

SEISMIC IMAGES OF THE CRUST-MANTLE BOUNDARY AS AN EXPRESSION OF GEODYNAMICS OF THE PRECAMBRIAN CRUST FORMATION

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Abstract. The paper is anticipated by an overview of currently discussed ideas concerning crust-mantle interface and lower crust. Comparison of their seismic images in basement of ancient cratons allows us to recognize and characterize morphostructural types of the crust-mantle interface and to correlate their features with geological structure and history. The sharp or partly diffuse nearly horizontal smooth boundaries underlie the crust formed or transformed as a result of mantle-plume events. Origination of diffuse crust-mantle interface is apparently also related to mantle-plume activity. In this case, however, magmatic melts ascend more or less freely, so that the crust is transformed only under impact of high-temperature metamorphism. The indented boundaries are formed due to lateral displacements of crustal and mantle tectonic sheets.

Keywords: crustal seismic images, crust-mantle boundary, reflection seismics, geodynamics, Precambrian.

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