Area Seminar

Title	Equation-of-motion coupled-cluster method and its application to probe variation in the fine structure constant
Date and Time	17/07/2014 11:00:00
Speaker	Dillip Nandy PRL
Area	Theoretical Physics
Venue	Room No. 469
Abstract	To answer the speculated concept of possible temporal variation of the fine structure constant (alpha), precise observations of the absorption lines in astrophysics are vital. These observational results in combination with accurately calculated sensitivity coefficients for the variation of the fine structure constant in the atomic energy levels can put stringent constraint on the variation of alpha. In this talk, I shall highlight some evidences on the variation of alpha from the astrophysical observations and compare them with the results obtained from the atomic clock experiments. For further investigations, we propose consideration of new astrophysical interesting candidates with enhanced alpha variation effects to extract out these information more convincingly. We have developed a relativistic coupled-cluster method in the equation-of-motion framework to perform the corresponding calculations which will be briefly discussed.