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Universal chiral magnetism in low-density 2D Kondo lattice model DMITRY SOLENOV, DMITRY MOZYRSKY, IVAR MARTIN, Los Alamos National Laboratory — We demonstrate that (quasi-)two-dimensional systems comprised of localized moments and itinerant electrons form non-coplanar magnetic crystal states when the Kondo coupling energy is smaller than the chemical potential. These states arise for fully isotropic local exchange coupling between electrons and magnetic ions and do not require a spin-orbit (Dzyaloshinskii-Moriya) interaction or magnetic field. We give an analytical argument on instability of simple co-planar states and show that the states with non-zero chirality (degree of non-coplanarity) are energetically favorable. Numerical modeling is performed to estimate the ground state configurations.

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