



LUDWIG-  
MAXIMILIANS-  
UNIVERSITÄT  
MÜNCHEN

ARNOLD SOMMERFELD  
CENTER FOR THEORETICAL PHYSICS



# Sommerfeld Theory Colloquium

Prof. Abhay Ashtekar

**Penn State University, USA**

## The Quantum Nature of the Big Bang in Simple Models

According to general relativity, space-time ends at singularities and classical physics just stops. In particular, the big bang is regarded as The Beginning. However, general relativity is incomplete because it ignores quantum effects. Through simple models, I will illustrate how the quantum nature of space-time geometry resolves the big bang singularity. Quantum physics does not stop there. Indeed, quantum space-times can be vastly larger than what general relativity had us believe, with unforeseen physical effects in the deep Planck regime.

**Wednesday, 18<sup>th</sup> June 08, 11:15 h, Room 348 / 349, Theresienstr. 37 / III**

Prof. V. Mukhanov