

**Striped patterns for generalized antiferromagnetic
functionals with power law kernels of exponent smaller
than $d + 2$**

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In this talk I will consider a class of continuous sharp interface generalized antiferromagnetic models previously studied by Daneri, Goldman and Runa. The functional consists of a perimeter term (retaining discrete symmetry) and a repulsive nonlocal term with a power law kernel. In a suitable regime the two terms enter in competition and symmetry breaking with formation of periodic striped patterns is expected to occur. We will show that the results obtained by Daneri and Runa showing striped pattern formation for power law kernels with exponents $p \geq d + 2$ can be extended to power law kernels within a range of exponents strictly smaller than $d + 2$ and strictly larger than $d + 1$, being d the dimension of the underlying space. Notice that the exponent $p = d + 1$ corresponds to an anisotropic version (retaining discrete symmetry) of the model for pattern formation in thin magnetic films.