Isobaths of the Philippine Sea slab upper surface in the source region of the expected Tokai earthquake

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We reexamined the isobaths of the upper surface of the Philippine Sea plate (PHS) subducted westward at the Suruga trough beneath the eastern part of the Tokai district, where the great interplate Tokai earthquake is anticipated to occur in the near future. We attach importance to smooth continuation of the slab upper surface from the sea-bottom topography on the east of the Suruga trough axis, because there is no observation indicating strong bending of the PHS lithosphere concentrated around the trough axis. Based on hypocenters during the period from Oct. 1997 through Oct. 2002 from the integrated hypocenter database prepared by the Japan Meteorological Agency, we delineated isobaths of the PHS slab much shallower than those widely-accepted so far; we regarded the so-called 'transition zone earthquakes' as slab events. At the same time the shape of the slab upper surface became laterally smooth, which is also much different from the prevailing geometry. Our result is considered to affect the assumption of the fault plane of the expected Tokai earthquake.