



Joint inversion of receiver functions, surface wave dispersion and magnetotelluric data

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The combination of several datasets for joint inversion promises more stable inversion models and improved characterization of the subsurface. Previously we showed how we can use receiver functions and magnetotelluric data to construct a joint model of the lithosphere for sites on the Slave Craton. By adding fundamental mode Rayleigh wave dispersion data, we can further stabilize the inversion process and obtain absolute shear-wave velocities. Furthermore our approach is based on a genetic algorithm and gives us an indication of the compatibility of the various datasets. The information on electrical conductivity, shear wave velocity and their structural relationship allows for a better characterization of the state of the lithospheric mantle. We will show first inversion results from southern Africa that demonstrate the benefits of our approach.