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Juraj Foldes* (foldes@virginia.edu), 141 Cabell Drive, Kerchof Hall, Charlottesville, VA 22901, and **Nathan Glatt-Holtz**, **Geordie Richards** and **Jared Whitehead**. *Invariant measures for stochastically forced Boussinesq equations and onset of convection.*

We will discuss statistically stable steady states for stochastically forced Boussinesq system and investigate possible scenarios for the onset of convection. In particular, we will show that in comparison to the deterministic forcing, stochastic forcing with small strength can have stabilizing effect whereas large strength can have destabilizing effect. Most of the analysis will be performed in the highly degenerate case that has not been considered in the literature. The core of the proofs is a subtle analysis of non-trivial stochastic variational problems.

This is a joint work with Nathan Glatt-Holtz, Geordie Richards, and Jared Whitehead. (Received March 21, 2017)