Quantum Order of Chiral Magnets

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Asymmetric spin-orbit interactions are important in a variety of applications including, for instance, multiferroic and spintronic devices. On a more fundamental level it has been predicted that asymmetric spin-orbit interactions may stabilize novel spin textures that share certain similarities with liquid crystals. I will give a basic introduction to this field and the rich physics asymmetric spin-orbit interactions may produce. Our own interest in this field has been inspired by experimental studies of the cubic itinerant-electron magnet MnSi. I will briefly review the mysteries related to this material and present recent experimental progress in its understanding.