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A stability and bifurcation analysis of the doubly-diffusive convection.

In this talk, we classify the stabilities of the doubly-diffusive convection according to four parameters, namely the Prandtl number, the Lewis number, the salinity Rayleigh number, and the thermal Rayleigh number. For the regimes of the exchange of stabilities, we derive the types of bifurcations together with a full stability analysis of the bifurcating solutions. (Received February 11, 2008)