

1038-76-329

Wenfang Cheng and **Xiaoming Wang***, Department of Mathematics, Florida State University, Tallahassee, FL 32306. *A scheme for stationary statistical properties of the infinite Prandtl number model.*

We propose a semi-discrete in time semi-implicit numerical scheme for the infinite Prandtl model for convection. Besides the usual finite time convergence, this scheme enjoys the additional highly desirable feature that the stationary statistical properties of the scheme converge to those of the infinite Prandtl number model at vanishing time step. One of the key characteristics of the scheme is that it preserves the dissipativity of the infinite Prandtl number model uniformly in terms of the time step. So far as we know, this is the first rigorous result on convergence of stationary statistical properties of numerical schemes for infinite dimensional dissipative complex systems. (Received February 12, 2008)