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Decay rate measurements with a 137Cs radioisotope source at Jánossy Underground Research Laboratory (Csillebérc, Hungary)

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The question whether an annual modulation is observable during nuclear decay rate measurements has long been the subject of research. One of the possible explanations for the annual variations would be the effect of solar neutrinos, the flux of which changes in correlation with the Earth-Sun distance. A decay rate measurement with a 137Cs source and a HPGe detector is currently being conducted 30 meters below the ground at Jánossy Underground Research Laboratory (Csillebérc, Hungary). The laboratory is part of the Vesztergombi High Energy Laboratory (VLAB), one of the TOP 50 research infrastructures in Hungary. Up to May 2023, data of six months' worth has been collected, and hence this is a new opportunity to check whether the annual variation in decay rate can be observed. I will present the laboratory, the experiment, and the data processing method.

Submitted on behalf of a Collaboration?

No

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