

Abstract Submitted
for the DFD08 Meeting of
The American Physical Society

Heat Convection in a Vertical Channel JEAN-CHRISTOPHE TISSERAND, MATHIEU CREYSSELS, Ecole Normale Supérieure Lyon, MATHIEU GIBERT, MPI Göttingen, BERNARD CASTAING, FRANCESCA CHILLÀ, Ecole Normale Supérieure Lyon — The Rayleigh-Benard flow, heat convection between two horizontal plates at different temperatures, has been the most studied system of thermal convection. Recent controversies stressed the interest of a better knowledge of the bulk flow. However, in this situation, the heat transfer is mainly controlled by the neighborhood of the plates. Therefore, we had to build a vertical long channel in which the flow forgets the plates. In this configuration, the flow is, either globally ascending in the left part, and descending in the right one, or the opposite. The paper focuses in a first part on the study of these flow-reversals thanks to correlation functions and particle image velocimetry. In a second part, the paper gives an interpretation of results in terms of velocity of plumes.

Jean-Christophe Tisserand
Ecole Normale Supérieure Lyon

Date submitted: 03 Aug 2008

Electronic form version 1.4