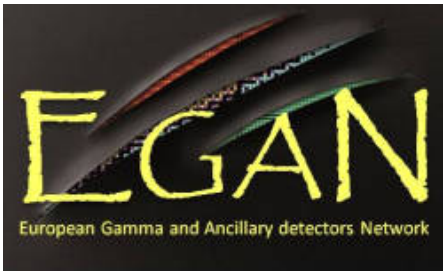

Contribution ID: **69** Type: **not specified**

Correlations versus shell evolution in the Nuclear Shell Model

Tuesday, June 28, 2011 9:00 AM (30 minutes)

New trends in nuclear structure focus on the evolution of the spherical mean-field all over the nuclear chart. In a shell model context, occurence of magic numbers or development of regions of deformation result as a delicate balance between the monopole field and the residual correlations.
We will illustrate the interplay between spherical shell gaps and deformation quadrupole correlations in several regions of the chart of nuclides. We will focus on the transitions from sphericity to deformation in neutron rich system at N=20 and N=40 and discuss the nature of strong correlations in proton rich systems at the N=Z line. In particular, the isoscalar versus isovector nature of correlations in paladium, cadmium and xenon self-conjugate systems will be discussed.

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Session Classification: Nuclear Theory