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**Study of manufacturing induced defects in beryllium capsules for the National Ignition Facility (NIF)** JAMES COOLEY, STEPHANE LAFITE, DOUG WILSON, Los Alamos National Laboratory, Los Alamos, NM 87545 — Copper doped beryllium (BeCu) has several advantages over plastic (CH) for capsule ablator material. Unfortunately, the manufacturing process for the capsules may introduce defects that may reduce or impede capsule ignition. In this paper, we present current results from an ongoing study at the Los Alamos National Laboratory to address some of these manufacturing related issues. In particular we present results of numerical simulations that examines the effect of a thin,  $<1 \mu\text{m}$ , aluminum (Al) or CH joint that would be present between two machined hemispheres of BeCu. In particular, we examine the jet resulting from the heavily mixed layer<sup>3</sup> after the shock front emerges from the BeCu into the DT ice and DT gas and we speculate on the effect of this jet on ignition. Then, we examine the effect of a fill-hole or fill-tube on jet formation for the BeCu capsule. First, we compare the results of simulations with recent experiments carried out on Omega and discuss implications for future studies. Then, we discuss simulations results for fill-holes and fill-tube and speculate on the effect of these defects on perturbations of the final ignition hotspot. <sup>1</sup> to whom correspondence should be addressed [jhcooley@lanl.gov](mailto:jhcooley@lanl.gov) <sup>2</sup> CEA/DIF, BP12, 91680 Bruyères le Châtel, France <sup>3</sup> S. A. Bel'kov et al., *Physics of Plasmas* **6**, 4728 (1999)

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