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The simulation studyof foam Au as hohlraum wall in indirect-drive inertial confinement fusion CHANGSHU WU, WENBING PEI, SHAOPING ZHU, Institute of Applied Physics and Computational Mathematics — The high Zmetallic foam ashohlraum wall ca reduce hydrodynamic losses, and hence, net absorbed energy ("wall loss"). Therefore, his approach is used to increase hohlraum couplingefficiency in laser indirect drive inertial-confinement fusion (ICF). We have alsosimulated the foam Au as hohlraum wall with our on-dimensional (1D radiation hydrodynamic code RDMG andtwo-dimensional (2D radiation hydrodynamic code LARED-H. he required radiation drive for capsule implosionis more complex pulse shape, and it has been used to ablate thenormal density Au wall. The simulationresult indicates thekinetic energy fraction is only about 18%, and it is less than that with constant radiation drive. The wall loss is difficult to be reduced by reduced kinetic energy with decreased originaldensity of Au wall, and the wall loss increases in lower density region because of the increased internal energy. Although the wall loss can't be reduced, the 1D simulation result by RDMG indicates that the kinetic energy and theblowoff mass decreasewith decreasedoriginaldensity of Au wall. The 2D simulationresult by LARED-Hindicates that reducedhydrodynamic motion can restrain the motion of laser spots, and that is ofbenefit to the symmetry control.

Yongsheng Li
Institute of Applied Physics and Computational Mathematics

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