

**Meeting:** 1001, Evanston, Illinois, SS 11A, Special Session on Stability Issues in Fluid Dynamics

1001-76-297      **Zhiwu Lin\*** (zlin@cims.nyu.edu), 251 Mercer St., Courant Institute, New York, NY 10012.

*Nonlinear Instability of Ideal Plane Flows.*

We study nonlinear instability of stationary ideal plane flows. For any bounded domain and very general steady flows, we showed that if the linearized equation has an exponentially growing solution then the steady flow is nonlinearly unstable. The nonlinear instability is in the sense that we can find an initial perturbation arbitrarily close to the steady flow such that the  $L^p$  norm of the velocity perturbation grows exponentially beyond a fixed value. (Received August 30, 2004)