

**Meeting:** 1003, Atlanta, Georgia, AMS CP 1, AMS Contributed Paper Session

1003-65-936      **Yabin Ding\*** ([ding@math.sc.edu](mailto:ding@math.sc.edu)), Department of Mathematics, University of South Carolina, Columbia, SC 29208. *Multiscale ELLAM Methods for High Oscillatory Advection-Diffusion Equations*. Preliminary report.

Many problems in nature involve multiple scales, such as flow through porous media, turbulent flow, structural analysis of composite materials, and large-scale molecular dynamic simulations. It is very difficult to resolve numerically all the scales. If the fine scale information is ignored, then the solution will not be physically meaningful. Therefore, the information of the fine scales must be incorporated into the model.

Here, we present the Multiscale ELLAM Methods for Advection-Diffusion Equations with rapid oscillatory coefficients. (Received October 01, 2004)