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## Searching for dark matter with the PICO bubble chambers

*Thursday, 1 June 2017 14:00 (30 minutes)*

One of the most pressing question in modern physics arises from the growing evidence that dark matter constitutes the vast majority of the universe's content. The PICO collaboration searches for dark matter particles using superheated fluid detectors, or bubble chambers. These detector can be made inherently insensitive to gamma and beta radiation, while the additional background suppression required to obtain sensitivity to the elusive dark matter signal is achieved with the acoustic signature of the bubble nucleation that allows the identification of alpha particles. In this talk I will present recent results obtained with the PICO bubble chambers that operated at SNOLAB, including the latest results of the PICO-60 detector that set the most stringent constraints on the dark matter signal in the spin-dependent sector. I will also present on PICO Collaboration's plans on building at SNOLAB a 40-liter bubble chamber with a novel design, and the design of a ton-scale bubble chamber that will possess a unique potential to probe a vast area of the dark matter phase-space that is predicted by current theories.

**Primary author:** GIROUX, Guillaume (Queen's University)

**Presenter:** GIROUX, Guillaume (Queen's University)

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