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Simulations of laser-driven targets with thin high-Z coatings[1] ANDREW J. SCHMITT, MAX KARASIK, JASON BATES, STEVE OBENSCHAIN, Plasma Physics Division, Naval Research Laboratory — Previous theoretical and experimental work at NRL[2] has shown that very thin (100's of Å) of high-Z — e.g., Au or Pd — layers coated onto targets can be used to suppress early-time laser imprint and RM growth of hydrodynamic instabilities during the low-intensity foot of directly-driven targets. This work has been extended recently[3] to include the use of higher intensity laser spikes that are used for adiabat-tailoring of the target. In these studies, it was shown that a minimum layer thickness (dependent upon the material) was needed before the suppression was observed. Additionally, it was observed that the condition of the layer prior to the drive laser pulse can be crucial to the accurate simulation of the physics. We will address here the physics behind the imprint suppression effects and explore the limitations and sensitivities of modeling these systems. The implications and limits of using even thicker layers to extend the effect further into the laser drive will also be discussed.

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[2]S.P. Obenschain *et al.*, Phys. Plasmas **9**, 2234 (2002).
[3]M. Karasik, *et al.*, to be published

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