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Progress on Octahedral Spherical Hohlräum Study KE LAN, JIE LIU, WUDI ZHENG, WENYI HUO, GUOLI REN, DONGXIAN LAI, XIANTU HE, Institute of Applied Physics and Computational Mathematics — In this talk, we report our progress on octahedral spherical hohlraum study. First, we propose a spherical hohlraum with 6 Laser Entrance Holes (LEHs) of octahedral symmetry at a specific hohlraum-to- capsule radius ratio of 5.14, which has robust high symmetry during the capsule implosion. In addition, it also has potential superiority on low backscatter without supplementary technology. Second, we study the laser arrangement and constraints of the octahedral hohlraums. As a result, $\theta^L 50^\circ$ to 60° , the injection angle of laser beams, is proposed as the optimum candidate range for the octahedral hohlraums. Third, we propose a novel octahedral hohlraum with LEH shields and cylindrical LEHs, in order to increase the laser coupling efficiency and improve the capsule symmetry and to mitigate the influence of the wall blowoff on laser transport. Finally, we study the sensitivity of capsule symmetry inside the octahedral hohlraums to laser power balance, pointing accuracy, deviations from the optimal position and target fabrication accuracy.

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