

Abstract Submitted
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Optical Actuation of Rayleigh-Bénard Convection ADAM PERKINS, MICHAEL SCHATZ, Georgia Institute of Technology — We report on a new optical approach to manipulate convective flow. The working fluid in the convection apparatus is a binary mixture of gases that strongly absorbs light at selected optical wavelengths. Laser light absorption results in localized heating, thereby altering the fluid flow. Rapid scanning of laser light allows actuation at multiple spatial points nearly simultaneously. By directing the light from above or below, the heating can be either locally stabilizing or destabilizing. Preliminary results on imposing and controlling complex convection patterns will be discussed.

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