

Abstract Submitted  
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**Target Thickness Optimization of  $^{12}\text{C}$  for Tertiary-Neutron Activation at OMEGA** KRISTEN TOSKES, ANNE EMERSON, JENNA DEAVEN, JAMIE LEITER, LAUREN KATE MCNAMARA, SHARON STEPHENSON, Gettysburg College — One way to determine the  $\rho R$  (areal density) of IFC capsules is through tertiary-induced neutron activation of elements with appropriately high thresholds such as  $^{65}\text{Cu}$  or  $^{12}\text{C}$ . Since the tertiary neutron yield is many orders of magnitude lower than the primary yield, the experiment demands modeling to determine the optimal target thickness. Codes such as MCNPX seem well suited for such a project; however, activation eventually causes gamma-coincidences, which cannot be “tallied” in MCNPX. MCNPX can be used to provide particle track information for a known geometry for single gammas. External coding is utilized to fabricate pairs (i.e. coincidences). This allows for the determination of the transmission of both gammas in varied thicknesses of  $^{12}\text{C}$ . The optimal thickness depends on the solid angle, the activation, and the attenuation factor appropriate for each gamma. Results will be presented.

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