



Determination of anisotropic properties of lithosphere and upper mantle by joint inversion of receiver function and SKS waveforms.

V. Koryagin (1), I. Aleshin (1), M. Zhizhin (2), D. Medvedev (2), D. Mishin (2), K. Kholodkov (1), and N. Artamonova (3)

(1) Schmidt Institute of Physics of the Earth RAS, Moscow, Russia (admin@ifz.ru), (2) Geophysical Center RAS, Moscow, Russia (gcras@gcras.ru), (3) Institute for Electrophysics and Electro-energetics RAS, St. Petersburg, Russia (nvartamonova@gmail.com)

In previous study waveform inversion was based on approximate methods because of time consuming in synthetic seismogramms calculation. Using parallel calculation and GRID technology allows us to get exact solution of the problem: we can perform direct calculation of cost function on uniform grid within model parameter space. Calculations were performed for both synthetic models and real data.

It is shown that application of joint inversion of SKS and receiver function requires careful analysis of consistence of different groups of data. Ignoring of possible disagreement of different groups of data can lead to significant errors in estimation of anisotropies parameters. Also determination of optimal model for non-scalar cost function and result representation techniques are discussed.