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Stability of spontaneous quantum Hall state in the Triangular Kondo-lattice model YASUYUKI KATO, IVAR MARTIN, CRISTIAN BATISTA, Theoretical Division, Los Alamos National Laboratory — We study the behavior of the quarter-filled Kondo lattice model on a triangular lattice by combining a zero-temperature variational approach and finite-temperature Monte-Carlo simulations. For intermediate coupling between itinerant electrons and classical moments \mathbf{S}_j , we find a thermodynamic phase transition into an exotic spin ordering with uniform scalar spin chirality and $\langle \mathbf{S}_j \rangle = 0$. The state exhibits spontaneous quantum Hall effect. We also study how its properties are affected by the application of an external magnetic field.

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