

# ASTRONOMY SEMINAR

June 1, 2010

Speaker : Dr. Sundar Srinivasan  
Institut d'Astrophysique de Paris, France.

Title : The GRAMS AGB Models -- Calculating the Mass-Loss Return to the LMC from SED Fits to Spitzer SAGE Data

Day, Date & Time : Tuesday, 15 June, 2010 at 16.00 hrs

Venue : Lecture Theatre (AG-66)

(J.S.Yadav)

## **Abstract**

*We have calculated luminosities and mass-loss rates for thousands of Large Magellanic Cloud (LMC) O- and C-rich asymptotic giant branch (AGB) star candidates identified in the Spitzer SAGE (Surveying the Agents of a Galaxy's Evolution) survey by fitting synthetic photometry derived from the GRAMS (Grid of RSG and AGB Models) grid. The SAGE IRAC + MIPS 24 micron data combined with UBVIJHKs photometry furnish information over the entire wavelength range relevant to AGB stars. SAGE detects all the significant mass-losing sources in the LMC. The spectral energy distribution (SED) fits to these sources confirm their AGB status and provide us with luminosities and mass-loss rates for the entire LMC AGB population. We use this information to calculate the total AGB dust budget and compare our results to previous empirical studies that used mid-IR excesses and colors. AGB stars are among the most significant contributors of dust to the ISM; our study will thus provide a better understanding of the role of AGB dust production in the LMC.*