

Abstract Submitted
for the APR11 Meeting of
The American Physical Society

Development of a non-invasive, continuous polarimeter for Hall C at Jefferson Lab¹ DONALD JONES, University of Virginia, HALL C (JEFFERSON LAB) TEAM, QWEAK COLLABORATION — The stringent requirements of the parity violating experimental program at Jefferson Lab necessitate an accurate knowledge of electron beam polarization. In particular, the tight error budget for the Qweak experiment currently in production in Hall C allows an error of only $\pm 1\%$ for the measurement of electron beam polarization. In order to achieve this, a Compton polarimeter has been recently built in Hall C and is being utilized as part of the polarimetry program. Compton polarimetry derives its analyzing power from the spin dependence of the γ -e interaction and requires a highly polarized coherent beam of photons with well known properties. I discuss the development and performance of a resonant optical cavity at a wavelength of 532 nm for use as a photon target and some of the difficulties encountered in the process, as well as the means of determining intra-cavity beam properties.

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Date submitted: 12 Jan 2011

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