Abstract Submitted for the DFD10 Meeting of The American Physical Society

A new analysis of the Rayleigh-Benard instability¹ ANDREA PROSPERETTI², Johns Hopkins University — An approach to the solution of the Rayleigh-Benard stability problem different from the standard one produces a very simple approximate solution in closed form which differs by less than 1% from the exact result. Using the same procedure, the effect of finite thermal conductivities of the top and bottom plates and of suspended, thermally active particles on the stability threshold is also investigated.

¹Supported by the National Science Foundation under grants CBET-0625138 and CBET-0754344.

²Also: University of Twente, The Netherlands

Andrea Prosperetti Johns Hopkins University

Date submitted: 05 Aug 2010 Electronic form version 1.4