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**Cross-Calibration of NMR probes at Argonne National Laboratory** SUVARNA RAMACHANDRAN, Argonne Natl Lab — Both the ongoing Muon g-2 Experiment (E989) at Fermilab and the future g-2/EDM experiment (E34) at J-PARC will measure the anomalous magnetic moment of muon, $a_\mu$, with improved precision compared to former measurements at Brookhaven (E821). The Brookhaven result is in tension with the Standard Model by more than $3\sigma$. The determination of $a_\mu$ requires the measurement of both the muon spin precession frequency $\omega_a$ and the magnetic field in the moun storage ring. To derive the absolute magnetic field, both experiments have developed special, water-based NMR probes that have small and well-measured corrections from the probe materials and geometries. This presentation focuses on a cross-calibration effort of these probes between collaborators from both the E989 and E34 experiments. In a very homogeneous and stable MRI magnet at Argonne National Laboratory, the teams have cross-calibrated the probes at 1.45T, 1.7T, and 3T. This presentation will focus on the details of the calibration and the analysis status of the 1.45T and 1.7T data which were taken in 2019. We acknowledge support from the Fermi Research Alliance, LLC under Contract No. DE-AC02-07CH11359 with the U.S.DOE-OHEP. The author is supported by US DOE-OHEP under contract DE-AC02-06CH11357.

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