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**Using ensembles of simulations to find high-fidelity post-shot models of inertial confinement implosions at the National Ignition Facility** RYAN NORA, JOHN E. FIELD, BRIAN SPEARS, CLIFF A. THOMAS, Lawrence Livermore National Laboratory — The inertial confinement fusion program at the National Ignition Facility is performing subscale experiments for a variety of implosion designs. Successful designs, those with experiments that are similar to postshot simulation, will be fielded at larger scale. This work supports the program's effort by establishing high fidelity post-shot simulations matching all experimental observables: scalar data, such as the neutron yield and areal densities; vector data, such as flange nuclear activation diagnostics; and image data, such as time-dependent x-ray self-emission images. We will present a metric for measuring the nearness of postshot simulations to experiments. In particular, we will emphasize area-based (as opposed to contour-based) image analysis metrics (e.g., Zernike moments) for comparison of x-ray self-emission images. The postshot metrics and methodology will be applied to the Big Foot implosion design as an example.

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