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Interaction between a free boundary and thermal convection in an annulus JIN-QIANG ZHONG, Physics Dept., NYU, JUN ZHANG, Physics Dept. and Courant Inst., NYU — We report an experimental study in turbulent thermal convection that has a free upper surface. The geometry of the convective system is annular with aspect ratio (girth/height) 6.8 and with periodic boundary condition. Our experiment studies the interaction between the convective flow and a freely moving floating boundary that partially covers the open surface. The floating boundary position and the corresponding convective pattern are recorded at the same time and are correlated to reveal the dynamics of the coupled system. Our experiment aims to illustrate the intricate mechanism of continental drift that is driven by mantle convection.

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