

Experiments on particle clouds in sugar syrup

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Particle laden flows, such as settling and sedimentation of solid particles in a fluid, are often observed in our daily life, yet our understanding of their behavior is poor. To clarify the physics of the flows will advance our understanding of the geomorphological phenomena observed in the various landforms. Here, we report Kitchen Experiments on an initially blob suspension of solid particles falling due to gravity in a viscous fluids. We use iron sands for the solid particles, which enable us to control the initial position and geometry of the blob suspensions by magnets. This *magnet-iron sand* system allows you to place the iron sands anywhere you want! The sugar syrup is used for the viscous fluid, which is very sweet and tasty drink, and then we change the viscosity of the fluid as a parameter. We will show the behavior of falling particle clouds and their interesting nature ranging through solid, fluid, and gas-like flows. Then we will try to explain the mysterious and puzzling landforms observed on the Earth and the other planets by our inspiration from the Kitchen Earth Experiments.