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## Study of neutron-proton pairing with transfer reactions.

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In the present work, the study of transfer reactions in  $^{56}\text{Ni}$  is presented. The study is focusing in the neutron-proton pairing, which is a local interaction inside the nucleus. In addition with the mean field potential in the nucleus pairing induces correlations. There are two channels for pairing, one with isospin  $T=1$  (isovector) and the other with isospin  $T=0$  (isoscalar), in which pairing is expected to be stronger. One of the studied transfer reactions is the  $(d,\alpha)$ , which it only highly populates bound states with  $T=0$  due to the isospin conservation.

The experiment was performed in GANIL, Caen in spring of 2014. The aim is to measure the energy and angle of the  $\alpha$  particles emitted from the  $(d,\alpha)$  reaction in forward direction. For this purpose a high granularity Silicon stripped detector was placed in this direction, which is called MUST2. For the time calibration purposes a time calibrator module has been used. The first results concern the Time of Flight (ToF) analysis, which is used for mass identification.

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