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Dark sector searches with Coherent CAPTAIN-Mills

Friday, 21 June 2024 17:30 (2 hours)

The Coherent CAPTAIN-Mills (CCM) experiment is a 10 ton liquid argon scintillation and Cherenkov detector at the Los Alamos Neutron Science Center. The detector is located 23m downstream from the Lujan Facility's stopped pion source which will receive 2.25 10^22 POT in the ongoing 3 year run cycle. The short duration 290ns proton pulse and delayed arrival time of spallation neutrons allows CCM to probe rare processes with very low backgrounds. The high-rate of pion production and intense flux of other particles at the Lujan source allow CCM to probe a wide variety of dark sector models, including possible explanations to the short-baseline neutrino anomalies and MeV-scale Axion-Like-Particles. We present the latest results from CCM as well as projections for its full 3yr run cycle.

Poster prize

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