

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Aging dynamics for the driven lattice gas¹ GEORGE L. DAQUILA,
UWE C. TAÜBER, Department of Physics, Virginia Tech — We numerically investigate the two-time behavior of the density-density auto-correlation function in driven lattice gases with particle exclusion and periodic boundary conditions in one, two, and three dimensions using precise Monte Carlo simulations. Starting from strongly correlated initial conditions we investigate the relaxation towards the nonequilibrium steady state. We obtain simple aging scaling behavior in one, two, and three dimensions. The simulation data confirm the density auto-correlation aging exponents determined from simple scaling arguments. For the one-dimensional case we connect with the KPZ surface growth model and establish a relation between the density-density and known height-height auto-correlation aging exponents.

¹Research supported through the US Department of Energy (DOE-BES), grant no. DE-FG02-09ER46613.

George L. Daquila
Department of Physics, Virginia Tech

Date submitted: 11 Nov 2010

Electronic form version 1.4