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Monoenergetic Particle backlighter for Radiography and measuring E and B fields and Plasma Areal density R.D. PETRASSO, C.K. LI, F.H. SÉGUIN, J.A. FRENJE, J.R. RYGG, M. MANUEL, MIT, V. SMALYUK, R. BETTI, S. CRAXTON, J.P. KNAUER, F.J. MARSHALL, D.D. MEYERHOFER, J. MYATT, P.B. RADHA, T.C. SANGSTER, W. THEOBALD, UR-LLE, R.P.J. TOWN, P. AMENDT, P. CELLIERS, S. HATCHETT, D. HICKS, O. LANDEN, A. MACKINNON, P. PATEL, M. TABAK, LNLL — J.COBBLE, N.M. HOFFMAN, G.A. KYRALA, D.C. WILSON,LANL; R. STEPHENS, J. KILKENNY, GA–
A novel monoenergetic particle backlighter source (14.7 and 3.0 MeV P, 3.5 and 0.8 MeV α, and 1.0 MeV T), has been utilized at OMEGA to quantitatively measure the evolution of electric (E) and magnetic (B) fields generated by laser-plasma interactions, and will be utilized in the near future to radiograph plasmas and fields generated from fast ignitor implosions, magnetic compression experiments, magnetized foil experiments, hohlraums and, more generally, from 2- and 3-D laser-plasmas. The backlighter consists of an exploding-pusher glass micro-balloon, filled with D^3He, in which a fraction of the OMEGA 60-beams are used to drive the implosion. The width of the spectral line, $\sim$ 3%, is determined by the burn temperature ($\sim$ 10 keV); the monoenergetic character, as well as multiple particles, enables unique discrimination between E and B fields; it further allows for the probing of cold (warm) plasmas with areal densities of order 1 (10) to 200 (1000) mg/cm**2. New results and planned experiments will be presented.

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