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Vesuvius Volcano Area 3D Velocity and Density Model

S.Tikhotsky (1), U.Achauer (2)

(1) Physics of the Earth Institute RAS, Moscow, Russia (sat@ifz.ru), (2) University Louis Pasteur, Ecole et observatoire des sciences de la Terre, Strasbourg, France

The new 3D seismic velocity and density model has been constructed for the Vesuvius volcano subsurface area. The model is based on the TOMOVES project wide-angle seismic and gravity data. Our model is different from the previous ones (e.g. Gasparini et.al., 1998; Tondi and de Franco, 2003) in that we applied the specially developed traveltime tomography inversion method which allows to explicitly incorporate the seismic discontinuities (i.e. refraction and reflection interfaces) in the inversion process, together with the smooth velocity variations. Fully three-dimentional sequential integrated inversion was performed with the adaptive model parametrisation based on the wavelet expantion approach. Despite of the different inversion algorithm and parametrisation approach the main structures revealed by our model are in a good agreement with those previously obtained by other authors. This study was supported by the INTAS YS Fellowship Nr. 34-83-0141.