Department of Mathematics
University of Notre Dame

PDE, COMPLEX ANALYSIS AND DIFFERENTIAL GEOMETRY SEMINAR

Guest Speaker: Jiahong Wu
University of Notre Dame



Date: Tuesday, March 25, 2025
Time: 11:00 AM
Location: 258 Hurley Bldg
Zoom URL: NA

Lecture Title:

Global regularity problem on 2D Boussinesq equations with partial or fractional dissipation

Abstract

Boussinesq equations are the primary model for buoyancy-driven fluids such as hurricanes, tornadoes and Rayleigh-Benard convection. Mathematically, the 2D Boussinesq system retains some key features of the 3D Euler and Navier-Stokes equations such as the vortex stretching mechanism. In fact, the 2D inviscid Boussinesq has a one-to-one correspondence with the 3D axisymmetric Euler. Extensive efforts have been devoted to the global regularity problem on the Boussinesq equations and significant progress has been made. This talk summarizes recent advances in the global regularity results for the 2D Boussinesq equations with partial or fractional dissipation. Details on some of the fractional Boussinesq regularity results will be presented.

Jiahong Wu - University of Notre Dame