Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Voter Model on Heterogeneous Graphs. VISHAL SOOD, SIDNEY REDNER, CNLS Los Alamos National Laboratory — We study basic properties of the voter model on heterogeneous graphs with an arbitrary degree distribution. By mapping the voter model to a coalescing random walk, we are able to understand the effect of the degree distribution on the dynamical behavior. We thereby find that the mean consensus time for finite graphs of N sites scales as $\mu_1^2 N/\mu_2$, where μ_1 is the mean degree and μ_2 the second moment of the degree distribution. Thus the consensus time may scale sublinearly with system size if the degree distribution is sufficiently broad.

Vishal Sood
CNLS Los Alamos National Laboratory

Date submitted: 30 Nov 2004 Electronic form version 1.4