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Spin Frustration, Magnetic Susceptibility and Excitations in Spatially Anisotropic Triangular-Lattice Antiferromagnets[1] RAJIV SINGH, University of California at Davis, WEIHONG ZHENG, University of New South Wales, Sydney, Australia, JOHN FJAERESTAD, ROSS MCKENZIE, University of Queensland, Brisbane, Australia, RADU COLDEA, University of Bristol, UK — We calculate the temperature dependent magnetic susceptibility and excitation spectra for the spatially anisotropic triangular- lattice Heisenberg model. We show that suitably scaled plots of magnetic susceptibility provide a direct measure of frustration in the system and allow one to infer the exchange parameters from the susceptibility data. We find that the organic material $\kappa-(BEDT-TTF)_2Cu_2(CN)_3$ is very well described by the isotropic triangular lattice model. We also find that the excitation spectra of the model shows various anomalies in the Neel and Spiral phases.

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