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Observation of sea-bottom crustal deformation at Kumano Bay

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Our research group has performed the observation of sea-floor crustal deformation with the system composed of the kinematic GPS positioning and the acoustic ranging at the three stations (KMN, KMS, and KME sites) beneath the Kumano Bay where the large subduction earthquake, Tonankai Earthquake, is anticipated to occur. We measured 13, 18, and 6 times at KMN, KMS, and KME sites, respectively.

The observation shows the steady horizontal displacements of (1.1+/-0.4, -2.4+/-1.0), (1.6+/-0.3, -5.5+/-0.4), (5.4+/-2.2, -6.1+/-3.1) cm/yr at KMN, KMS, and KME sites, respectively. The directions of displacement vector almost coincide with that of plate conversion at the Nankai Trough. The estimated horizontal displacements at some sites are, however, obviously larger than that of relative motion between the Philippine Sea Plate and the Amurian Plate. The error ellipsoid is extremely large at The KME site because of a lack of both observation period and the number of measurement. It is necessary to estimate more precisely based on a continued measurement.