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# CTOm KMI Seminar

Monday, July 23, 2012

3:30 pm, KMI Science Symposia (ES-635)

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“New probes of initial state of quantum  
fluctuations during inflation”

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## Abstract:

How did inflation actually happen? Precision measurements of statistical properties of primordial fluctuations generated during inflation offer a direct probe of the physics of inflation. When we calculate statistical properties of primordial fluctuations generated during inflation, we usually assume that the initial state of quantum fluctuations is in a preferred vacuum state called Bunch-Davies vacuum. While there is some motivation for choosing such a state, this is an assumption, and thus needs to be tested by observations. In this talk I will present new probes of initial state of quantum fluctuations during inflation: the 3-point function of the cosmic microwave background anisotropy, the 2-point function of galaxies, and a spectral distortion of the thermal spectrum of the cosmic microwave background.