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Phase transitions in the long-range antiferromagnetic Ising model. RACHELE DOMINGUEZ, KIPTON BARROS, WILLIAM KLEIN, Boston University — We study the long-range antiferromagnetic Ising model to understand microphase separation in block-copolymer systems and dipolar Ising models. When quenched to low temperatures, the system initially obeys a Cahn-Hilliard-Cook-like linear theory and then orders into a "stripe" or "clump" phase. The system also exhibits order-to-order transitions between the stable stripe and clump phases. From the free energy density obtained from coarse graining the Ising model, we use Langevin dynamics to investigate these transitions. I will discuss the nature of the transitions into the ordered phases as well as computational and theoretical methods for obtaining the phase diagram of the system.

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