

Magnetic and lattice dynamics in CsNiCrF6

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Materials with correlated structural disorder may be viewed as a different material class to conventional crystalline materials with either vanishingly small levels of disorder or, on the other hand, strong random disorder. Both spin and lattice dynamics of a frustrated magnets with an underlying correlated but disordered structure such as a charge ice can be unconventional. In this project, we describe initial efforts to investigate both aspects in CsNiCrF6: the project is at its outset, but we will describe our approach to measuring the spin dynamics and obtaining a realistic spin Hamiltonian for a magnetic charge ice; and thermal conductivity measurements that show the phonons are anomalously strongly scattered for a crystalline material, along with initial measurements of the phonon dispersion relations in which we seek an explanation for this observation.

Position

Phd

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