

1106-35-2682

**Dmitry Glotov\*** (dglotov@auburn.edu) and **Nan Jiang**. *Slow coarsening in the Allen-Cahn model*. Preliminary report.

Coarsening refers to the evolution of patterns of clusters in which the area of interfaces tends to decrease over time. This phenomenon is manifested in the models for foams, grain structure in alloys, molecular beam epitaxy, etc. The rates of coarsening are physically relevant since they are readily observable both empirically and in the models. We study the rates of coarsening in the Allen-Cahn model and will present estimates of these rates in the form of power laws. The method is based on the framework developed by Kohn and Otto which links the length scale of the system with its energy. The method relies on an interpolation inequality, a dissipation inequality, and an ODE argument and produces time-averaged one-sided estimates of the energy. (Received September 16, 2014)