

1053-35-257

Jerry L. Bona, IL, **Chun-Hsiung Hsia*** (willhsia@math.ntu.edu.tw), Department of Mathematics, National Taiwan University, No. 1, Sec. 4, Roosevelt Rd., Taipei, 10617, Taiwan, and **Tian Ma** and **Shouhong Wang**. *Hopf bifurcation of the oceanic convection problems.*

A key problem in climate dynamics is to understand and predict the periodic, quasi-periodic, aperiodic and fully turbulent characteristics of large scale geophysical flows. Bifurcation theory enables us to determine how qualitatively different flow regimes appear and disappear as a control parameter varies, and to explore the theoretical limits of predicting these flow regimes. In this talk, we focus on the onset of Hopf bifurcation due to the stratification of the oceanic fluid. (Received September 07, 2009)