Surface deformations during the earthquake cycle for a layered visco-elastic crust

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Prediction of the vertical deformation of the surface near the faults may help in evaluation of the earthquake hazard. We examine using finite element method nonlinear effects during crustal block movements. The numerical models employ finite strains and the generalised linear viscoelastic constitutive relations.

In particular, we examine predicted surface displacements of layered crustal blocks under loading that simulates the earthquake cycle considering different relaxation times of the materials.