



Viscoelastic interseismic deformation model for the central Andes

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A two-dimensional viscoelastic finite-element model (FEM) of the Andean Subduction zone is constructed to study the interseismic deformation observed by GPS between 1994 and 1997. The model consists of elastic oceanic and continental plates coupled to an underlying Maxwell viscoelastic half-space. FEM predictions of the transient deformation are constrained by GPS observations from 23 stations of the South America Geodynamic Activities (SAGA) network. The results are compared with those of a purely elastic model to investigate the effect of viscoelastic rheology and material heterogeneities on model parameters.