Canadian Association of Physicists
Association canadienne des physiciens et physiciennes

Contribution ID: **312** Type: **Oral Competition (Graduate Student) / Compétition orale (Étudiant(e) du 2e ou 3e cycle)**

(G*) Exchange Interactions in d^2 Systems

Tuesday 8 June 2021 16:30 (15 minutes)

We study an effective pseudo-spin model from microscopics for d^2 materials on various lattice geometries. It was found that the interplay between electron-electron interactions and spin-orbit coupling generates intriguing multipole-multipole interactions. These interactions give rise to various multipolar phases, which were identified using computational techniques such as classical Monte Carlo and exact diagonalization. Potential applications and extensions of this theory will also be presented.

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