ICTS Seminar

Title : New relativistic effective interaction for finite nuclei, infinite nuclear matter and neutron stars

Speaker : Bharat Kumar, Institute of Physics, Bhubaneswar

Date : Thursday, November 16, 2017

Time : 3:30 PM

Venue : Nambu Discussion Room (Left), ICTS Campus, Bangalore

Abstract : In this talk, I will describe about are newly generated parameter set for finite, infinite nuclear matter and neutron stars within the effective field theory motivated relativistic mean field (ERMF) formalism. The isovector part of the ERMF model employed in the present study includes the coupling of nucleons with the δ, ω, and ρ mesons along with their cross-interactions. The second part comprises the application of the new parameter set for finite and infinite nuclear matter system. The obtained results like binding energy, radii for finite nuclei, and energy and pressure densities for infinite nuclear matter case are compared with the recent experimental data. Finally, I will cover the neutron star properties and the prediction of various tidal deformabilities obtained by this model. In conclusion, I will show that the obtained results are quite comparable with the recent experimental data including tidal deformability with GW170817 observation of the binary neutron stars.