

UCR

Mathematics

Department

Colloquium

DR. DAVID UMINSKY OF UCLA

"New computational methods for simulating viscous vortex dynamics"

Abstract:

The computational challenges to resolving the complex behavior of solutions to the Navier-Stokes Equations are immense. In this talk we will revisit an old Lagrangian method known as vortex methods. One of the fundamental challenges to the computational accuracy of these methods is a source of error known as convection error. We introduce a new multi-moment vortex method (MMVM) which drastically reduces this source of error by carefully allowing these particles to deform. Examples such as vortex merger and metastable tripoles will be discussed.

Thursday, February 9th, 2012

Surge Building, Room 284

Tea, Coffee and Cookies @ 3:40pm

Talk begins @ 4:10pm / Ends @ 5:00pm

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