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Effects of Dilution on the Phase Behavior of Antiferromagnetic Ultrathin Magnetic Films STEFAN PATCHEDJIEV, JOHN WHITEHEAD, Memorial University of Newfoundland, KEITH DE'BELL, University of New Brunswick at Saint John — The effects of dilution on the ground states of magnetic rotors for the two and three dimensional Heisenberg model are studied using Monte Carlo simulations. In these models the classical spins are distributed on a square two-dimensional lattice, and interact through nearest-neighbor antiferromagnetic exchange and dipolar interactions, in the presence of vacancies. The phase diagrams for both systems are presented as a function of the ratio of |J|/g for different dilutions. The results indicate that for low temperature the randomly distributed vacancies, through the phenomenon 'order due to disorder', lead to richer phase space.

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