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Geoneutrino measurement with Borexino

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Borexino is a neutrino experiment whose detector is hosted by LNGS of Italy. The detector uses organic liquid scintillator and thus geo-neutrinos above 1.8 MeV can be detected via inverse-beta-decay. On 2020 Januaray, Borexino published the updated results on geo-neutrinos using 3262.74 days of data between December 2007 and April 2019, and the exposure is twice of its previous results. Around 50 geo neutrinos are found after removing backgrounds. Different geological predictions are tested against this result and 2.4σ tension is found between the result and earth models which predict the lowest concentration of heat producing elements in the mantle. In this talk, I will review the analyses, results, and implications on geo-science.

Presenter: DING, Xuefeng (Institute of High Energy Physics, Chinese Academy of Sciences) **Session Classification:** Parallel talks 1: Applications of Nuclear Technology