

Center for Soft Matter and Biological Physics

Discussion Meeting

Ahmadreza Azizi

Physics Dept. Virginia Tech

Microscopic description of Generalized Voter Model

Friday, July 13, 2018

1:30 pm—2:30 pm

304 Robeson Hall

The Langevin equation of critical phenomena in the presence of two symmetric absorbing states is considered as a novel macroscopic description of generalized Voter model (GVM). Numerical integration of GVM in two dimensions shows that the direct transition from a disorder phase to either of the absorbing states is described by voter critical point. Also, indirect transitions to the ordered state can happen where the Voter critical point is split into Ising and Directed percolation (DP) critical points.

Although the Langevin description of GVM is successful, there is no known microscopic version of GVM in two dimensions which clearly presents all three critical points together. We will study one of the possible ways to achieve a microscopic version of GVM with Voter, Ising and DP critical points.