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Terrestrial 40K geoneutrinos and Solar CNO neutrinos

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Value of the Earth thermal flux is estimated through temperature gradient method (47 TW). There are exist other ways of heat transfer to the Earth surface from inside, so total heat flux is unknown yet. Non-direct measurements establish Earth thermal flux on the level 200-300 TW. To produce so high flux one needs to add heat produced by 40K to the known isotopes ^{238}U and ^{232}Th . Exact value of potassium in the Earth is unknown. To estimate its content we need to measure 40K antineutrino flux on the surface of the Earth. The problem that solar neutrino fluxes from CNO cycle look very similar to 40K flux. It is needed independent experiment on measuring solar CNO neutrinos to distinguish between 40K and CNO fluxes in a large scintillation detector (e.g. Borexino). We propose to use ^{115}In as a target (R. Raghavan's idea) for solar CNO neutrinos. New type of a detector proposed.

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