

Analysis of Stress and Fault Orientation in Double Subduction Zone of Maluku Sea Region by Using Iterative Joint Inversion Method

Iterative Joint Inversion is one of the methods which used to determine stress orientation based on earthquake focal mechanism data. Stress orientation determination of the earthquake events is very useful for disaster mitigation field. This research used Iterative Joint Inversion method to determine stress orientation in double subduction zone of Maluku Sea region. The earthquake focal mechanism data was retrieved from The Global CMT (Centroid Moment Tensor) with range of time from January 1, 2011 till December 31, 2015, and range of magnitude from Mw 4 till Mw 7. The results of this research are values of Friction, Shape Ratio and azimuth/plunge of each axis, respectively. The values of Friction are 0.6 and Shape Ratio is 0.67, respectively. While the values of azimuth/plunge are as follow: the T-axis is $302.24^\circ/6.52^\circ$, the B-axis is $32.81^\circ/4.94^\circ$, and the P-axis is $159.68^\circ/81.80^\circ$, respectively. Based on this result, it can be concluded that stress orientation in double subduction zone of Maluku Sea Region is categorized as the Normal Fault.

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