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Re-examining our inhibitions: A speculative re-analysis of data from gold spheres illuminated by the URLLE Omega laser[1] MORDECAI ROSEN, STEVEN ROSS, CLIFF THOMAS, Lawrence Livermore National Laboratory — A 2006 campaign, that illuminated 1 mm diameter gold spheres using the Omega laser at LLE, required the simulations to use a "liberal" flux limiter of f=0.15 (or equivalently a non-local model) in order to match the high levels of measured x-ray emission. In 2013, Thomson Scattering (TS) diagnosed the plasma conditions in the Au sphere's laser heated corona at various radial positions as a function of time. The simulation model using non-local transport compared well for some of the TS data (for ZTe) but not for all of it. Meanwhile, using this model for hohlraums, led to discrepancies with data (such as drive) when applied to some hohlraums, though less-so for others. As a result, hohlraum models with a more restrictive flux limiter, including a "two-stream-instability (TSI)" flux limit model (which, when operative, is effectively f=0.015) are being considered. Here we invoke the possibility that the same ion acoustic turbulence (an outgrowth of the TSI), which acts like an effective scatterer to inhibit electron transport, can, by the same token, also increase absorption. This increase in absorption, applied (speculatively) close by the critical surface, can begin to match the Au sphere x-ray emission, as well as a preponderance of the ZTe data.

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