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Test of the N=50 neutron gap in the vicinity of 78Ni and systematics of neutron-rich Ge nuclei

In the case of N=50 isotopes from 90Zr to 78Ni, the first 0+, 2+ and 4+ states are based on proton excitations inside the fp shell. The proton excitation to the g9/2 orbital conducts to negative spin states. However, the 5+, 6+ and 7+ states correspond mainly to neutron excitations across the N=50 gap. Thus, the evolution of the excitation energy of these states (partially known in 82Ge and unknown in 80Zn) as a function of Z, allows to deduce the N=50 gap in 78Ni.
A set of neutron-rich nuclei is produced in a fusion-fission reaction with 238U beam on 9Be target. The several fission fragments are selected by the VAMOS++ spectrometer. The prompt gamma rays are measured in coincidence with the fission fragments by the AGATA array composed of 8 triple-clusters.
Preliminary results on neutron-rich Ge isotopes will be presented.

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