

# JOINT TUFTS/MIT COSMOLOGY SEMINAR

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## *Natural Inflation and Quantum Gravity*

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Cosmic inflation can readily involve energy scales close to the Planck mass where quantum gravity effects become important. While one could still hope to describe inflation within a quantum (effective) field theory, general considerations of black hole quantum mechanics suggest nontrivial constraints on any effective field theory model of inflation that emerges as a low-energy limit of quantum gravity. Particularly important constraints are imposed by the Weak Gravity Conjecture, which I'll discuss and motivate. We show that higher-dimensional gauge and gravitational dynamics can elegantly satisfy these constraints and lead to a viable, theoretically-controlled and predictive class of natural inflation models.

Tuesday, October 6, 2015, 2:30 pm

Cosman Seminar Room

Center for Theoretical Physics

Building 6C, Room 6C-442

Massachusetts Institute of Technology

Refreshments at 2:00 in the same room