

## Spin Wave Resonances Excited by Moving Domain Walls in Polarized Dilute Liquid $^3\text{He}$ - $^4\text{He}$ Mixtures

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Previously observed<sup>1</sup> multiple NMR spin echo patterns following a single 180 degree pulse in a very dilute (350 ppm), highly polarized liquid  $^3\text{He}$  -  $^4\text{He}$  mixture below 20 mK are discussed. Echoes occurred at intervals varying from 0.1-1.0 seconds, with the echo patterns showing extreme sensitivity to the field gradients. These echoes are now believed to be associated with spin waves generated by a moving domain wall as it moves along the cell through the magnetic field gradient. The echoes are generated when the spin wave frequencies correspond to geometric spin wave resonances in the cell. A variety of echo patterns were observed depending on the temperature and field gradient. Simulations, now in progress, will be presented.

<sup>1</sup>G. Nunes, C. Jin, D. Hawthorne, A.J. Putnam and D. M. Lee, Phys. Rev. B **46**, 9082 (1992).