

# GAMMA-RAY SPECTROSCOPY OF NEUTRON-RICH NUCLEI BEYOND N=50 SHELL CLOSURE IN THE VICINITY OF $^{78}\text{Ni}$ USING AGATA COUPLED TO VAMOS++

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This presentation reports on new results from experiment E680 performed at GANIL during the first AGATA campaign. The primary goal of the experiment was to probe the medium spin structure of neutron-rich nuclei in the vicinity of  $^{78}\text{Ni}$ , to experimentally determine the size of the N=50 gap as well as the  $\pi f_{5/2}-\pi p_{3/2}$  spacing in  $^{79}\text{Cu}$ . Highly excited neutron-rich nuclei from Cu to Pd isotopes have been produced using the fusion-fission mechanism in inverse kinematics for the  $^{238}\text{U} + ^9\text{Be}$  reaction around the Coulomb barrier. The combination of the large acceptance VAMOS++ spectrometer and the AGATA gamma tracking array at GANIL provide a unique opportunity to obtain an event-by-event unambiguous (A,Z) identification of one of the fission fragments, and the prompt gamma-rays emitted in coincidence with unprecedented resolution. In this presentation, we will report and discuss new spectroscopic information in neutron-rich Kr isotopes around N=60 demonstrating the high-potential of these data set. New excited states evidenced in  $^{96}\text{Kr}$  isotope will be used to discuss the evolution of the collectivity at N=60 for Kr isotopes and the sudden transition from almost spherical to strongly deformed shapes already observed in this region.