

Abstract Submitted  
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**Reversals of the Large-scale Circulation in Turbulent Thermal Convection in Small Aspect-ratio Geometry**<sup>1</sup> HENG-DONG XI, KE-QING XIA, The Chinese University of Hong Kong — We present experimental studies of flow reversals and cessations in turbulent thermal convection in cells of aspect ratio ( $\Gamma$ ) less than one. It is found that cessations of the large-scale circulation (LSC) occur not only in  $\Gamma = 1$  cells but also in  $\Gamma = 1/2$  and  $1/3$  cells, and they occur in these small aspect ratio cells an order of magnitude more frequently than in  $\Gamma = 1$  cells. The experiment reveals that in these small aspect ratio cells  $180^\circ$  is the most probable orientational angular change of the LSC's circulation plane after a cessation. The time interval of successive cessations is found to distribute exponentially. It is further found that a cessation correspond to decoherence of the LSC.

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