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Neutron studies of 3D Highly Frustrated Magnetism

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Because of their low propensity to order antiferromagnetic materials based on a pyrochlore lattice appear to be excellent systems for studying exotic ground states. It has also been shown that ferromagnetically coupled spins can be frustrated on such a lattice, if there is considerable local Ising anisotropy. I will review several neutron scattering studies on pyrochlore compounds done in the past couple of years, focusing on the study of spin dynamics. Evidence for large, dynamical spins at low temperatures in several antiferromagnets and a crossover from classical to quantum regime in the spin ices will be discussed. If time permits I will discuss new areas of neutron research in frustrated magnetism.

[1] *Magnetic Systems with Competing Interactions*, edited by H.T. Diep (World Scientific, Singapore, 1994), Can. J. Phys. **79**, (2001) and *Frustrated Spin Systems*, ed H T Diep (World Scientific, Singapore, 2004).
[2] S. T. Bramwell and M. P. Gingras, Science, **294**, 1495, (2001).