The ^{116}Sn(p,t)^{114}Sn Reaction

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In order to study the nuclear structure in the Sn region via (p,t) reactions [1], we have measured the ^{116}Sn(p,t)^{114}Sn reaction at 25 MeV incident energy, using a proton beam of 250 nA intensity on the target provided by the Munich MP Tandem accelerator. The outgoing tritons analyzed with the Q3D magnetic spectrograph have been detected by the high resolution 1.7 m focal plane detector. Angular distributions were measured for 11 angles from 6^o to 65^o, using a 100 μg/cm^2 ^{116}Sn target on a carbon backing of 5.6 μg/cm^2 enriched at 96.8 % [2].

The triton spectra were analyzed with the computer code Autofit. About 50 levels have been observed up to an excitation energy of 4 MeV.

The experimental angular distributions for some transitions are reported in the figure together with the theoretical curves obtained in the framework of a semimicroscopic pick up theory. The calculations have been performed using the code TWOFNR [3]. The optical model parameters used are reported in reference [4].

References

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[3] M.Igarashi, computer code TWOFNR (1977), unpublished
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