

## Infinite nuclear matter characteristics of finite nuclei within relativistic mean field formalism

*Sunday 9 September 2018 14:30 (20 minutes)*

The present study establishes a correlation between the neutron skin thickness and the infinite nuclear matter characteristics for the even-even isotopes of Fe, Ni, Zn, Ge, Se, and Kr. The axially deformed self-consistent relativistic mean field for the non-linear NL3\* is used for the analysis. The coherent density functional method is adopted to formulate the symmetry energy, the neutron pressure and the curvature of finite nuclei as a function of the nuclear radius. The mass dependence on the symmetry energy in terms of the neutron-proton asymmetry for mass  $70 \leq A \leq 96$  are studied. From this analysis, we found a notable signature of a shell closure at  $N = 50$  in the isotopic chains of Fe, Ni, Zn, Ge, Se and Kr nuclei. The present study reveals an interrelationship between the characteristics of infinite nuclear matter and the neutron skin thickness of finite nuclei

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