

Challenges of the world-wide experimental search for the electric dipole moment of the neutron



Contribution ID: 20

Type: Oral

Search for the neutron electric dipole moment at the Paul Scherrer Institute

Monday, 3 November 2014 14:00 (40 minutes)

At the Paul Scherrer Institute, a collaboration of 14 institutions is conducting an experiment to search for a permanent neutron electric dipole moment.

The experiment uses ultracold neutrons (UCN) stored in vacuum at room temperature.

This technique provided the last (and best) limit by the RAL/Sussex/ILL collaboration in 2006: 2.9×10^{-26} e cm (90% C.L.).

We aim at improving this limit using an upgrade of the same apparatus.

The data taking is ongoing and an overview of the sensitivity will be given together with a status report on the control of the systematic effects.

In particular I will discuss some of the most recent developments and their impact on the sensitivity and conclude with the perspectives of this collaborative work.

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Session Classification: Overview