Contribution ID: **94**   Type: **Oral**

Isovector proton-neutron pairing and Wigner energy in Hartree-Fock mean field calculations

Monday, 31 August 2015 17:00 (15 minutes)

We propose a new approach for the treatment of isovector pairing in self-consistent mean field calculations which conserves exactly the isospin and the particle number in the pairing channel. The mean field is generated by a Skyrme-HF functional while the isovector pairing correlations are described in terms of quartets formed by two neutrons and two protons coupled to the total isospin T=0. In this framework we analyse the contribution of isovector pairing to the symmetry and Wigner energies [1]. It is shown that the isovector pairing is able to provide a good description of the Wigner energy, which is not the case for the mean field calculations in which the isovector pairing is treated by BCS-like models.

[1] D. Negrea and N. Sandulescu, Phys. Rev. C 90, 024322 (2014).

Primary author: NEGREA, Daniel Ciprian (National Institute of Physics and Nuclear Engineering, Bucharest, Romania)

Co-author: Dr SANDULESCU, Neculai (National Institute of Physics and Nuclear Engineering, Bucharest, Romania)

Presenter: NEGREA, Daniel Ciprian (National Institute of Physics and Nuclear Engineering, Bucharest, Romania)

Session Classification: Nuclear Structure, Spectroscopy, and Dynamics II