

## Relativistic coulex of 73,74,75Ni

*Tuesday, 10 September 2013 16:30 (20 minutes)*

The study of neutron-rich Ni isotopes, towards  $^{78}\text{Ni}$ , is one of the main topics in nuclear physics with exotic beams. In fact, the persistency of the  $N=50$  shell gap far from stability is still an open question with many profound implications on the study of the nuclear structure. The availability of radioactive beams has provided the opportunity to study such neutron-rich Ni isotopes with the in-flight separation technique. Results have been obtained for  $^{70}\text{Ni}$  with coulex at GANIL (LISE facility) [1], and for  $^{72}\text{Ni}$  with the plunger technique at MSU, although the experiment is still under analysis. For  $^{74}\text{Ni}$  a  $p, p'$  measurement was performed at MSU [2], providing information on its nuclear deformation.

In this talk we will report the preliminary results on the coulex of  $^{73,74,75}\text{Ni}$ , performed at Riken. The isotopes of interest were obtained from the fission of a primary  $^{238}\text{U}$  beam, at an energy of 345 MeV/u and an intensity of about 8-9 pnA. The separated secondary beam impinged on a  $^{208}\text{Pb}$  target at the centre of the DALI array, made of 186 scintillators for gamma detection. The first excited states in  $^{73,74,75}\text{Ni}$  were observed, allowing one to estimate the E2 strength from the ground state. The experiment was run in parallel with another experiment of the EURICA stopped beam campaign, aimed at studying neutron-rich nuclei below  $Z=28$  via decay spectroscopy.

[1] O. Perru et al., Phys. Rev. C96, 232501 (2006)

[2] N. Aoi et al., Phys. Lett. B692, 302 (2010)

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