

Vertical crustal deformation in Boso Peninsula from 1966 to 2001 deduced from leveling and sea level data

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Leveling data and sea level data for the period from 1966 to 2001 in Boso Peninsula, Japan, were investigated to characterize unsteady vertical deformation. We estimated the steady vertical deformation rate at each GEONET GNSS station using the daily coordinates for the periods from January 1997 to January 2011 avoiding the period of the large earthquakes.

First-order leveling surveys have been conducted repeatedly every one or several years since 1966 in Boso Peninsula. We determined crustal displacements by comparing leveling data from successive surveys. We subtracted subduction-related steady component derived by the GNSS from the distribution of vertical crustal displacements during periods between leveling surveys. If any episodic events have not occurred, they should show little spatial variation around zero vertical displacement. Unsteady vertical deformation was not seen in the period from 1966 to 2001 except the land subsidence by pumping industrial water and natural gas brine.

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