Title: Spontaneous Quantum Hall Effect in Frustrated Magnets

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I will present results on the Kondo Lattice models on a triangular lattice for band filling factors $n=3/4$ and $n=1/4$. We will see that a simple non-coplanar chiral spin ordering with uniform scalar spin chirality is naturally realized for different coupling regimes of each of the two filling factors under consideration. The $n=3/4$ case corresponds to a weak-coupling instability driven by perfect nesting of the Fermi surface. The $n=1/4$ instability takes place in the intermediate coupling regime. The resulting triple-$Q$ magnetic ordering is a natural counterpart of the collinear Neel ordering of the half-filled square lattice Hubbard model. We will also see that the obtained chiral phase exhibits a spontaneous quantum Hall-effect with $\sigma_{xy} = e^2/h$.

*Work done in collaboration with Ivar Martin.

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