

The antiferromagnetic XY model

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We introduce the antiferromagnetic XY system on the triangular lattice, a spin model driven by an energy functional that favours anti-alignment on each pair of interacting spins. We start recalling the main results concerning the variational discrete-to-continuum analysis at the surface scaling at which chirality transitions take place. Then, we focus on the vortex scaling: we introduce a notion of discrete vorticity and explain how to gain compactness for this order parameter and how to prove a Gamma-limit result of the energy functionals as the lattice spacing goes to zero.

Joint work with A. Bach, L. Kreutz and G. Orlando.