Geophysical Research Abstracts
Vol. 16, EGU2014-7603, 2014
EGU General Assembly 2014

Slowness tomography of Pdif beneath Western Africa

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Major earthquakes (M> 6.4) in South America (near Coast of Central Chile) and South Atlantic Ocean (Scotia Sea and Sandwich Islands) routinely display conspicuous Pdif phases as recorded by the Central European and Western Mediterranean seismological networks.
The relative arrival times of Pdif at the stations of a certain network are obtained by correlating the individual traces with a template obtained using the corresponding network beam. The slowness values are derived by linear regression together with the 95% errors. A check for the presence of outliers is done using Chauvenet's criterion. Ellipticity corrections are evaluated with the standard tables. Corrections for the diffracted ray path are applied using a global 3-D model and a slightly modified version of the TauP Toolkit. The same procedure is applied to the synthetic seismograms to provide the reference slowness. Using a slowness tomographic approach, the (relative) slowness perturbation values are directly inverted to the velocity perturbations assigned to a set of trapezoidal cells located on the core-mantle boundary (CMB).
The above 95% errors are used to weight the inversion, which is solved by a Monte Carlo method. Finally, we compare our results to the P-velocity perturbations from several global 3-D models in the same CMB area beneath Western Africa.