ID de Contribution: **32** Type: **Non spécifié**

How the physics of quantum impurities became a central question in the relic neutrino detection (ONSITE presentation)

lundi 6 septembre 2021 15:00 (1 heure)

I will explain that the systems where a beta-decaying atom is attached to a solid-state substrate are capable of making a break-through discovery for cosmology —detecting the so-called Relic Neutrino Background (CνB).

To collect enough statistics and achieve the superb energy measurement resolution required for this ambitious goal, a large-scale experiment involving a macroscopic number of beta-decayers must be eventually built.

The physics of the interaction between the beta-decayer and
the substrate is quite non-trivial and it imposes fundamental limitations on the experiment. I will review several effects that appear in such a system and describe some of the non-trivial theoretical and experimental problems that have to be solved
before a full-scale CnuB detector can be built.

Orateur: Mme CHEIPESH, Yevheniia (Leiden university, LION)