



**CLARK UNIVERSITY
DEPARTMENT OF PHYSICS
Ph.D. Research Proposal**

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“Shear strength of sedimented granular beds”

Abstract: I will be discussing the movement of granular particles sedimented in fluids under simple shear. There have been many comprehensive studies where friction between particles, or fluid forces determine the behavior of a large system under shear, but combining a discrete granular response and a continuous fluid response in a combined system has proven difficult. Even after centuries of research observing river-beds, sea shores, dunes, and other natural wide-spread phenomenon we still have very few insights into the mechanisms behind how the bedforms are change and move.

In this talk I will be discussing some preliminary work where we examine a single grain under shear flow by a fluid and how it rolls over a single barrier. This will be followed by empirical observations of a sedimented granular bed of thousands of particles, and how it behaves below and above the critical threshold for steady state surface particle erosion. I will be discussing our findings with respect to various observational relations used to predict particle transport and flux.

Wednesday, February 13, 2019

12:30 pm - Room S-122, Sackler Sciences Center