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**Role of shock-timing in two-shock platform** NATALIA KRASHENINNIKOVA, PAUL BRADLEY, RICK OLSON, GEORGE KYRALA, BOB PETERSON, BARBARA DEVOLDER, RAHUL SHAH, Los Alamos Natl Lab — In present work we discuss the role of shock-timing and location of shock coalescence in newly developed two-shock platform on NIF. It is generally believed that single-shell capsules perform better when the shocks coalesce in the gas due to lower shell entropy, larger convergence ratio, better hot-spot assembly, and mix. Using HYDRA and RAGE with BHR we investigated this hypothesis for the case of separated reactants capsule and found when shocks coalesced in the gas yield improved by $\sim 50\%$ while acceptance energy only increased by $\sim 3\%$. This suggests that improving shock timing can increase the neutron yield without a significant increase in the drive. The picture of how the mix changes with variation in shock timing is not as crisp as the overall performance. In particular, according RAGE with BHR, the mix mass can be higher or lower depending on the strength of the first shock, even when the location of coalescence is the same. However, DT yield, which is a measure of mix, noticeably increases when the shock coalesce in the gas due to prevalence of higher temperatures in the mixed region. So perhaps the mix mass is more sensitive to the strength of the shocks rather than the location of their coalescence.

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