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Drifting localized structures in doubly diffusive convection EDGAR KNOBLOCH, University of California at Berkeley, DAVID LO JACONO, ALAIN BERGEON, IMFT, Université de Toulouse, UPS-INP — We use numerical continuation to compute a multiplicity of spatially localized states in doubly diffusive convection in a vertical slot driven by imposed horizontal temperature and concentration differences. The calculations focus on the so-called opposing case, in which the resulting gradients are in balance. No-slip boundary conditions are used at the sides and periodic boundary conditions with large spatial period are used in the vertical direction. This system exhibits homoclinic snaking of stationary spatially localized structures with point symmetry [1,2]. In this talk we demonstrate the existence, near threshold, of drifting pulses of spatially localized convection that appear when mixed concentration boundary conditions are used, and use homotopic continuation to identify similar states in the case of fixed concentration boundary conditions. We show that these states persist to large values of the Grasshof number and provide a detailed study of their properties. [1] A. Bergeon E. Knobloch, Phys. Fluids 20, 034102 (2008). [2] C. Beaume, A. Bergeon E. Knobloch, Phys. Fluids 25, 114102 (2013).

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