

Abstract Submitted
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NMR studies of incommensurate quantum antiferromagnetic state of LiCuVO₄ A. P. REYES, R. SMITH, T. CALDWELL, R. ACHEY, National High Magnetic Field Laboratory, Tallahassee, FL, A. PROKOFIEV, W. ASSMUS, Frankfurt University, Frankfurt, Germany, G. TEITEL'BAUM, Zavoiskii Inst. for Technical Physics, Kazan, Russia — We report ⁵¹V NMR measurements in the linear spin-chain compound LiCuVO₄ single crystals. High temperature ⁵¹V spectra exhibit a classic quadrupole-split line expected for $I = 7/2$ nuclei (splitting disappears below 50K). Linewidth anomalies correlated with characteristic features of the resonance shift were observed near 25K, 6K, and 2K. This is attributed to increased spin correlations leading to 3D antiferromagnetic order at low temperatures. The Knight shift tracks susceptibility giving a transferred hyperfine field of $A_{hf} = 6.5$ kOe/ μ_B on the V nuclei. Below 2K for a field parallel to crystal c -axis the spectra exhibit a broad two-peak feature which is absent for field along the b -axis. The moment orientation determined from the spectra suggests an incommensurate AF modulation along the b -axis in agreement with recent neutron scattering data.¹ Spin dynamics through relaxation measurements will be discussed. ¹ B. J. Gibson, *et al.*, Physica B350, e253 (2004).

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