

Geo-neutrinos and Earth Models

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We present earth models predicting different levels of radiogenic heating and, therefore, different geo-neutrino fluxes from the mantle. Seismic tomography reveals features in the mantle possibly correlated with radiogenic heating and causing spatial variations in the mantle geo-neutrino flux at the earth surface. An ocean-based observatory offers the greatest sensitivity to the mantle flux and potential for resolving earth models and mantle features. Refinements to estimates of the geo-neutrino flux from continental crust reduce uncertainty in measurements of the mantle flux, especially measurements from land-based observatories. These refinements enable the resolution of earth models using the combined measurements from multiple continental observatories.

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