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Study of neutron monopole drift towards ^{78}Ni with AGATA at GANIL and BEDO at ALTO

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Recent experimental discoveries have revealed that the neutron effective single particle evolution above ^{78}Ni shows peculiar and unpredicted behaviours. Our study us mainly focussed on the neutron $g_{7/2}$ effective single particle energy (ESPE) evolution towards ^{78}Ni. This evolution should be driven by the same tensor mechanism which produces a quasi-degeneracy of the $d_{5/2}$-$g_{7/2}$ orbits in the ^{100}Sn region. The light odd-neutron N=51 nuclei constitute the most interesting cases in order to study this evolution and constrain theoretical models. We have performed two complementary experiments to populate $\frac{7}{2}^+$ states in ^{83}Ge, one in flight experiment at GANIL, using the fusion-fission Be+^{238}U reaction to populate Yrast states, one ISOL experiment at ALTO using the decay of ^{83}Ga to populate non-Yrast states. The experiment at GANIL was made with AGATA, VAMOS and a plunger which permit to distinguish single particle (long lived) or collective (short lived) origin of potential $\frac{7}{2}^+$ state. The experiment at ALTO used the Compton suppressed gamma spectrometer BEDO including 2 tapered and 2 clovers of HPGe. In this poster, the physics motivation, the experimental arrangements and preliminary results will be presented.

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