Turbulently-Driven Detonation Initiation in Electron-Degenerate Matter with Helium

Gabriel Casabona

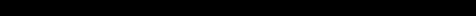
Dept. of Physics, UMass Dartmouth

Physics Day April 30, 2019

Type la Supernovae



Stellar Lifetime



White Dwarf

Degeneracy Pressure



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Zel'Dovich Gradient Mechanism



Turbulence

Kolmogorov's Theory





Carbon Detonation

"Previous Work"

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Helium Detonation

- Talk about double detonation, maybe D6
- use vishal's video

Triple Alpha

Method

detonation times

slice plots

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helium analytic curves

movies

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PDFs

Implications



Future Work

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Credit