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Exploring the lowest neutrino energies

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Experimental discoveries in recent decades have provided valuable information on the nature of neutrino masses and mixings and present the first evidence for physics beyond the standard model. Moreover, massive neutrinos are now serving as an ideal tool to help unlock the mysteries of the matter abundance in the Universe.
At the same time the questions related to nature of neutrino masses, detection of relic neutrinos, and existence and role of sterile neutrinos are not answered.
We are looking at concepts to utilize low-energy neutrinos in the keV energy range and below. Examples include a production of monochromatic (anti)neutrinos in the bound-beta decay process and its detection via the resonant capture. One of the initial priorities would be observing anti-neutrino resonance. Such program could enable various measurements. Once the demonstration experiments are designed and concluded, assuming success, the community could start developing techniques that would assist with the detection of the lowest energy neutrinos. These concepts will be discussed in the presentation.

Poster prize

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