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**Paleostress reconstruction based on minor faults in core**

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**Abstract**

The reconstruction of paleostress can give a crucial information to assess the potential reactivation of a fault system in reservoir/cap rock system. Where it is not easy to collect fault slip data required for stress inversion, the kinematic analysis of faults in drill core can be a critical method to verify the paleo- and neo-tectonic strain/stress regimes. A simple method for the inversion of paleostress based on minor faults from the core is suggested here. Homogeneous simple shear is assumed as the boundary condition at the time of faulting, and bedding is regarded as a reference fabric in the investigated core interval. The orientations of planar structures such as fault plane and bedding are measured by the angle of dip and down-dip direction of the plane at arbitrary position. Rake is used to record both the orientation of fault striation and shear sense on a fault plane. The proposed method is tested in a vertically drilled core, located in a pilot site for CO<sub>2</sub> geologic sequestration in a Tertiary Basin, SE Korea. The inversion of oriented fault slip data based on the Angelier's direct method indicates that the NW-SE striking main fault was active under the NNE-SSW compression stress, which is consistent with the regional tectonics of this area around the period of Tertiary/Quaternary boundary.

