

Abstract Submitted  
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**Thermal Convection From a Minimal Flow Unit to a Wide Fluid Layer** CURTIS HAMMAN, PARVIZ MOIN, Center for Turbulence Research, Stanford University — The computations of the “minimal channel” by Jiménez & Moin (1991, JFM) provided a conceptual framework and building block from which to study the structure of near-wall turbulence driven by mean shear. Mean buoyancy, on the other hand, can sustain a vigorous field of very large eddies whose horizontal extent can extend across many full channel heights. We examine the extent to which a flow model consisting of a finite periodic array of such structures can successfully predict certain turbulence statistics in thermal convection with and without a mean flow in very large-aspect ratio channels.

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