

Motion of the Izu microplate and double plate subduction zones inferred from GPS data

Takao Tabei[1], Fumiaki Kimata[2], Jiro Segawa[3]

[1] Natural Environmental Sci., Kochi Univ., [2] Res. Center Seis. & Volcanology, School of Sci., Nagoya Univ., [3] Sch. Mar. Sci. Tech., Tokai Univ.

We determine relative motion of the Izu microplate (IMP) with respect to the Philippine Sea (PH) and the Amurian (AM) plates using GPS horizontal velocity data in southern and western Izu peninsula and at the Zenisu ridge. Along the southern margin of the Zenisu ridge, the PH/IMP boundary, N-S convergence is predicted from the calculated Euler pole and angular velocity, which is consistent with focal mechanism of N-S compression of the earthquakes occurred along this boundary. Convergence rate across the Suruga Trough, the IMP/AM boundary, decreases by 30-40% and rotates counterclockwise when we take the IMP into consideration. The IMP motion will play an important role in tectonic activity around the Izu islands.