

Abstract Submitted
for the APR18 Meeting of
The American Physical Society

Carbon Detonation Initiation in Highly Turbulent Electron-Degenerate Matter GABRIEL CASABONA, ROBERT FISHER, Univ of Mass - Dartmouth — Type Ia supernovae play a crucial role as standardizable candles for cosmology, but their stellar progenitors remain mysterious. Underlying this mystery is a crucial physical process: the mechanism of detonation initiation in Type Ia supernovae. Using the FLASH4 code, simulations were run to explore detonation initiation under various initial conditions. Adaptive mesh refinement techniques were utilized in order to refine the limits of successful and unsuccessful detonations. Further research into this topic will clarify the mechanisms giving rise to Type Ia supernovae.

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Date submitted: 11 Apr 2018

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