Abstract Submitted
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A Deuteron Polarimeter for an EDM Search[1] E.J. STEPHENSON, G. NOID, IUCF, C.J.G. ONDERWATER, KVI — The proposed search for an electric dipole moment (EDM) on the deuteron using the large induced electric field (in the deuteron rest frame) of a magnetic storage ring requires an efficient method for continuously monitoring the deuteron polarization. We propose to slowly extract the stored beam ($p = 0.7$ GeV/c) using Coulomb scattering from a thin gas target. Scattered deuterons would then enter the polarimeter and scatter from a thick annular carbon target backed by an array of charged-particle detectors. The time dependence of the left-right asymmetry would contain the signal of an EDM. To obtain cross section and analyzing power measurements needed for the polarimeter design, we took data on deuteron-induced reactions and scattering at 80 and 110 MeV using the vector polarized beam at the KVI. Charged-particle telescopes gave energy information on all $Z = 1$ reaction products. Large analyzing powers associated with rainbow scattering were observed.

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