

学术报告

Global well-posedness of the 2D
Boussinesq equations with partial
dissipation

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报告地点：天津大学 6 号楼 111 教室

报告摘要：In this talk, I shall first introduce some recent well-posedness of the 2D Boussinesq equations with anomalous dissipation terms. I shall also examine the global regularity problem on the two-dimensional (2D) incompressible Boussinesq equations with fractional partial dissipation. The goal is to establish the global existence and regularity for the Boussinesq equations with minimal dissipation and thermal diffusion. By working with this general 1D fractional Laplacian dissipation, we are no longer constrained to the standard partial dissipation and this study will help understand the issue on how much dissipation is necessary for the global regularity. Due to the nonlocality of these 1D fractional operators, some of the standard energy estimate techniques such as integration by parts no longer apply and new tools including several anisotropic embedding and interpolation inequalities involving fractional derivatives are derived. These tools allow us to obtain very sharp upper bounds for the nonlinearities. This is a joint work with Prof. J. Wu, L. Xue and Z. Ye.

欢迎大家参加！