

# Almost exponential decay of Benard convection problem without surface tension

Binqiang Xie<sup>1</sup> and Lan Zeng<sup>2</sup>

<sup>1</sup>Institute of Applied Physics and Computational Mathematics

<sup>2</sup>The Graduate School of China Academy of Engineering Physics

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## Abstract

We consider the dynamics of an Boussinesq approximation Benard convection uid evolving in a three-dimensional domain bounded below by a xed atten boundary and above by a free moving surface. The domain is horizontally periodic and the eect of the surface tension is neglected on the free surface. By developing a priori estimates for the model, we prove the global existence and almost exponential decay of solutions in the framework of high regularity.

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