Canadian Association of Physicists
Association canadienne des physiciens et physiciennes

Contribution ID: **2132** Type: **Oral (Graduate Student) / Orale (Étudiant(e) du 2e ou 3e cycle)**

Quantum fluctuations in dipolar Bose-Einstein condensates and Bose-Bose mixtures (G)

Wednesday 13 June 2018 12:00 (15 minutes)

Recent experiments with the highly magnetic atoms dysprosium and erbium have revealed the formation of a novel form of ultra-dilute stable droplets in dipolar Bose-Einstein condensates (BEC). This surprising result has been explained by the stabilization given by quantum fluctuations.
We will discuss the effects of these beyond-mean-field corrections of a dipolar BEC in three dimensions as well as in a quasi-one-dimensional geometry.
Moreover, we will show that the same arguments can be applied to a system of a mixture of two different bosons in absence of atomic dipoles but with different inter- and intra-coupling constants.

Authors: Mr EDLER, Daniel (Institute of Theoretical Physics, Leibniz University of Hannover); Prof. SANTOS, Luis (Institute of Theoretical Physics, Leibniz University of Hannover)

Presenter: Mr EDLER, Daniel (Institute of Theoretical Physics, Leibniz University of Hannover)

Session Classification: W2-2 Light-Matter Interactions I (DAMOPC) | Interactions lumière-matière (DPAMPC)

Track Classification: Division of Atomic, Molecular and Optical Physics, Canada / Division de la physique atomique, moléculaire et photonique, Canada (DAMOPC-DPAMPC)