
The global flow structure in a Rayleigh-Bénard cell of aspect ratio =3

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Abstract

Thermal convection in nature or engineering applications often occurs in an environment, whose lateral extent is larger than the vertical one. Experimental velocity or temperature data in such a geometry is rare, in particular, if the Rayleigh number is high. We will present velocity measurements undertaken in a Rayleigh-Bénard cell of aspect ratio $\Gamma = 3$ and a Rayleigh number of $Ra = 1.4 \times 10^{10}$. The working medium was air with a Prandtl number of $Pr = 0.7$. We used

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