Geophysical Research Abstracts, Vol. 8, 03095, 2006
SRef-ID: 1607-7962/gra/EGU06-A-03095

The MERAMEX Project- Modelling Results of Central Java, Indonesia

D. Wagner (1), W. Rabbel (1), A. Wittwer (2), H. Kopp (2), E. Flueh (2) and the Meramex Scientists

0.0.1 (1)Christian-Albrechts-Universität, Otto-Hahn-Platz 1, Kiel, Germany, (2) IFM-GEOMAR, Kiel, Germany (diana@geophysik.uni-kiel.de)

Focus of the MERAMEX project (MERapi AMphibious EXperiments) is the relation of subduction zone processes and the arc volcanism in Central Java. In 2004 combined amphibious seismological investigations including a seismometer array on- and offshore and marine refraction seismic profiles were carried out at 110˚ E.

To monitor the natural seismic activity a temporal seismological network consisting of 115 stations was installed in a dense grid around Merapi volcano in Central Java. During RV SO179 cruise seismic refraction and reflection profiles, bathymetric, gravimetric, and magnetic data was acquired. The airgun shots of the three seismic profiles (two dip lines and a coast parallel profile) were recorded both onshore and offshore.

The seismic profiles were modelled resulting in a detailed model of the forearc region and the descending oceanic plate. The final model of the coast parallel profile shows a decrease in layer thickness and seismic velocities from east to west. The layering is mainly flat except for a 30 km wide region showing an uplifted structure. In addition, the two dip lines were elongated landwards and the two-dimensional gravity response was calculated. A three dimensional model was developed due to the forward modelling results. This model is used as a starting model for a tomographic inversion of the amphibious data.

We will present the modelling results of the coast parallel profile and its linkage to Central Java. In addition, first tomographic results of the amphibious data will be shown.