Bergeon, A.; **Knobloch, E.**

Periodic and localized states in natural doubly diffusive convection. (English) Zbl 1138.76039

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Summary: We employ a numerical continuation to follow branches of steady doubly diffusive convection in a vertical slot driven by imposed horizontal temperature and concentration gradients. No-slip boundary conditions are used on the lateral walls; periodic boundary conditions with large spatial period are used in the vertical direction. A variety of different states, both spatially periodic and spatially localized, are identified, and the profusion of the resulting solution branches is linked to a phenomenon known as homoclinic snaking.

MSC:

76E06 Convection in hydrodynamic stability
76R10 Free convection
76R50 Diffusion

Keywords:

instability; numerical continuation; homoclinic snaking

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