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**Compact Photon Source for Polarized Target Experiments**

GABRIEL NICULESCU, James Madison University, BOGDAN WOJTSSEKHOWSKI, Thomas Jefferson National Accelerator Facility — High energy photon beams are one of the tools of choice in nuclear and particle physics. However, most of the current techniques used for producing such beams have substantial drawbacks that limit their usefulness (low intensity, large beam size, mixed electron-photon beams). In this presentation we will outline the design of a Compact Photon Source (CPS) capable of providing narrow ( $\sim 1\text{mm}$ ) untagged photon beams of an intensity suitable for carrying out polarized target experiments. Compared with existing technology the CPS will provide a substantial (10-100) increase in the figure-of-merit. While optimized for a Wide Angle Compton Scattering experiment proposed at JLab, the source described here can be used in a variety of photon-induced physics experiments as well as for industrial applications.

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