

Gravidiffusion in the liquid state. An attempt at a mathematical description

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Vertically directed diffusive transport in liquids can be amplified or impeded by the force of gravity. This modified diffusion is called a gravidiffusion. In this paper, we present a mathematical description of the process for certain initial and boundary conditions. Our interest in gravidiffusive transport is motivated by possible biophysical applications. We investigate transport processes which could explain mechanisms of gravity detection in live organisms (geo-induction) as well as their response (geo-reaction).