

Carnegie Mellon University

Department of Physics

McWilliams Center for Cosmology

Colloquium

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Tuesday, October 12, 2010

4:30 pm

Doherty Hall A301D

“Is the Universe (Statistically) Isotropic?”

Abstract:

Inflation predicts that the Universe is homogeneous and isotropic--- that is, it is the same everywhere and in every direction.

Cosmological homogeneity and isotropy are generally *assumed* to be true, but this is a prediction that can be tested quantitatively. I

will first discuss some new tests of statistical homogeneity and isotropy, and related tests for a preferred cosmological frame. I will then review briefly some recent evidence that may show a departure from homogeneity and present a theoretical model that may account for this anomaly. In the last few minutes, I may speculate wildly about the pre-inflationary Universe.