Seismic Hazard of Western Indonesia

Western Indonesia Earthquakes, 1988 - February 2008

The broad red vectors represents the motion of the Australia Plate relative to the Sunda Plate during the 2004 Simeulue earthquake. High values are indicated by broad vectors. The broad red vectors diminishes to 40-50 mm/yr towards the north.

3334

Transform

Subduction

The large map shows epicenters of magnitude 5 and larger earthquakes occurring in the region from the beginning of 1988 through February 2008. Main shocks of magnitude 7 and larger and aftershocks occurring within 31 days of the main shocks are shown as black symbols. Aftershocks of magnitude 4 or greater are shown as white symbols. The epicenters were obtained from the USGS Determination of Epicenters publication of the U. S. Geological Survey. For some earthquakes, particularly those of smaller magnitude, the accuracy of the location is limited.

Rupture zones offshore western Sumatra: 1797, 1833, and 2000 - 2008

DISCUSSION

The locations of the black square symbols are the locations of the great earthquakes since 2000 and offshore Sumatra as determined in this report. The broad red vectors on the map illustrate the direction and sense of motion of the Australia Plate relative to the Sunda Plate since the early 19th century. The direction and sense of motion at 10° S, which is not shown on the map, is known with greater accuracy. The dashed lines on the map illustrate the possible source of the 2004 Simeulue earthquake. Several earthquakes produced tsunami that caused widespread damage and significant fatalities. For the same reasons, landward from 10° S, the occurrence of relatively minor shaking. The magnitude 7.3 earthquake of August 9, 2007, with an epicenter in Belitung off Java and a depth of 25 km, did not produce tsunami, but it is labeled because it was widely felt.

DATA SOURCES

NIMA and ESRI, Digital Chart of the World

NOAA GEBCO and GLOBE Elevation Models


1900 - 1999, chap. 41 of Lee, W.H.K., and others, eds.,

1988 - Feb 2008 events

Depth for 1988- Feb 2008 events

1 - 64 km

≥ 300 mm/yr

EXPLANATION

Fatal Earthquakes

Current or may contain inaccuracies and therefore should not be regarded as having official significance.