Call for BSc/MSc Thesis

Applied Geology
University of Halle-Wittenberg

Characterization of Fracture Networks

About

The characterization of the parameters of discrete fracture networks (DFNs) is a key topic for the planning of enhanced geothermal systems. A few methods to infer the properties of DFNs and their uncertainty were developed and implemented. Based on various synthetic test cases, i.e. with a known exact solution, the methods should be further testified. The influence of individual parameters is to be elaborated in more detail. The results of the thesis will be considered for a best practice recommendation when dealing with actual measured data.

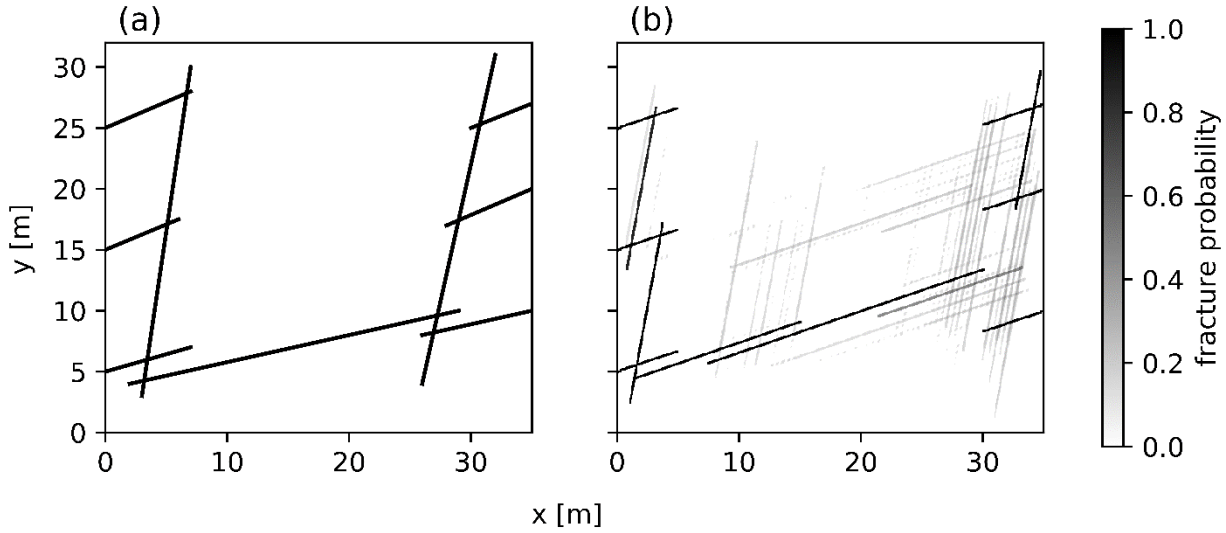

Figure 1: 2D synthetic test case (a) and inversion results presented as fracture probability map (b)

Tasks

- Brief literature review on fracture networks and inversion methods
- Definition of suitable synthetic test cases to check different inversion methods
- Identification of the influence of various parameters on the inversion results

Requirements

- First experience with programming languages (e.g. Python, Matlab)
- Enthusiasm for working in the field of fracture networks

Benefits

- Close supervision to get started with the topics
- Training of advanced model calibration methods
- Contribution to project in collaboration with RWTH Aachen

Supervisors

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