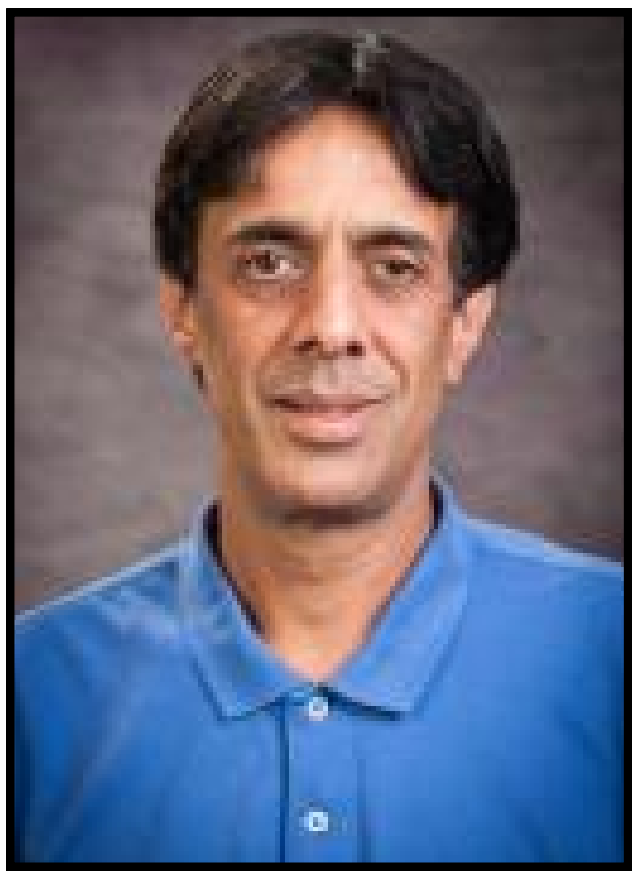
ASU Department of Physics
Arizona State University

COLLOQUIUM

Thursday, September 26th, 2024

Refreshments at 3:15pm outside PSF 101
Colloquium from 3:30pm - 4:30pm in PSF 101



Spatial Curvature, Dark Energy Dynamics, Neither, or Both

Prof. Bharat Ratra

Kansas State University

Abstract:

Observations over the last two and half decades have persuaded cosmologists that (as yet only indirectly detected) dark energy is by far the main component of the energy budget of the current universe. I review a few simple dark energy models and compare their predictions to observational data, to derive dark energy model-parameter constraints and to test consistency of different data sets. I conclude with a list of open cosmological questions.

Biography:

Bharat Ratra, distinguished professor of physics, works in the areas of cosmology and astroparticle physics. He researches the structure and evolution of the universe. Two of his current principal interests are developing models for the large-scale matter and radiation distributions in the universe and testing these models by comparing predictions to observational data. In 1988, Ratra and Jim Peebles proposed the first dynamical dark energy model. Dark energy is the leading candidate for the mechanism that is responsible for causing cosmological expansion to accelerate. The discovery that cosmological expansion is accelerating is one of the most significant scientific discoveries of the last quarter of a century. Ratra has received more than $14 million in individual and collaborative grants, largely from the Department of Energy and the National Science Foundation. Ratra was a National Science Foundation CAREER award winner in 1999. He was named a fellow of the American Physical Society in 2002, a fellow of the American Association for the Advancement of Science in 2005, and a fellow of the American Astronomical Society in 2023. Ratra joined Kansas State University in 1996 as an assistant professor of physics. He was a postdoctoral fellow at Princeton University, the California Institute of Technology and the Massachusetts Institute of Technology. Ratra earned a doctorate in physics from Stanford University and a master's degree from the Indian Institute of Technology in New Delhi.

Host: Prof. Tanmay Vachaspati
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