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A Polarized Target for E1039 (SPINQUEST) at FERMILAB

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In this presentation, the design of the polarized target to be used in the SPINQUEST experiment at FermiLab will be discussed. The polarized target, consisting of either NH_3 or ND_3 , is centered in a 5T magnet field and polarized by 140 GHz microwaves. A new NMR system will measure the degree of polarization. The evaporation of the helium surrounding the target, caused by the intense beam of protons necessary for the experiment, is accommodated by a 14,000 m³/hr Roots pumping system. NH_3 polarizations above 90% have been achieved, comparable to what has been achieved in other systems.

Summary

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