

# Department of Theoretical Physics

## Free Meson Seminar

<i>Speaker</i>	:	Santosh Kumar Das (VECC, Kolkata)
<i>Topic</i>	:	Characterizing quark gluon plasma by Heavy Flavors
<i>Day, Date &amp; Time</i>	:	Thursday, January 27, 2011 at 2:30 p.m.
<i>Place</i>	:	AG 69

### *Abstract*

The drag and diffusion coefficients of charm and bottom quarks propagating through quark gluon plasma have been evaluated for conditions relevant to nuclear collisions at Large Hadron Collider and Relativistic Heavy Ion Collider. Both the radiative and collisional processes of energy loss are included in evaluating the effective drag and diffusion coefficients. The Landau-Pomeranchuk-Migdal (LPM) and the dead cone effects on the radiative energy loss of heavy quarks have been included. With the effective transport coefficients the Fokker Plank (FP) equation has been solved for the evolution of heavy quarks in QGP. The solution of the FP equation has been used to evaluate the nuclear suppression factor,  $R_{AA}$  and the elliptic flow,  $v_{2HF}$  for the non-photon single electron spectra resulting from the semi-leptonic decays of hadrons containing charm and bottom quarks. The role of non-zero baryonic chemical potential on  $R_{AA}$  has been highlighted.

*(Nilmani Mathur)*