Area Seminar

Title	Precise Estimate of Multipolar Black-body Radiation Shifts in the Atomic Ion Clocks
Date and Time	21/05/2012 16:00:00
Speaker	Dillip Nandy Physical Research Laboratory, Ahmedabad
Area	Theoretical Physics
Venue	Room No. 469
Abstract	It is not very far to reach the 10?18 fractional uncertainty in the atomic clocks that may redefine the unit of time. Optical transitions with ultranarrow frequencies in the singly positively charged atomic ions are the ultimate choices for the atomic clocks. The major problem in setting up the best accurate atomic clock is lying in the reduction of uncertainties associated with the systematic shifts that the atomic systems undergo during the experiment.To achieve below 10?18 fractional uncertainty in the atomic clocks, it would be prerequisite to estimate the uncertainties that may occur due to the multipolar black-body radiation shifts in these clocks. In the present talk, I will discuss our recent work to estimate these shifts in Ca+ and Sr+ clocks which are under consideration at different laboratories around the world.