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Magnetic studies of S=1/2 kagomé lattice single crystals TIANHENG HAN, SHAOYAN CHU, MIT, YASU TAKANO, University of Florida, JOSE RODRIGUEZ-RIVERA, NCNR NIST, COLLIN BROHOLM, John Hopkins University, DANIEL NOCERA, YOUNG LEE, MIT — Herbertsmithite ZnCu3(OH)6Cl2–one of the most promising quantum spin liquid candidates–presents a promising system for studies of frustrated magnetism on an S=1/2 kagomé lattice. Following our recent success in crystal growth, we have measured anisotropies in the magnetic susceptibility and specific heat. The implication on the Hamiltonian will be discussed. Specific heat has been measured at dilution fridge temperatures up to 18 T on a single crystal sample which gives further information on the low temperature phases. In addition, inelastic neutron scattering has been performed and the broad continuum observed is consistent with deconfined 2D spinons which lends further support of herbertsmithite's quantum spin liquid candidacy.

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