

Talk 4: 14:00–

Novel spin excitation in the field induced phase of a Haldane magnet

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We report the results of high field ESR experiments on the $S=1$ Heisenberg antiferromagnetic chain (Haldane magnet) $\text{Ni}(\text{C}_5\text{H}_{14}\text{N}_2)_2\text{N}_3\text{PF}_6$, alias NDMAP. We have found that excitation branches above the critical field (H_c) where the energy gap closes change into one branch around 15 T which becomes close to the paramagnetic line at high fields. The branch above 15 T fits well the conventional antiferromagnetic resonance mode with easy planar anisotropy. Angular dependence of resonance fields above H_c was also investigated in details at several frequencies above 200 GHz and compared with calculated results based on a naive model of extended singlet- triplet branches above H_c and a phenomenological field theory.