

Soret-Driven Convection in a Binary Fluid with Coriolis Force

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Abstract : The influence of diffusion of the thermal or known as Soret effect in a heated Binary fluid model with Coriolis force is investigated theoretically. The linear stability analysis is used, and the eigenvalue is obtained using the Galerkin method. The impact of the Soret and Coriolis force on the onset of stationary convection in a system is analysed with respect to various Binary fluid parameters and presented graphically. It is found that an increase of the Soret values, destabilize the Binary fluid layer system. However, elevating the values of the Coriolis force helps to lag the onset of convection in a system.

Keywords : Benard convection, binary fluid, Coriolis, Soret

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