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**Hall constant on the Icosahedral t-J model** JAN HAERTER, MICHAEL PETERSON, SRIRAM SHASTRY, University of California at Santa Cruz — We investigate the Hall constant $R_H$ in the zero field limit through the exact diagonalization technique on small clusters within the triangular lattice t-J model. As a model system we study the icosahedron, a 12-site Platonic solid consisting solely of five fold coordinated triangles. We compare results with toroidal geometries up to 12 sites. While the high-temperature behavior of the high-frequency $R_H^*$ is quite well understood analytically, our objective is to explain the complete T-dependence of $R_H$ in $Na_{.68}CoO_2$ as observed in experiments (Ong et al), especially in the low-T regime. Furthermore, we investigate $R_H$ as function of frequency by explicit evaluation of Kubo formulae. We compare results with existing studies of $R_H$ on square lattices.

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