1018-82-171     **Raissa M D'Souza\*** (`raissa@cse.ucdavis.edu`), Mechanical and Aeronautical Engineering Dept., University of CA, 1 Shields Ave, Davis, CA 95616. *Statistical physics, computer simulation and probability.*

Statistical physics, computer simulation and discrete mathematics are intimately related through the study of shared models. These are primarily lattice models, such as the Ising model, yet can also involve discrete structures such as networks. Several models illustrate the current interplay between these three fields, while also providing cautionary tales of interpolating results obtained in one realm to the other. This talk will survey several such models, focusing on pattern formation in a simple first-order jamming transition. (Received March 05, 2006)