Stable long-wavelength convection with Dirichlet thermal boundary conditions through a Batchelor-Nitsche instability ALARIC ROHL, LAYACHI HADJI, The University of Alabama — It is a well known fact that the onset of Rayleigh-Bénard convection occurs via a long-wavelength instability when the horizontal boundaries are thermally insulated. In this work, we consider three-dimensional Rayleigh-Bénard convection in a cell of infinite extent in the x-direction and having vertical walls located at $y = 0$ and $y = \delta$ and horizontal boundaries located at $z = 0$ and $z = h$. We assume stress-free boundary conditions and thermally conducting walls. We put forth a set of values of the parameter δ for which we show the existence and stability of long-wavelength convection.

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