Painting erosion effects in flow over granular beds

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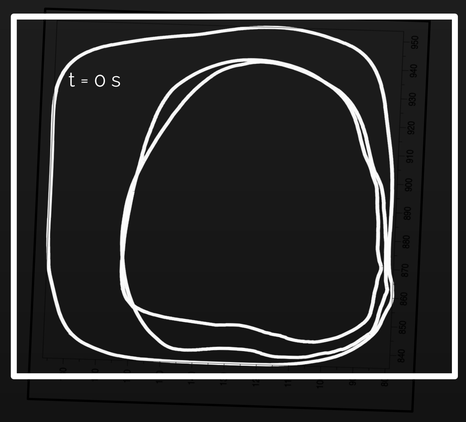
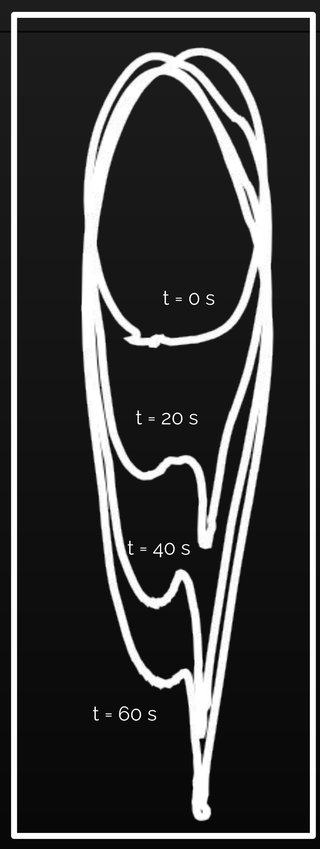
We study the dynamics of viscous fluids going over particles in the context of landscape erosion. Silicone oil flows down an incline plane over lumps of grains mixed with fluid. Changes in the particle bed concentration lead to pronounced erosion rates and particle transport. These images show sand particle beds, of different colors and increasing oil concentration, after the fluid has eroded them. The purple lump has the largest oil concentration while the red lump is dry sand. The dry sand red square experiences the least amount of erosion while the oily purple square, located at a symmetrical location, experiences more particle erosion.

Erosion Size



Particle Front



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