

TATA INSTITUTE OF FUNDAMENTAL RESEARCH
DEPARTMENT OF ASTRONOMY & ASTROPHYSICS

Speaker : Dr. Mathias Schultheis
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Title : Stellar populations in the central 200 pc of the Galaxy

Day, Date & Time : Tuesday, 10 November, 2009 at 16.00 hrs

Venue : Lecture Theatre (AG-66)

Abstract

The study of the inner galactic Bulge is an important key for galactic evolution and galactic formation models. Due to the rising of deep infrared data, much progress has been obtained during the last five years in galactic Bulge studies. However, many open questions still remain, which are important to be solved in order to understand the formation of the Bulge of our Galaxy.

I will present here the study of the inner few 2 square degrees of our Galaxy and will focus especially on the study of AGB stars using SPITZER data. As AGB stars are the main producers of interstellar dust and as they are very luminous, they are ideal tracers of the stellar population in the galactic Bulge. One characteristic of AGB stars is their large amplitude variation due to pulsation. I studied the behaviour of the pulsational properties of Long Period Variables (LPVs) in different galactic environments such as the galactic Bulge, the LMC and SMC. These results show that in the infrared, the period-luminosity relation of AGB stars is universal. Therefore AGB stars can be seen as excellent extragalactic distance indicators.

The Galactic Center region is an active star formation region. I will present here the first direct spectroscopic evidence of three young massive objects (YSOs) found recently by An et al. (2009). In addition, I will present spectroscopic follow-up projects in order to detect more of these massive YSOs which gives constraints about star formation rates and the initial mass function.