Geophysical Research Abstracts
Vol. 12, EGU2010-10808, 2010
EGU General Assembly 2010

The 26 May 2006 Yogyakarta earthquake fault observed by seismic data and satellite data based surface features

Ade Anggraini, Monika Sobiesiak, and Thomas R Walter
Deustches GeoForschungZentrum Potsdam, Germany (ade_a@gfz-potsdam.de)

The Mw 6.3 May 26, 2006 Yogyakarta Earthquake caused severe damage and claimed thousands lives in the Yogyakarta Special Province and Klaten District of Central Java Province. The nearby Opak River fault was thought to be the source of this earthquake disaster. However, no significant surface movement was observed along the fault which could confirm that this fault was really the source of the earthquake. To investigate the earthquake source and to understand the earthquake mechanism, a rapid response team of the German Task Force for Earthquake, together with the Seismological Division of Badan Meteorologi Klimatologi dan Geofisika and Gadjah Mada University in Yogyakarta, had installed a temporary seismic network of 12 short period seismometers. More than 3000 aftershocks were recorded during the 3-month campaign.

Here we present the result of several hundred processed aftershocks. We used integrated software package GIANTPitsa to pick P and S phases manually and HYPO71 to determine the hypocenters. HypoDD software was used for hypocenters relocation to obtain high precision aftershock locations. Our aftershock distribution shows a system of lineaments in southwest-northeast direction, about 10 km east to Opak River fault, at 5-18 km depth. The b-value map from the aftershocks shows that the main lineaments have relatively low b-value at the middle part which suggests this part is still under stress. We also observe several aftershock clusters cutting these lineaments in nearly perpendicular direction. To verify the interpretation of our aftershocks analysis, we will overlay it on surface feature we delineate from satellite data. Hopefully our result will give significant contribution to understand the near surface fault systems around Yogyakarta Area in order to mitigate similar earthquake hazard in the future.