. H. Steeb

Master thesis

Modelling of evaporation-driven fracturing processes in porous media



The following master's thesis is available at the Chair of Continuum Mechanics at the Institute of Applied Mechanics (CE).

Evaporation-driven fractures, also known as desiccation fractures, may occur in partially saturated soil materials. Generally, the coupled processes can be conveniently described on a macroscopic scale using the continuum-mechanical framework of the Theory of Porous Media (TPM) with an embedded phase-field approach to fracture.

Within the modelling and simulation environment at our department, this thesis aims to set up models and numerical simulations to study desiccation processes in porous materials.

Tasks:

- Literature research
- Numerical simulation and evaluation of realistic boundary value problems
- Discussion and documentation of the results

Requirements:

- Good knowledge of continuum mechanics of multi-phasic materials
- Good knowledge of numerical methods
- Basic programming skills

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