

# Dark Sector Searches with Coherent CAPTAIN-Mills

*Friday 14 June 2024 14:30 (15 minutes)*

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 90deg off-axis and 23m away from the Lujan Facility's stopped pion source which will receive  $2.25 \cdot 10^{22}$  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. In this talk I present the latest work from CCM as well as projections for its full 3yr run cycle.

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