

Kyoto methods for stress tensor inversion

Atsushi Yamaji[1]

[1] Div. Earth Planet. Sci., Kyoto Univ.

<http://www.kueps.kyoto-u.ac.jp/~yamaji/>

It is a conventional technique to apply mathematical inversion to determine stresses optimal for fault-slip data. However, it is difficult for the conventional method to separate stresses from those faults that were activated by different stresses. We have developed numerical techniques to solve the problem. The software of the techniques is to be open for the public. The aim of this poster presentation is to explain the software. The techniques were developed to process data from mesoscale faults found on outcrops, however, they have been already applied to shear fractures in core samples, also.

The necessary data are the orientation of fault planes, slip directions, and the sense of faulting. Computational complexity was a problem for the Multi-inverse method, however, the latest version of the software can complete computation in a time short enough for practical uses. The Ginkgo Method is useful if the number of fault is small. The method shows the possible stress orientations and stress ratios compatible for given data.