

Long-term slow slip events in the Bungo Channel deduced from tide gauge data

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We investigated tide gauge data since 1976 and found that long-term slow slip events (SSE) may have occurred in the Bungo Channel before the recent two events detected by the GPS. Mishouko and Misakiko stations of Ehime Prefecture are located in the area where the vertical displacement of two or three centimeters is expected by the SSE. We checked and revised the tide gauge data of these stations. After the atmospheric and annual correction, differences of daily mean sea levels were calculated. Next, moving median value for 1 year were calculated on differences of daily mean sea levels and height difference by GPS for the purpose of the removal of the short period components. Cross correlations between difference of sea levels and height difference by GPS between Uwajima and Misakiko are high at 1997 and 2003, and this shows that the difference of sea levels includes vertical displacement caused by the long-term SSE. Since the cross correlations are also high around 1978-1979, 1985 and 1991, the long-term SSE in the Bungo Channel have probably occurred in these period.