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Dark matter searches with AION-10, and beyond

Wednesday 30 August 2023 17:30 (15 minutes)

In this talk, I will introduce AION, a multi-stage atom interferometer project that aims to detect ultra-light dark matter candidates. The first stage, AION-10, will stand 10m tall in a stairwell in the Physics Department in the University of Oxford. AION-10 will operate in a gradiometer configuration, which means that two identical atom interferometers are run simultaneously, launching from the bottom and middle of the baseline. I will present near- and long-term sensitivity projections for several ultra-light dark matter candidates. I will also discuss potential backgrounds from anthropogenic and seismic noise, as well as possible mitigation strategies.

Submitted on behalf of a Collaboration?

Yes

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