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Highly Radiative Shock Experiments driven by GEKKO XII M. KOENIG, A. DIZIERE, A. RAVASIO, C.D. GREGORY, J.M. BOUDENNE, LULI, Ecole Polytechnique, France, C. MICHAUT, P. BAROSO, Observatoire de Meudon, France, Y. SAKAWA, Y. KURAMITSU, H. TAKABE, ILE, Osaka, Japan, S. BOUQUET, S. LAFITTE, CEA-DIF, DPTA, France, N. OZAKI, Osaka U., Japan, R.P. DRAKE, U. of Michigan, USA — In this paper, recent experimental results on radiative shocks generated by a high power laser in a xenon gas cell are presented. Using the GEKKO XII laser, highly radiative shocks generated with intensity on target up to 10^{15} W/cm^2 were produced. Our original gas cell design sustains a 0.1 bar pressure, lower than previously. The radiative shocks generated are high-Mach number shocks with a strong coupling between radiation and hydrodynamics. Several visible diagnostics were implemented in order to determine shock velocity, temperature and "precursor" electron density. It is the first time that velocities up to 250 km/s are observed in a low-density gaz. Preliminary comparison with 2D radiative hydrodynamic simulations will be discussed.

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