

Abstract Submitted
for the DNP16 Meeting of
The American Physical Society

Understanding the Nature of the Low-energy Enhancement in the Photon Strength Function of ^{56}Fe .¹ MICHAEL JONES, LBNL, ANL1564 COLLABORATION — A recent experiment designed to determine the multipolarity and electric or magnetic character of transitions in the region of the photon strength function (PSF) enhancement in ^{56}Fe was performed at ANL using GRETINA in combination with the Phoswich wall[1]. A beam of 16 MeV protons impinged upon a 1 mg/cm² ^{56}Fe target, inelastically exciting it to high energies. The scattered protons were then measured by the Phoswich wall, providing the entrance excitation energy, while the resulting γ -ray cascades were measured in GRETINA. The PSF can be extracted using two-step cascades from the quasicontinuum to specific low-lying levels by a model independent method first employed in ^{95}Mo [2]. This method is being extended to take advantage of GRETINA as a polarimeter to obtain angular and polarization information in the region of the low-energy enhancement of the PSF. Preliminary results will be discussed.

[1] D. G. Sarantites *et al.* Nuclear Instruments and Methods A, 790, 42-55 (2015)

[2] M. Wiedeking *et al.* Phys. Rev. Lett. 108, 162503 (2012)

¹This material is based upon work supported by the U.S. Department of Energy, Office of Science, Office of Nuclear Physics under Contracts No. DE-AC02-05CH11231.

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Date submitted: 01 Jul 2016

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