

Abstract Submitted
for the SES11 Meeting of
The American Physical Society

A two-Lane model with anomalous slow dynamics¹ DAN LINFORD, TREVOR RICHARDS, MICHEL PLEIMLING, Virginia Tech — It is known that in one-dimensional equilibrium systems with short range interactions a phase transition cannot exist at finite, non-zero temperatures. However, far from equilibrium, one-dimensional systems with local interactions can exhibit a phase transition. The ABC model, a three species model defined on a chain characterized by non-symmetric exchanges between particles, is known to possess a non-equilibrium phase transition. This model exhibits anomalous slow dynamics that we investigate in some detail using two-time quantities. In addition we discuss an extension of this model to a case where this single lane is coupled to a one-dimensional particle bath. This coupling yields an additional phase transition that we discuss in some detail.

¹Supported in part by the US National Science Foundation through Grant DMR-0904999.

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Date submitted: 16 Aug 2011

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