

SCG061-P05

会場:コンベンションホール

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断層スリップデータの適合度にもとづいた応力逆解析の段階褶曲テスト Incremental fold test for stress tensor inversion based on fitness evaluation to fault-slip data

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We present a method of incremental fold test for the paleostress inversion of fault-slip data obtained from folded sedimentary rock, which provides not only the orientations of the three principal stress axes and the stress ratio, but also the relative timing of folding and faulting. The method is based on the stepwise backtilting of strata that was tilted before, during, or after fault activity. At each step, the rotated fault-slip data are analyzed by a stress inversion technique, based on the Hough transform. The inversion technique calculates the degree of fitness of all possible stresses to the fault data and detects the optimal fitness. The peak values of fitness are compared among the various backtilting steps to find the maximum value. The stress and the backtilting step that yield the maximum fitness are selected as the optimal solution. To assess the validity of the method, we applied it to artificial fault-slip datasets generated with hypothetical histories of folding and faulting and with known paleostresses. The proposed method succeeded in determining the supposed stresses and the relative ages of folding and faulting.

キーワード:小断層,応力逆解析,褶曲テスト Keywords: minor fault, stress inversion, fold test