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**Effect of inertia of water droplets on a turbulent cloud: a toy model** RAMA GOVINDARAJAN, RAVICHANDRAN SIVARAMAKRISHNAN, TIFR Centre for Interdisciplinary Sciences, Tata Institute of Fundamental Research, Hyderabad — We ask whether the fact that water droplets are inertial can affect the upward trajectory of a cloud. We answer in the affirmative using a toy model, where the turbulent cloud is represented by a distribution of point vortices. Viscosity is neglected and the water droplets are assumed to be point particles whose inertia only gives rise to a drag against the flow. The growing water droplets are shown to cluster in a curtain-like structure along the sides of the cloud as it rises through the atmosphere, causing repeated cycles of nucleation, growth and departure of water droplets in the central region of the cloud. The net effect is a slowing down of the loss of water vapour, and the resulting “slow release” of buoyancy allows the cloud to attain a higher height.

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