Study on the crustal strength by means of numerical simulation

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In order to understand the uplift and subsidence of crust, numerical simulation model is being developed that can describe the coupling between the crust and mantle under the effect of gravity. Crust is composed of the brittle region, where the strength increases with depth, and the ductile region, where the strength weakens with temperature. When you estimate the strength of the Tohoku-Japan cross-section using the friction coefficient, used in the well-known Byerlee's formula, there exists the area whose strength is more than several hundred MPa. The frictional strength, estimated from the thermal generation of the gigantic fault, is the order of 20MPa. Thus, we studied the distribution of crustal stress by means of the parametric study on the frictional coefficient.