

DEPARTMENT OF ASTRONOMY & ASTROPHYSICS

ASTRONOMY SEMINAR

October 11, 2011

Speaker : Arunima Banerjee,
Indian Institute of Science, Bangalore

Title : Vertical Structure of Disk Galaxies & their
Dark Matter Halos

Day, Date & Time : Tuesday, October 18, 2011 at 1600 hrs

Venue : Lecture Theatre (AG-66)

(A. Gopakumar)

Abstract

The vertical structure of disk galaxies can be looked upon both as a treasure trove of rich physics as well as a tracer of the galactic dark matter halos. In the inner region of an ordinary spiral galaxy, the disk dynamics is regulated by the self-gravity of the stars and the gas, while in the outer galaxy the dark matter halo dominates. In the first part of the talk, I will elucidate the crucial but hitherto ignored effect of the gas gravity on the stellar vertical structure. In the second part, I will discuss how in the outer galaxy, the gas vertical structure acts as a sensitive probe of the galactic dark matter density profile including its shape, and present the results from our work.