A Simple Model for the Performance of the First Empty Hohlraum Experiments on NIF[1] MORDECAI ROSEN, LLNL — We present a simple energy balance model for predicting the performance of the first hohlraums to be irradiated on the National Ignition Facility (NIF) as the input energy and power is varied. Key ingredients include the scaling of x-ray conversion efficiency with irradiance (as well as with pulse length), as well as some assumptions about the absorption fraction. Wall loss formulae follow the results of Hammer & Rosen (PoP 10, 1829 (2003)). Other fine points are also considered. Specifically they involve the difference between the Au wall material temperature and a "virtual" drive temperature; the latter differs from the former due to Milne conditions. Also analyzed is the predicted "observed via Dante" temperature which differs yet again from the two former quantities due to albedo / Marshak limb brightening angle-of-view effects.

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