MATH COLLOQUIUM

Dynamic Transition Theory for Magnetohydrodynamic(MHD) Equations

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Date : Wednesday, August 5, 2009
Time : 15:00
Place : TB 250, Boğaziçi Üniversitesi

Abstract: First, we will briefly discuss the dynamic transition theory, recently developed by Ma & Wang. The key philosophy of this theory is to search for the full set of transition states, giving a complete characterization on stability and transition. The set of transition states is represented by a local attractor rather than some steady states or periodic solutions or other types of orbits as part of this local attractor. Second, we will describe the dynamic transition of the incompressible 3D-MHD equations in a rectangular domain. The analysis shows that the system undergoes a first transition either to multiple equilibria or to periodic solutions. In the case of transition to multiple equilibria, the transition is type-I (continuous). In the case of transition to periodic solutions, the transition can be either type-I or type-II (jump).

Tea and coffee will be served at 16:00