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Measurements of the sensitivity and spatial resolution of radiochromic film using ion beams and X-rays M.J. SCHEPIS, J.P. SHORTINO, K.R. CROMPTON, C.R. STILLMAN, C.G. FREEMAN, SUNY Geneseo, P.M. NILSON, C. SORCE, T.C. SANGSTER, Laboratory for Laser Energetics, U. of Rochester — Radiochromic film (RCF) is used to study protons and other ions that are accelerated from the rear side of targets illuminated with ultra-intense laser light. An experiment is underway to measure the sensitivity of RCF to protons and alpha particles of various energies using the 1.7 MV tandem Pelletron accelerator at SUNY Geneseo. An ion beam incident on a gold foil is used to expose the RCF to elastically scattered ions in a 28-inch diameter scattering chamber. The film is positioned in a circular arc in the chamber so the scattered ion fluence on the RCF strip varies as a function of the scattering angle. After exposure, the RCF is scanned in color negative transmission mode using an Epson 10000 XL flatbed scanner. The red channel of the resulting scan is used to determine the optical density of the film. The spatial resolution of the film was measured by blocking part of the film with a tantalum knife edge. The sensitivity of RCF to X-rays was also measured by exposing the film to X-rays produced by a biological irradiator. The response of the new Gafchromic HD-V2 radiochromic film is compared with the discontinued Gafchromic HD radiochromic film.

Prefer Oral Session
 Prefer Poster Session

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