



## **1976 Tanshan earthquake and its effect to the deformation and movement of northeast china blocks**

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Using the method of discontinue deformation analyses (DDA+FEM), simulated the dynamics process of 1976 Tanshan earthquake which occurred in the constrained circumstance of Northeast China blocks, studied the deformation movement of northeast china blocks especial the movement of Ordos block as well as stresses variation characteristics of block boundary faults.

1976 Tanshan earthquake composed by three events: major fracture of NNE direction, fracture of NE which near the NE end of the major fracture and a fracture of NW which at the SE of the major fracture. Comparing the others results, the results of this model given a more responsible configuration of aftershocks. We give here the results of the stress distribution of earthquake stress release, the contour of maximum shear stress, the slip deformation of the blocks that near the earthquake, the time variation of slip of the earthquake faults, the maximum slip distance as well as earthquake stress drop. The occurrence of Tanshan earthquake has different influence to nearby blocks and blocks boundary faults, these blocks have different movement and deformation. Ordos block seems having small scale anti-clock rotation and deformation. Northeast of Ordos block which contacts with Taihanshan, Yanshan and Yinhan blocks has larger deformation. Tanshan earthquake also changed the stress state of boundary faults of northeaster china blocks. The shear stress increasing and normal stress decreasing in the Zhangjiakou —Penglai NW fractures and boundary faults of Ordos block will increase the faults earthquake risk. This result is in accord with a serial  $M \geq 6$  earthquake, after Tangshan earthquake, of north part of the Ordos black.