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Comparing the spin structure factor between parent compounds in different cuprate families BRIAN MORITZ, YAO WANG, EDWIN HUANG, CHUNJING JIA, THOMAS P. DEVEREAUX, SLAC and Stanford University — Understanding differences in the magnetic excitation spectra between parent compounds of various cuprate families can provide insight on differences in each family's temperature-doping phase diagram. Using small cluster exact diagonalization and numerically exact determinant quantum Monte Carlo, we evaluate the spin structure factor of the Hubbard model, accounting for model parameter variations between each family. We compare our results to recent resonant inelastic x-ray scattering measurements and comment on important controlling parameters.

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