Canadian Association of Physicists
Association canadienne des physiciens et physiciennes

Contribution ID: **2558** Type: **Invited Speaker / Conférencier(ère) invité(e)**

# Progress on ultracold neutrons at TRIUMF

*Thursday 6 June 2019 13:15 (30 minutes)*

The TRIUMF Ultracold Advanced Neutron (TUCAN) source, a collaboration between Canadian and Japanese researchers has had two successful ultracold neutron (UCN) runs, demonstrating the production of 70,000 UCN in standard operation. The UCN are produced by cooled spallation neutrons down-scattering in energy in He-II, and at UCN temperatures can be guided in beam-pipes to experimental areas. The first experiment planned for the TUCAN source is a search for a neutron Electric Dipole Moment (nEDM) which is a T-violating process, and through CPT invariance would imply a new source of CP-violation. A new horizontal UCN source that in its standard operation will produce two orders of magnitude more UCN than the current source, that can handle larger heat loads, and has improved cold moderation, has been designed. This talk will review the progress on the TUCAN facility, its recent run in Fall 2018, its plans for an improved UCN source, and status of the planning for the nEDM experiment at TRIUMF.

**Authors:** BLAIR, Jamieson (University of Winnipeg); FOR THE TUCAN COLLABORATION

**Presenter:** BLAIR, Jamieson (University of Winnipeg)

**Session Classification:** R2-8 Ultracold Neutrons (DNP/PPD) | Neutrons ultrafroids (DPN/PPD)

**Track Classification:** Nuclear Physics / Physique nucléaire (DNP-DPN)