

Abstract Submitted  
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**Self-similar Isochoric Implosions for Fast Ignition**<sup>1</sup> DANIEL CLARK, MAX TABAK, Lawrence Livermore National Laboratory — Fast Ignition (FI) exploits the ignition of a dense, uniform fuel assembly by an external energy source to achieve high gain. However, in conventional ICF implosions, the fuel assembles as a dense shell surrounding a low density, high-pressure hotspot. Such configurations are far from optimal for FI. Here, it is shown that a self-similar spherical implosion of the type studied by Guderley [Luftfahrtforschung 19, 302 (1942).] and later Meyer-ter-Vehn & Schalk [Z. Naturforsch. 37a, 955 (1982).] may be employed to implode dense, uniform fuel assemblies with minimal energy wastage in forming a hotspot. The connection to realistic (i.e., non-self-similar) implosion schemes using laser or X-ray drive is also investigated.

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