

# JOINT TUFTS/MIT COSMOLOGY SEMINAR

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## *Multifield Dynamics, Inflation and the Very Early Universe*

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Abstract: Single-field slow-roll inflation provides a simple theory of the very early universe. However, many candidate theories of high energy physics contain hundreds of scalar degrees of freedom. Consequently, cosmologists must confront the possibility that simple is not necessarily synonymous with natural, and that inflation involves multiple scalar fields. Qualitatively, multifield inflation itself can be subdivided into "few-field" and "many-field" cases. Intriguingly, many-field inflation can be easier to understand and more predictive than scenarios with just a handful of fields, and several inflationary scenarios have interesting and robust "large N" limits. Finally, I will speculate on the implications of this work for landscape-like cosmological scenarios, and identify potentially fruitful lines of enquiry in multifield inflationary dynamics.

Tuesday, May 5, 2015, 2:30 pm

Robinson Hall, Room 250

Tufts University

Refreshments at 2:00 in Knipp Library, Room 251