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Five Years Geodetic GPS observation in the West of Java Island

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West of Indonesia is region of the plate boundary between the Australia plate and Sunda plate is seismically highly active. Subduction of great tectonic plates continues further south and east/southeast along the great Sunda Trench. The normal subduction below Java is characterized by the development of typical fore-arc basins while oblique subduction beneath Sumatra results in partitioning of the convergent motion into thrust and strike-slip faulting. Along the arc, the age and thickness of the lithosphere increase considerably from west to east; from 49?96 Ma below Sumatra to the west to 96?134 Ma below Java. Subduction of great tectonic plates

The activity of local fault can be inferred from six time GPS campaign observation in West Java, 2006 (December), 2007 (August), 2008 (August), 2009 (June and August) and 2010 (August) as a sinistral motion of Cimandiri fault and dextral Lembang fault control the deformation pattern in West Java. Using simple elastic half-space model we estimate geodetic slip-rate of Cimandiri fault is 6mm/yr and 3mm/yr for Lembang fault. This result also suggest that the interplate coupling is very weak or if any it only extend at very shallow portion (less than 10 km) which is very difficult to be detected by inland GPS network that located 250 km away from the trench.

Keywords: Geodetic observation, West Java, Strain Accumulation