Contribution ID: **42** Type: **not specified**

Large-scale configuration interaction description of the structure of nuclei around 100Sn

Thursday, 18 February 2016 09:40 (25 minutes)

In this talk I would like to give a brief review on our recent studies regarding the structure of nuclei around 100Sn. I will first introduce the collectivity properties in Sn and Te isotopes and the possible role played by the cross-shell excitation and the quadrupole-quadrupole correlation. In particular, I will also show that the seniority symmetry is dynamically conserved in j=9/2 shells irrespective of type of interaction. This may be a unique phenomenon for nuclear physics, which is characterized by large spin-orbit coupling. Moreover, I will show for systems with equal number of protons and neutrons, the seniority coupling is broken and, as a result, a new form of spin-aligned proton-neutron pair coupling is favored. The effect of such couplings on alpha and other decay properties will also be discussed.

References:
M Doncel, T Bäck, DM Cullen, D Hodge, C Qi et al. Physical Review C 91 (6), 061304 (2015)
H Jiang, C Qi, Y Lei, R Liotta, R Wyss, YM Zhao, Phys. Rev. C 88 (4), 044332 (2013)
AN Andreyev, M Huyse, P Van Duppen, C Qi, ..., Phys. Rev. Lett. 110, 242502 (2013)
T. Bäck, C. Qi et al. , Phys. Rev. C 87, 031306(R) (2013).
C. Qi, Z. Xu, Phys. Rev. C 86, 044323 (2012).

Primary author: Dr QI, Chong (Royal Institute of Technology (KTH))

Presenter: Dr QI, Chong (Royal Institute of Technology (KTH))

Session Classification: Talks