

PHYSICAL MATHEMATICS SEMINAR

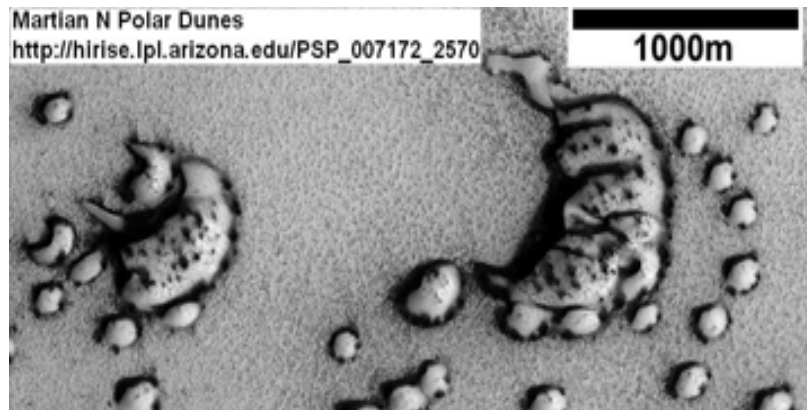
DUNE AND DUNE FIELD MORPHOLOGY

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ABSTRACT:

Many dune fields exhibit regular patterns with apparent characteristic size and spacing, while others contain dunes of very disparate size. Although current dune evolution models are able to replicate isolated dune structures through consistent and reasonable parameter manipulation, they do not yield information about what controls and stabilizes dune field morphology – local conditions such as topography or sand supply, or general dynamic processes such as those relating to saltation or dune collisions. I will present a multi-scale model developed to explore the influence of dune collisions on pattern-formation within dune fields, and demonstrate that both influx dune sizes (those dunes found at the spatial start of the field) and dune collision dynamics (relating to the exchange of sand between interacting dunes) influence the long-term dynamics of a dune field. I will then discuss the implications these results have with regards to observations of terrestrial and martian dunes, and future dune field modeling efforts.



TUESDAY, NOVEMBER 17, 2009

2:30 PM

Building 2, Room 105

*Refreshments at 3:30 PM in Building 2, Room 290
(Math Department - Common Room)*



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