

Dark matter induced electronic excitations in NaI cryogenic scintillating calorimeters

The cryogenic scintillating calorimeters (CSCs) instrumented with transition edge sensors are detectors sensitive to tiny energy depositions down to O(eV), so far optimized to search for nuclear recoils induced by dark matter or neutrinos.

The OvDES project is dedicated to the phenomenology of electronic excitations induced by dark matter or neutrino in CSCs, with a focus on NaI target crystals. It aims to develop a first detector prototype for the characterization of the NaI light yield at low-energy and low-temperature.

In this talk I will describe a possible detection principle and detector design, which can extend the frontier of CSCs to the search for dark matter or neutrinos interacting with electrons.

Author: ZEMA, Vanessa (Max Planck Institute for Physics)

Presenter: ZEMA, Vanessa (Max Planck Institute for Physics)