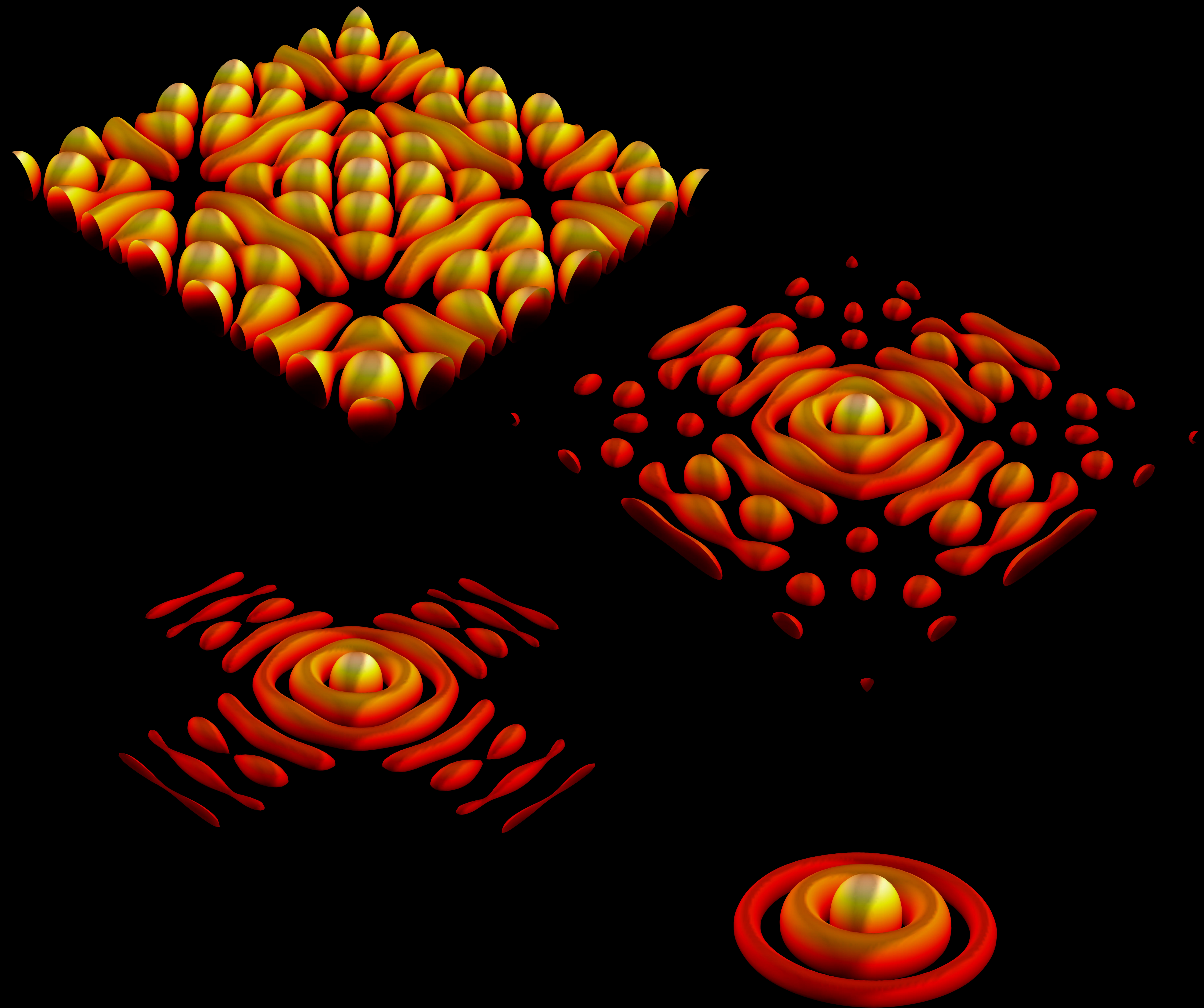# Convectons

Stefan Zammert and Bruno Eckhardt

The asymptotic suction boundary layer over a uniformly heated plate shows a subcritical instability of the conductive state. The spatially extended convection state undergoes a three-dimensional long-wavelength instability for decreasing Rayleigh number that leads to a doubly-localized equilibrium solution – the so-called convecton. The convecton is an exact solution of the equations with circular convection rolls.

The state is visualized via iso-surfaces of the absolute value of the wall-normal velocity. The surfaces are color-coded according to the distance to the plate. The Rayleigh number decreases from upper left to lower right.

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