



Connecting inner space & outer space

By

Prof. Subir Sarkar
University of Oxford, UK

7 January 2019 at 5:00 P.M.

Venue : Dr. Homi Bhabha Auditorium, TIFR

Abstract:

Over a century ago we learnt that the Earth is constantly bombarded by high energy cosmic rays from outer space. This initiated a glorious era of discovery of new particles and developed into accelerator-based research in high energy physics. This led to the Standard Model which provides a precise description of all fundamental processes including, with the discovery of "a Higgs boson", an understanding of how particles acquire mass. Unfortunately the Standard Model does not explain any of the salient features of the universe as a whole - why there is matter but no antimatter? why there is so much more dark matter of unknown origin? why is the expansion rate apparently accelerating, as if driven by presence of dark energy? I will describe how new experiments and theoretical developments at the rapidly growing interface of astroparticle physics are attempting to answer these cosmic questions ...

About the speaker:

Professor Subir Sarkar is an internationally renowned scientist in the field of astroparticle physics. After graduation from IIT Kharagpur, he pursued research in cosmic ray physics for Ph.D. from TIFR. Prof. Sarkar is the head of particle theory group at University of Oxford and has made seminal contributions to astroparticle physics. He is recipient of several awards including STFC (UK) Fellowship, and Niels Bohr Professorship. He is the fourth winner of the Homi Bhabha Award instituted by TIFR and IUPAP.

