Geophysical Research Abstracts
Vol. 14, EGU2012-2555, 2012
EGU General Assembly 2012

Gravity data inversion for 3D topography of the Moho discontinuity by separation of sources in Taiwan region

Y.T. Lo and H.Y. Yen
National Central University, Taiwan (yutsunglo61@gmail.com)

Taiwan is located at a complex juncture between the Eurasian and Philippine Sea plates. The mountains in Taiwan are very young, formed as a result of the collision between an island arc system and the Asian continental margin. To separate sources of gravity field in depth, a method is suggested, based on upward and downward continuation. Both new methods are applied to isolate the contribution of the Moho interface to the total field and to find its 3D topography. At the first stage, we separate near surface and deeper sources. At the next stage, we isolate the effect of very deep sources. After subtracting this field from the total effect of deeper sources, we obtain the contribution of the Moho interface. We make inversion separately for the area. In this study, we use the detail gravity data around this area to investigate the reliable subsurface density structure. First, we combine with land and marine gravity data to obtain gravity anomaly. Second, considering the geology, tomography and other constrains, we simulate the 3D density structure. The main goal of our study is to understand the Moho topography and sediment-crustal boundary in Taiwan area. We expect that our result can consistent with previous studies.