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Settling-induced heat transport FRANCOIS BLANCHETTE, University of California Merced, WILLIAM DOUANDJU, SYDNEY MONTROY — We discuss the influence of settling particles on heat transport within suspensions. We focus on particles that equilibrate their temperature with the surrounding fluid much faster than their typical settling time. Such particles act as heat carriers and heat transport therefore occurs through both diffusion and particle settling. We quantify this effect by deriving the relevant governing equations. We investigate the stabilizing effect of this enhanced transport on unstable density gradients via a linear stability analysis. We conclude by discussing systems where this effect is important, such as rivers coming into the ocean, magma chambers, and when large concentrations of volcanic and forest fire ashes are present in the atmosphere.

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