



Pareto Joint Inversion of Love and Quasi Rayleigh's waves - synthetic study

Adrian Bogacz (1), David Dalton (2), Tomasz Danek (1), Katarzyna Miernik (1), and Michael A. Slawinski (2)

(1) Faculty of Geology, Geophysics and Environmental Protection, Department of Geoinformatics and Applied Computer Science, AGH University of Science and Technology, Cracow, Poland,, (2) Faculty of Science, Department of Earth Sciences, Memorial University of Newfoundland, St. John's,

In this contribution the specific application of Pareto joint inversion in solving geophysical problem is presented. Pareto criterion combine with Particle Swarm Optimization were used to solve geophysical inverse problems for Love and Quasi Rayleigh's waves. Basic theory of forward problem calculation for chosen surface waves is described. To avoid computational problems some simplification were made. This operation allowed foster and more straightforward calculation without lost of solution generality. According to the solving scheme restrictions, considered model must have exact two layers, elastic isotropic surface layer and elastic isotropic half space with infinite thickness. The aim of the inversion is to obtain elastic parameters and model geometry using dispersion data. In calculations different case were considered, such as different number of modes for different wave types and different frequencies. Created solutions are using OpenMP standard for parallel computing, which help in reduction of computational times. The results of experimental computations are presented and commented.

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