

## $^{62}\text{Ni}(\vec{p}, \alpha)^{59}\text{Co}$ Reaction at 23 MeV.

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The  $^{62}\text{Ni}(\vec{p}, \alpha)^{59}\text{Co}$  and  $^{63}\text{Cu}(\vec{p}, \alpha)^{60}\text{Ni}$  reactions have been measured in a high resolution experiment [1,2] in order to identify at high excitation energy multiplets of  $^{60}\text{Ni}$  states (daughter states) homologous to the lowest excitation energy states of  $^{59}\text{Co}$  (parent states). To this aim the angular distributions of cross sections ( $\sigma(\theta)$ ) and analyzing powers ( $A_y(\theta)$ ) of the  $^{62}\text{Ni}(\vec{p}, \alpha)^{59}\text{Co}$  reaction have been measured from  $10^\circ$  to  $62.5^\circ$  in two different magnetic settings of the Q3D magnetic spectrograph. A DWBA analysis of  $\sigma(\theta)$  and  $A_y(\theta)$  has been performed in finite range

approximation, assuming a triton pickup mechanism, with the computer code TWOFNR [3], using the optical model parameters reported in table 1. The figure reports the comparison between experimental (dots) and calculated (solid lines)  $\sigma(\theta)$  and  $A_y(\theta)$  for some  $^{59}\text{Co}$  states.

### References

- [1] P. Guazzoni *et al.* Annual report 2007, p. 8.
- [2] P. Guazzoni *et al.* Annual report 2007, p. 9.
- [3] M. Igarashi, Computer code TWOFNR, (1977).

Table 1:

	$V_r$ (MeV)	$r_r$ (fm)	$a_r$ (fm)	$W_v$ (MeV)	$r_v$ (fm)	$a_v$ (fm)	$W_d$ (MeV)	$r_d$ (fm)	$a_d$ (fm)	$V_{so}$ (MeV)	$r_{so}$ (fm)	$a_{so}$ (fm)	$r_c$ (fm)
p	52.1	1.17	0.75	2.14	1.32	0.58	7.7	1.32	0.58	6.20	1.01	0.75	1.25
$\alpha$	206.8	1.41	0.52	25.8	1.41	0.52							1.40

