

Numerical simulation of displacement, strain and stress fields associated with the 1944 Tonankai and the 1946 Nankai earthquakes

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I simulated postseismic displacement, strain and stress fields caused by the 1944 Tonankai and the 1946 Nankai earthquakes, using a three-dimensional viscoelastic finite element method. Taking into account a three-dimensional configuration of the Philippine Sea plate, I calculated elastic and viscoelastic responses, assigning spatial distributions of coseismic slip and interplate coupling. I found that there are marked regional differences on postseismic displacements, and the calculated strain field agrees well with the observation. There is also a possibility that the 1945 Mikawa earthquake, dramatic decrease in seismicity in the Wakayama region, and increase of shallow earthquakes with E-W oriented P-axis in the eastern part of Shikoku were caused by the two interplate events.