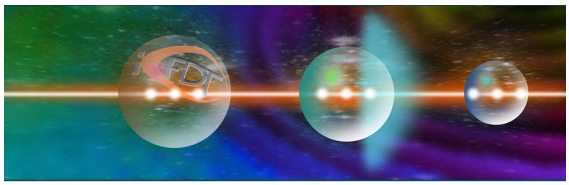

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Review of the Ignition campaign on the National Ignition facility

Monday, 21 October 2024 11:30 (30 minutes)

Fusion energy has been the driven force in the High Energy Density (HED) community for more than fifty years but especially since the start of the National Ignition Campaign in 2009 on the National Ignition facility (LLNL, USA). The National Ignition Campaign, though a marvel in term of laser technology and data quality in this challenging regime, has failed to achieve ignition. This failure has shed lights on gaps of our understanding of fundamental plasma properties such as thermal transport or emissivity. Following these initial difficulties, evolution of the design (higher adiabat, new ablator, new hohlraum conditions) has led to significant improvement in implosion performance over the years and finally to ignition (Q=1.5) in December of 2022. I will go over these evolutions and why they led to the recent successes obtained on the NIF.

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