Modeling of NIC Symcap and THD Experiments Using High Resolution Integrated Hohlraum-Capsule Simulations[1] OGDEN JONES, JOSE MILOVICH, MARTY MARINAK, SCOTT SEPKE, MEHUL PATEL, NATHAN MEEZAN, DEBORAH CALLAHAN, RICHARD TOWN, SIEGFRIED GLENZER, MARILYN SCHNEIDER, STEVE LANGER, DAVE MUNRO, BRIAN SPEARS, PAUL SPRINGER, JOHN EDWARDS, LLNL, DOUG WILSON, GEORGE KYRALA, JOHN KLINE, LANL — We have developed a capability to do very high spatial resolution 2D integrated hohlraum-capsule simulations using the Hydra code. Surface perturbations for all ablator layer surfaces and the DT ice layer are calculated explicitly up to mode 30 or 100. The effects of the fill tube, grooves in the ice layer, and surface defects on the ablator are included via models extracted from higher resolution calculations. High wave number mix is included through a mix model. Measured backscatter and a model for crossbeam energy transfer are included to enable a best estimate of the drive asymmetry for each shot. We have applied this model to National Ignition Campaign (NIC) experiments from the fall of 2009 and more recent symmetry capsule and cryogenic layered tritium-hydrogen-deuterium (THD) experiments. We compare the measured x-ray and neutron diagnostic signatures to the simulated diagnostic signatures extracted from the model.

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