Astronomy & Astrophysics Division Seminar

Title : **The Study of blazars with AstroSat and prospectives in multi-messenger era**

Speaker : *Dr. Sunil Chandra (North-West University, Potchefstroom, South Africa)*

Date : 04.01.2018 (Thursday)

Time : 16:00 Hrs

Venue : Seminar Room # 113/114 (Thaltej Campus)

Abstract:

The blazars are subclass of Active Galactic Nuclei (AGN), having a bipolar jet of ultra-relativistic plasma oriented very close of our line of sight. Seen at very close angles, the emission from blazars is mostly dominated by the jet. Therefore, the blazars provide a unique sample to understand the acceleration and collimation mechanisms, taking place very close to the central engine. It also enables us the diagnostics of magnetic field, jet morphologies and particle energy distributions. We have been monitoring a sample of bright blazars, utilizing the unique capacity of AstroSat, i.e., the strictly simultaneous coverage from opt/UV to hard X-rays. These observations are mostly co-ordinated with optical/IR observations by ground based observatories, namely MIRO and HCT. During this seminar I aim to discuss a number of interesting results obtained from the studies performed over the course of last two years. The blazar's jet can also be treated as very efficient particle accelerator. The neutrino events are expected to coincide with the flares in blazars. The recent observations by ICECUBE and HAWC have shown some positive hints to this hypothesis, however, still no firm

confirmation is obtained. I will also try to discuss the possible contributions of multi-messenger approach to understand the blazar's jet.
