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Novel magnetic orderings in the kagome Kondo-lattice model GIA-WEI CHERN, KIPTON BARROS, Los Alamos National Laboratory, JORN VENDERBOS, Massachusetts Institute of Technology, CRISTIAN BATISTA, Los Alamos National Laboratory — We consider the Kondo-lattice model on the kagome lattice and study its weak-coupling instabilities at band filling fractions for which the Fermi surface has singularities. These singularites include Dirac points, quadratic Fermi points in contact with a flat band, and Van Hove saddle points. By combining a controlled analytical approach with large-scale numerical simulations, we demonstrate that the weak-coupling instabilities of the Kondo-lattice model lead to exotic magnetic orderings. In particular, some of these magnetic orderings produce a spontaneous quantum anomalous Hall state.

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