## Spin Waves and Moving Domain Walls in Dilute Spin Polarized $^3$He-$^4$He Mixtures

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Early experiments by Nunes *et al.*[1] showed that following a single 180 degree NMR pulse acting on a very dilute, polarized mixture of $^3$He in $^4$He (350 ppm) in a 9.4 Tesla magnetic field, a sequence of spin echoes at intervals ranging from 0.1-1.0 seconds was observed. We have recently interpreted these data as being associated with spin wave resonances in the cell excited by a domain wall moving through a magnetic field gradient. Each echo corresponded to a different spin wave mode. A variety of echo patterns were observed depending on the temperature and field gradient. The data will be discussed in terms of models based on the Leggett -Rice equation.[2]

[1]G. Nunes, C. Jin, D. Hawthorne, A.J. Putnam and D. M. Lee, Phys. Rev. B **46**, 9082 (1992).
[2]A.J. Leggett and M. J. Rice, Phys. Rev. Lett. **20**, 586 (1968), erratum, 21, 506.