Area Seminar

Title	Vacuum polarization correction in many electron atoms with triples excitation in relativistic coupled-cluster theory
Date and Time	18/04/2013 16:00:00
Speaker	Siddhartha Chattopadhyay PRL, Ahmedabad
Area	Theoretical Physics
Venue	Room No. 469
Abstract	In this talk We shall discuss about the importance of the vacuum polarization correction in the calculation of orbital energies in many electron atoms. The Uehling potential is the leading order term in the vacuum polarization. We incorporated the Uehling potential in the Dirac-Hartree-Fock self consistent field calculation of many electron atoms. We shall discuss how it affects the orbital energies and why it is important for highly charged ions. We will discuss some preliminary results of highly charged Barium ions. In the next part we will discuss about the triples excitation in the relativistic coupled-cluster (RCC) theory. Most of the RCC calculations are done with the singles and doubles excitations. Because of complicated angular momentum diagram and enormous computational cost there are very few calculations have been performed with the actual triples excitation. We will discuss the necessity of triples excitation in present era of high precision calculation. We will present some preliminary results of Lithium in the framework of RCCSDT theory.