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Laser spot movement inside spherical hohlraums and hohlraum energetics HUO WENYI, Institute of Applied Physics and Computational Mathematics, LI ZHICHAO, Research Center of Laser Fusion, Chinese Academy of Engineering Physics, LAN KE, LIU JIE, Institute of Applied Physics and Computational Mathematics — According to the ignition experiments performed at the NIF, the radiation asymmetry is a serious problem to be solved in indirect drive ICF. Lan *et al.* proposed an octahedral spherical hohlraum in order to obtain good radiation symmetry. However, one potential problem of the spherical hohlraum is that the laser beams are close to the hohlraum wall. The wall blow-off may cause the LEH to close faster and result in strong laser absorption in the LEH region. Aimed at alleviating the problem, Lan and Zheng proposed a novel octahedral hohlraum with cylindrical LEHs. In this work, we report the experimental observation of laser spot movements inside the spherical hohlraums with plane LEHs and cylindrical LEHs on the SGIII-prototype laser facility. The experimental results indicate that the cylindrical LEH could dramatically improve the laser propagation inside spherical hohlraum. We also completed the hohlraum energetics experiment on the SGIII-prototype laser facilty. We obtained good reproducible shock velocities in Al and Ti. For the hohlraum used in the experiment, the hohlraum radiation temperature is about 200 eV according to the FXRD's results with the driven laser energy o 5.5 kJ.

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