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# NMR with Machine Learning

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Constant current continuous wave Nuclear Magnetic Resonance (NMR) has been an essential tool for polarized target experiments in Nuclear and High-energy physics. Q-meter based phase-sensitive detection can provide accurate monitoring of the polarization over the course of a scattering experiment with limitations due to some operational parameters. In this talk, we present recent studies of improved signal to noise in NMR-based Spin-1 polarization measurements as well as reliable measurements outside of the designated range of the Q-meter's operational parameters with the use of machine learning (ML). This approach will allow for real time online polarization monitoring and offline polarization data analysis for improved overall figure of merit for experiments using solid state polarized targets.

## Category

Polarized Targets

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