JOINT TUFTS/MIT COSMOLOGY SEMINAR

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nu-LambdaCDM: How Neutrinos help reconcile Planck with the Local Universe

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The measurements of the early Universe made by the Planck experiment are precise enough to be used to predict much of the Universe's subsequent evolution. Comparing those forecasts with other observations allows us to test cosmological models. When we use the simplest model of flat ΛCDM, this comparison seems to fail: the locally measured expansion rate, H_0, and the late-time abundance of galaxy clusters disagree with the values that the Planck parameters would predict. A possible resolution to this mismatch is to change the model by adding new neutrino physics. Yet tension among the datasets remains even in the modified model. This suggests that either the search for a correct model may not yet be finished or that one or more of our datasets may be beset by underestimated systematic errors.

Tuesday, February 25, 2014, 2:30 pm
Robinson Hall, Room 250
Tufts University

Refreshments at 2:00 in Knipp Library, Room 251