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Magnetic shielding and source-mass characterization in the ARIADNE axion experiment

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The Axion Resonant InterAction Detection Experiment (ARIADNE) collaboration will search for the QCD axion using a Nuclear Magnetic Resonance based technique where the axion acts as a mediator of spin-dependent forces between an unpolarized Tungsten source mass and a sample of polarized helium-3 gas. The experiment relies on limiting ordinary magnetic noise with superconducting magnetic shielding as well as a stable rotary system to modulate the axion-signal from the source mass. Updates on thin-film superconducting shielding, rotating source mass characterization, and progress on the experiment will be discussed.

Primary author: Ms LOHMEYER, Chloe (Northwestern University)

Co-author: ARIADNE COLLABORATION, For the (Northwestern University)

Presenter: Ms LOHMEYER, Chloe (Northwestern University)