

# A comprehensive model of deformation process in the Nagamachi-Rifu Fault Zone

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As a part of 'the Comprehensive Research on Slip and Flow Processes in and below the Seismogenic Region' various surveys and investigations have been conducted around the Nagamachi-Rifu Fault Zone, such as a crustal movement observation with a dense GPS array, resistivity structure surveys with the magnetotelluric method, reflection and refraction seismic surveys, seismic observation, receiver function analyses. We tried to model these results with the finite element method.

A two-dimensional finite element model was constructed to simulate a cross section across the Nagamachi-Rifu Fault Zone in the WN-SE direction. We assumed several examples of the heterogeneity in the crust according to the results obtained by the various surveys, to explain the deformation velocities observed by the dense GPS network and leveling surveys. We found that it is difficult to simulate the observed deformation assuming the heterogeneity in the upper crust.