

Abstract Submitted  
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**Determining the hohlraum radiation temperature and M-band fraction by a shock wave technique** WENYI HUO, KE LAN, YONGSHENG LI, Institute of Applied Physics and Computational Mathematics, DONG YANG, SANWEI LI, Research Center of Laser Fusion, Chinese Academy of Engineering Physics — Experiments have been conducted with two materials Al and Ti as shock wave witness plates to demonstrate the proposal of determining the hohlraum peak temperature and M-band fraction. The peak radiation temperature  $T_R$  and M-band fraction  $f_m$  are simultaneously determined by using the observed shock velocities in Al and Ti. This is the first experimental determination of  $T_R$  and  $f_m$  by using the shock wave technique. For the Au hohlraum used in the experiments,  $T_R$  is about 160 eV and  $f_m$  is between 4.3-6.3% under 1ns laser pulse of 2 kJ, and  $T_R$  is about 202 eV and  $f_m$  is about 9% under 1ns laser pulse of 6 kJ. The results from this technique are complementary to those of the broadband soft x-ray spectrometer.

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