

Abstract Submitted
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Precision Angular Distribution Data for the $^{16}\text{O}(\gamma, \alpha)^{12}\text{C}$ Reaction in the Region of the 1^- Resonance at 9.6 MeV¹ W.R. ZIMMERMAN, M.W. AHMED, A. KAFKARKOU, I. MAZUMDAR, J.M. MUELLER, L.S. MYERS, M.H. SIKORA, S. STAVE, H.R. WELLER, TUNL, M. GAI, A.G. SWINDELL, LNS at Avery Point — The HI γ S Optical Time Projection Chamber has been used to measure angular distributions for the $^{16}\text{O}(\gamma, \alpha)^{12}\text{C}$ reaction at beam energies of 9.4, 9.5, and 9.8 MeV. Intense, nearly-monoenergetic γ -ray beams produced at the HI γ S facility were used with a N_2O gas target, and the outgoing α particles were detected using an optical time projection chamber. High statistics runs were made and full angular distributions were obtained at all three beam energies. The data are being analyzed in an effort to resolve previous discrepancies between the relative $E1$ - $E2$ phase extracted from $^{12}\text{C}(\alpha, \gamma)^{16}\text{O}$ data [1] and those predicted from elastic α -particle scattering on ^{12}C [2].

[1] Assunção *et al.*, PRC **73**, 055801 (2006)

[2] Tischhauser *et al.*, PRC **79**, 055803 (2009)

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William Zimmerman
TUNL

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