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Novel diagnostic of shock fronts in solid materials M. KOENIG, A. RAVASIO, A. BENUZZI-MOUNAIX, N. OZAKI, B. LOUPIAS, Laboratoire LULI, Ecole Polytechnique, France, M. BORGHESI, C. CECCETI, L. ROMAGNANI, Queens Univ. of Belfast, UK, A. SCHIAVI, Univ. Rome "La sapienza", Italy, T. BOEHLY, LLE, Rochester, NY, USA, A. MACKINNON, P. PATEL, D. HICKS, H.S. PARK, S. LEPAPE, LLNL, Livermore, Ca, USA, R. CLARK, E. HENRY, CEA Bruyeres le chatel, FRANCE, M. NOTLEY, CCLRC/RAL, didcot, UK — We performed an experiment using high-energy protons and hard X-rays to characterize *in situ* the spatial and temporal evolution of a laser-driven shock propagating through a solid material. Shock strength was inferred from shock velocity measurements using a self-emission diagnostic. The transverse high-energy proton beam was generated using a short intense laser beam on a gold backlighter foil. Due to high level scattering, proton beam was only used on a low Z target (CH or C foam). For higher Z material (aluminum), an hard x-ray "1D" backlighter (K-α source of Molybdenum at 17 keV) was obtained using small-edge-on foils. Time evolution of a shock front propagating into both materials C foam and aluminum will be presented.

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