

Abstract Submitted
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Measurements of the $^{89}\text{Y}(\text{n},\text{n}')^{89}\text{Y}^m$ reaction cross section using the ASP D-T fusion source ANDREW SIMONS, MATTHEW GARDNER, BEN WILLIAMS, MICHAEL RUBERY, AWE, NPT TEAM — A programme of measurements of the $^{89}\text{Y}(\text{n},\text{n}')^{89}\text{Y}^m$ reaction cross section has commenced at AWE using the ASP accelerator to impinge deuterons onto tritiated titanium layers mounted on copper discs producing fluxes of approximately 10^{11} neutrons per second. The neutrons are generated for up to half an hour and are used to excite Yttrium into its first isomeric state at 909.1 keV which then decays with a half life of 15.7 seconds. Two other high purity foils (of ^{27}Al and $^{63,65}\text{Cu}$) are used as a reference to establish consistency between the isotopes energetic and temporal decay signatures. These foils mainly serve to check the reported total neutron fluence, produced by the accelerator, incident on the targets. The activation foils are extracted from the irradiation position by a pneumatic transfer system in ~ 7 seconds and are transferred to the counting station in 5 to 30 seconds. Data are taken with a BEGe detector and recorded with both a Canberra Genie analogue system and a Xia Pixie-4 digital system. The results from the first campaigns are presented with a discussion of improvements and future plans.

Andrew Simons
AWE

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