

Abstract Submitted  
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**Equilibrium properties of Ising metamagnetic films**<sup>1</sup> JAMES MAY-BERRY, MICHEL PLEIMLING, Virginia Tech — Artificial antiferromagnets have attracted attention lately due to the potential for technological applications. We model these systems as thin Ising metamagnetic films and study their equilibrium properties using Monte Carlo simulations. In variance with previous work but in agreement with the experimental systems, we consider films comprised of “sets” of planes, with an antiferromagnetic coupling between sets and a ferromagnetic coupling within sets. This allows us to consider different situations by varying the number of planes in each set. Studying the magnetization density and response functions as a function of temperature and magnetic field, we determine the corresponding phase diagrams. We discuss how a change of the number of planes in each set changes the equilibrium phase diagram.

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