



# Introduction to String Cosmology

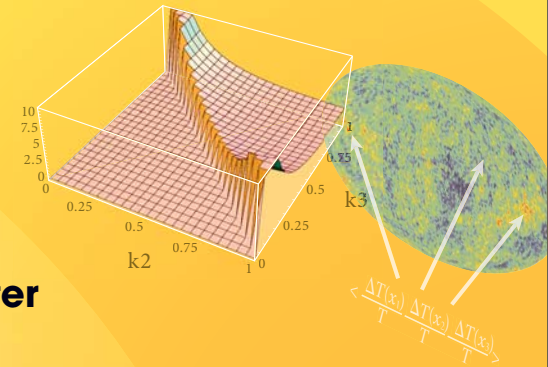
**Gary Shiu**

University of Wisconsin – Madison

**11, 13 & 15 Jan 2010** (Mon, Wed & Fri)

**4:00 – 5:00 pm**

**Ben C. M. Wong Technology Education Theater  
(Room 6580, 6/F via Lifts 27-28), HKUST**



## *Abstract*

String theory and cosmology are made for each other. Fundamental questions about the early universe call for an understanding of quantum gravity. On the other hand, observational cosmology provides a promising window to probe physics at the smallest distance scale. These lecture series will introduce the basic concepts of string cosmology, focusing on cosmic inflation as a link between string theory and observation. We will argue that an inflationary universe – our current theoretical paradigm of the macroscopic world – is incomplete on its own and requires a microscopic completion. Some recent developments in constructing inflationary models from string theory and the observational signatures of these models will be discussed. The material should be accessible to students who have a basic knowledge of quantum mechanics.

## *About the Speaker*

**Prof Gary Shiu** received his PhD degree in Physics from Cornell University in 1998. He has held research appointments at the C.N. Yang Institute for Theoretical Physics at Stony Brook, and the University of Pennsylvania before joining the faculty of the University of Wisconsin, Madison where he is currently Associate Professor of Physics. Prof Shiu's research interests span a wide range of areas in string theory, high energy physics, and cosmology, with an emphasis on connecting fundamental theory to experiments. Among the honors he received include a Guggenheim Fellowship, a Cottrell Scholar Award, a Research Corporation Innovation Award, and a National Science Foundation Career Award. He was also named a Kavli Frontiers Fellow in the National Academy of Sciences, and a Vilas Faculty Associate. He has held visiting professorships at Stanford University and the Perimeter Institute for Theoretical Physics. In this academic year, he is a member of the Institute for Advanced Study, Princeton, and a visiting Fellow of IAS at HKUST.