Contribution ID: **59** Type: **Invited**

Measuring the coherent elastic neutrino-nucleus scattering with an high intensity 51Cr radioactive source

Monday, 11 November 2019 16:40 (20 minutes)

The idea of measuring the coherent elastic nuclear scattering of neutrinos emitted by a high intensity ^{51}Cr radioactive source is investigated.
To produce a high-intensity source, the radioactive material used in the GALLEX experiment (36 kg of Chromium 38.6 % enriched in ^{50}Cr) could be reactivated to the intensity of a few MCi.
The advantages of this source are that the activity can be measured at a few per mill level and that the neutrino spectrum is well known. With a target volume of 2 dm^3 of low-threshold detectors, if the background is limited, the cross-section might be measured with few percent precision.
In this talk, the requirements for the experiment will be shown and the envisioned experimental challenges will also be discussed.
The work is based on arXiv:1905.10611.

Primary author: Dr DI NOTO, Lea (University of Genova and INFN)

Co-authors: Dr BELLENGHI, Chiara (Dipartimento di Fisica, Sapienza Universit'a di Roma and INFN Roma); Dr CHIESA, Davide (Dipartimento di Fisica, Universita' di Milano - Bicocca and INFN); Prof. PALLAVICINI, Marco (Universita' di Genova & INFN Genova); Dr VIGNATI, Marco (INFN - Sezione di Roma); Prof. PREVITALI, Ezio (Dipartimento di Fisica, Universit'a di Milano - Bicocca and INFN)

Presenter: Dr DI NOTO, Lea (University of Genova and INFN)

Session Classification: Theory/pheno/nuclear