

TEMPLE UNIVERSITY

Department of Mathematics

Analysis Seminar

Room 617 Wachman Hall

Monday, September 17 2018, 2:40 p.m.

SQG in bounded domains

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Abstract: I will describe results regarding the surface quasi-geostrophic equation (SQG) in bounded domains. The results concern global interior Lipschitz bounds for large data for the critical SQG in bounded domains. In order to obtain these, we establish nonlinear lower bounds and commutator estimates for the Dirichlet fractional Laplacian in bounded domains. As an application, global existence of weak solutions of SQG are obtained. If time permits, I will also discuss an application to an electroconvection model.