



Western University
Department of Physics and Astronomy

PHYSICS & ASTRONOMY COLLOQUIUM

Date: **Thursday, 28 November 2019**
Time: **1:30 p.m.**
Location: **Physics & Astronomy Seminar Room 100**

Dr. Hamsa Padmanabhan

Canadian Institute for Theoretical Astrophysics (CITA)
University of Toronto

“Deciphering the baryonic universe: From Cosmic Dawn till today”

ABSTRACT

The history of baryonic structures, particularly after the epoch of ‘Cosmic Dawn’—the onset of the earliest stars and galaxies—is widely considered the ‘final frontier’ of observational cosmology today. Over the last decade, considerable effort has gone into investigating the nature of baryonic matter, theoretically and observationally. I will overview my current research related to atomic hydrogen and its evolution over 12 billion years of cosmic time, which involves a novel data driven framework developed for interpreting current and future observations. Extensions of this model pave the way towards a comprehensive understanding of molecular gas evolution, allowing us to interpret results from ongoing surveys. I will introduce a new approach capable of unmasking the hitherto elusive nature of Damped Lyman Alpha (DLA) systems, the largest high-redshift reservoirs of atomic hydrogen. These studies open up the exciting possibility of constraining fundamental physics from the Cosmic Dawn.

HOST: S. Basu

COFFEE + light snacks will be available in the Atrium, 2nd floor, at 1:15 p.m.