

PICO Bubble chambers for the direct detection of dark matter



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The PICO collaboration uses bubble chambers to search for WIMP dark matter particles. The bubble chambers are operated in a moderately superheated state, providing superb rejection of the dominant gamma background, and are filled with fluorinated target fluids ideally suited for investigating spin-dependent WIMP-proton interactions. PICO currently operates a 2-liter (PICO-2L) and a 32-liter (PICO-60) bubble chamber at the SNOLAB deep underground laboratory. I will discuss recent activities by the PICO collaboration to understand and mitigate an anomalous background that has impacted previous dark matter searches, plans for the operating experiments, and prospects for a future ton-scale PICO bubble chamber.

Tuesday

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4:00 p.m.

Rm 415 NSH