

Abstract Submitted
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Bound spin waves in the ferromagnetic layer of ^3He on highly oriented graphite¹ LEI GUO, JINSHAN ZHANG, C.M. GOULD, H.M. BOZLER, Univ. of Southern California — The second monolayer of ^3He on graphites such as Grafoil becomes highly ordered at millidegree temperatures. This system is a good model for nanoscale two-dimensional magnetism because of the large number of separated two-dimensional planes. Motivated by our interest in increasing the structural coherence of the graphite samples that we study, we have used exfoliated ZYX grade graphite as a substrate for our recent experiments. Much of the general picture of finite temperature ordering with ZYX is similar to Grafoil. However, as a byproduct of our increased structural coherence, we have observed several distinct resonances in the ordered spin system. This result is surprising because the structural size of platelets of graphite is not controlled. Nevertheless, the separation of the resonances is consistent with bound two-dimensional spin waves with length scales consistent with the average sizes of the graphite platelets. We will present our analysis of the temperature dependence of the spin wave modes.

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H.M. Bozler
Univ. of Southern California

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