

Abstract Submitted
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Longitudinal and transverse NMR study of superfluid ^3He in aerogel¹ YULIANG DU, LEI GUO, JINSHAN ZHANG, H.M. BOZLER, C.M. GOULD, University of Southern California — The comparison of longitudinal and transverse resonances in the superfluid phases of ^3He was the most decisive confirmation of the superfluid order parameters and of Leggett's theoretical predictions. Recently, the study of the impact of impurities on superfluid ^3He has been made possible by using low-density aerogel as a filler in the liquid. Predictions of an altered superfluid order parameter in aerogel can be tested by comparing longitudinal and transverse resonances. Previously, longitudinal resonance has been measured using conventional NMR techniques with a high Q coil. One characteristic of the longitudinal NMR line is its short effective T_2 making conventional pulsed NMR techniques difficult. We expect that the presence of aerogel would make T_2 even shorter. SQUID NMR offers wide bandwidth at low frequencies. We will discuss our efforts to observe longitudinal resonance in both bulk superfluid and aerogel using SQUID techniques.

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