

Current deformation in South Sumatra - Java and its implications for earthquake hazards

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The distribution of deformation in South Sumatra and Java Islands is determined from the GPS Network Operations Reference 2010-2017 (InaCORS). The GPS analysis shows that the current deformations in South Sumatra and the Java Islands are controlled by the rotation of Sunda land, the extension in the southern Sunda Strait, postseismic deformation occurred in the 2006 earthquake and the incorporation of the Indo-Australian plate and Sunda land. The results of the strain analysis show compression in the southern part of Java Island. Using an elastic dislocation model, the estimated interplate coupling in the Sunda Strait and the Java trench is about 50-80 percent. The slip deficit at this subduction interface has important implications for earthquake hazards in South Sumatra and the Java Islands.

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