Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Chirality waves in two-dimensional magnets DMITRY SOLENOV, DMITRY MOZYRSKY, IVAR MARTIN, Los Alamos National Laboratory — Electron, as a particle with spin 1/2, moving though a magnetic material with non-coplanar magnetization pattern accumulates quantum mechanical (Berry) phase, characterized by the degree of non-coplanarity of the magnetic texture, or chirality. Until now metallic chiral magnets were thought to be quite rare and require either a fine tuning of the electron spectrum (nesting) or spin-orbit interactions. We show that two-dimensional magnets within a simple model of magnetism – a Kondo lattice model – favor a non-coplanar order (a distorted skyrmionic lattice) with unidirectional modulated chirality. Unlike recently observed chiral triangular skyrmion lattices supported by spin-orbit interaction and finite magnetic field (e.g. in MnSi), the chirality-wave order emerge at small-to-intermediate Kondo coupling strength in the absence of magnetic field or spin-orbit coupling

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Date submitted: 19 Nov 2010 Electronic form version 1.4