1048-35-343 **Konstantin Khanin*** (khanin@math.toronto.edu), Department of mathematics, University of Toronto, 40 St George Street, Toronto, ontario M6S 4L3, Canada. *On dynamics on the shock manifolds.*

Solutions to the Hamilton-Jacobi equations are associated to trajectories of Lagrangian particles. It is well known that only action-minimizing trajectories are essential. Other particles are merging with the shocks, and their dynamics traditionally is not considered after the merge.

We shall discuss two different approaches to the construction of such dynamics on the shock manifolds. the first is related to viscosity regularization, another one is based on introduction of the small random noise. It turns out that in a general case these two methods correspond to different dynamical behavior. We shall also discuss the relation between the dynamics on the shocks and the problem of optimal transportation. (Received February 10, 2009)