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Commissioning status of the UCN facility at TRIUMF

Monday, 16 October 2017 12:00 (30 minutes)

The Japanese-Canadian Ultracold Neutron (UCN) Source is a new facility under
construction at TRIUMF. The distinct feature of TRIUMFs UCN facility is the combination of a neutron spallation source with a superfluid helium UCN converter - unique among all existing and planned UCN sources worldwide. The goal of the UCN project at TRIUMF is to provide a density of several hundreds of UCN per cubic cm to experiments at up to two ports: one of them will be dedicated to determine the neutron electric dipole moment (nEDM) to the 10^(−27) e·cm level of precision.
The presentation shall give an introduction to the infrastructre of the facility. Over the last couple years, the proton beamline and spallation target dedicated to UCN production have been finalized and commissioned successfully. The kicker magnet which allows to share the proton beam between the UCN facility and other accelerator users operates successfully as well. The audience will be briefly updated about the current status of the project: The vertical UCN source cryostat (previously used at RCNP) has been installed and tested at TRIUMF, and is currently being prepared for first UCN production in Canada. In parallel, the collaboration is working on the design of an advanced UCN source cryostat as well as a next generation nEDM spectrometer.

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