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GLOBAL REGULARITY FOR THREE-DIMENSIONAL NAVIER-STOKES EQUATIONS AND OTHER RELEVANT GEOPHYSICAL MODELS

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Abstract

The basic problem faced in geophysical fluid dynamics is that a mathematical description based only on fundamental physical principles, the so-called the “Primitive Equations”, is often prohibitively expensive computationally, and hard to study analytically. In this talk I will survey the main obstacles in proving the global regularity for the three-dimensional Navier–Stokes equations and their geophysical counterparts. Even though the Primitive Equations look as if they are more difficult to study analytically than the three-dimensional Navier–Stokes equations I will show in this talk that they have a unique global (in time) regular solution for all initial data.

This is a joint work with Chongshen Cao.

Date: Friday, April 6, 2007

Time: 14:30

Place: IMBM Seminar Room, Boğaziçi University