

1096-35-1095

Jian-Guo Liu* (jliu@math.duke.edu), Department of Mathematics, Duke University, Durham, NC 27708, and **Frederic Coquel, Shi Jin** and **Li Wang**. *Singular limit of a nonlinear hyperbolic system with a two-scale relaxation parameter at an interface.*

In this talk, I will present a rigorous convergence analysis of a nonlinear hyperbolic system with a two-scale relaxation parameter at an interface. In the right part of the interface, the relaxation parameter is vanishing and we recover in the limit the underlying equilibrium PDEs, while in the left part, we deal with a finite relaxation rate. A relaxation layer develops within the interface in the asymptotic regime. Its Kruzkov like entropy analysis reveals the matching conditions in between the left and right PDEs models. The limit solution is proved to be bounded in sup norm with bounded total variation and the interface layer is monotone. (Received September 12, 2013)