

Vortices in 2D - spin systems

In my talk, I will first present the two-dimensional XY model and the expected behaviour of the ordering parameter and the spin correlations without vortices. Vortices are introduced and characterized using the winding number. After some energy and entropy considerations, the Kosterlitz-Thouless transition is discussed phenomenologically and parts of the calculation leading to the phase flow diagram can be presented. The talk will finish with the discussion of a recent article (M. Becker et al: "Spin-orbit physics of $j=1/2$ Mott insulators on the triangular lattice", arXiv:1409:6972).