**Slip tendency and fault reactivation potential in geothermal reservoir**

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**Abstract**

**Slip tendency analysis is a method to assess the stress states and fault reactivation potential. The reservoir rocks, composed of Lower Permian sandstones and volcanic rocks, were stimulated by hydraulic fracturing. But large-scale fluid injection as applied in geothermal reservoirs can also induce seismicity and fault reactivation depending on the reservoir geomechanics and stress regime. A surprisingly low microseismic activity was recorded with moment magnitudes MW ranging from -1.0 to -1.8. In this study from the Northeast German Basin, the authors applied the slip tendency method to characterize fault slip likelihood and slip directions in a geothermal reservoir in which a transitional stress regime is associated with both normal and strike-slip faulting. This study demonstrates that the slip tendency analysis, provides an appropriate method to investigate, characterize, and understand the faulting behavior in Enhanced Geothermal Systems.**

**References**

Moeck I., Kwiatek G. and Zimmermann G., 2009. Slip tendency analysis,

fault reactivation potential and induced seismicity in a deep

geothermal reservoir. Journal of Structural Geology, 31, 1174-1182.

Moeck I., Backers T., 2011. Fault reactivation potential as a critical factor

during reservoir stimulation. First Break, 29, 67-74.

Morris, A., Ferrill, D.A., Henderson, D.B., 1996. Slip tendency analysis and

fault reactivation. Geology 24 (3), 275–278.