Title: Neutron skins of heavy nuclei and tidal polarizability of neutron star

Abstract: In this talk, we will discuss two new parameter sets for the energy density functional such as G3 and IOPB-I for finite nuclei, and infinite nuclear matter system 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 to the δ and ρ mesons and the cross-coupling of ρ mesons to the σ and ω mesons. The results for the finite and infinite nuclear systems obtained using our parameter sets are in harmony with those data extracted from various experiments. In particular, the neutron-skin thickness of ^{208}Pb nucleus and canonical radius of the neutron star are compatible with the GW170817. The low-density behavior of the equation of state for pure neutron matter is in good agreement with other microscopic models. Also, we calculate the maximum mass, and tidal deformability which are in quite well with the GW170817 as well as with the pulsar data.