Improved resolution of the multiple inverse method by eliminating erroneous solutions generated by the borehole logging

Makoto Otsubo[1]; Yasuhiro Yamada[2]; Atsushi Yamaji[3]

[1] IGG, GSJ/AIST; [2] Civ. Earth Res. Eng., Kyoto Univ.; [3] Div. Earth Planet. Sci., Kyoto Univ.

We describes improved resolution of the multiple inverse method by eliminating erroneous solutions generated by the borehole logging. Faults or shear fractures are sometimes observed in borehole cores. Fault-slip data from those samples can be used to understand (paleo) stress states at depths. The borehole logging generates erroneous solutions for calculation of the inversion. The regularity/singularity test of the subsets taken from the fault-slip data is the key for this purpose. The resolution and accuracy of the method are improved by eliminating erroneous stresses or artifacts that were yielded by the method. The performances of the method are demonstrated with a variety of artificial datasets.