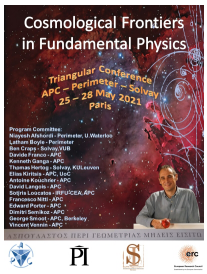

ID de Contribution: **21** Type: **Non spécifié**

Relic neutrino detection through angular correlations in inverse ⊠-decay

vendredi 28 mai 2021 16:20 (40 minutes)

Neutrino capture on beta-decaying nuclei is currently the only known potentially viable method of detection of cosmic background neutrinos. It is based on the idea of separation of the spectra of electrons or positrons produced in captures of relic neutrinos on unstable nuclei from those from the usual β-decay and requires very high energy resolution of the detector, comparable to the neutrino mass. In this talk I shall consider an alternative method of discrimination between neutrino capture and β-decay, based on periodic variations of angular correlations in inverse beta decay transitions induced by relic neutrino capture. The time variations are expected to arise due to the peculiar motion of the Sun with respect to the CνB rest frame and the rotation of the Earth about its axis and can be observed in experiments with both polarized and unpolarized nuclear targets. The main advantage of the suggested method is that it does not depend crucially on the energy resolution of detection of the produced β-particles and can be operative even if this resolution exceeds the largest neutrino mass.

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Classification de Session: First Session, Friday