

Departments of Physics Colloquium

Search for the Neutron Electric Dipole Moment at TRIUMF

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Friday, October 23, 2015

1:30 – 2:30 PM

Venue: OE 134, MMC



Abstract: A non-zero Electric Dipole Moment (EDM) of any spin 1/2 particle (such as neutron) violates the Charge conjugation-Parity (CP) symmetry or equivalently the Time invariance, as do the physical processes during the early stages of Universe responsible for the matter over antimatter excess. Phenomenologically, the Standard Model (SM) of particle physics can accommodate CP violation but it fails to explain the baryon-antibaryon asymmetry observed in the Cosmic Microwave Background.

To date, the upper limits released from various experimental groups over the last six decades for the value of the nEDM have set severe constraints on many theories beyond the SM that attempt to predict successfully CP-violating mechanisms.

After a brief description of the nEDM theory background I will present the physical principles and the current status of the EDM experiments around the world and particularly focus on the research that is carried out at TRIUMF in Canada.

Biography: Dr. Katerina Katsika is a postdoctoral researcher working on the nEDM experiment at TRIUMF. She earned her BSc in Physics from Aristotle University of Thessaloniki/Greece and her PhD in experimental particle physics from the University of Sussex/UK where she was also appointed her first postdoc position on the CryoEDM experiment. Her research interest revolves around different aspects of the nEDM search.

The event is free and open to the public.

Future seminars can be found at <http://physics.fiu.edu/seminars/>