M3D-C1 Small-Pellet-Ablation Modeling

by

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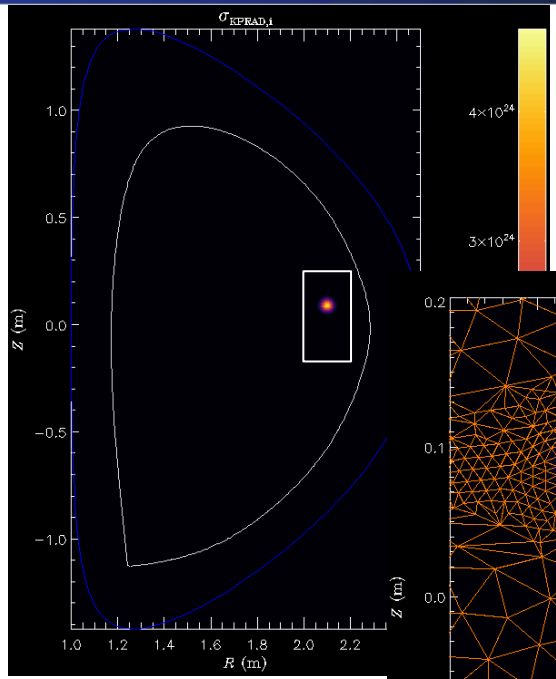
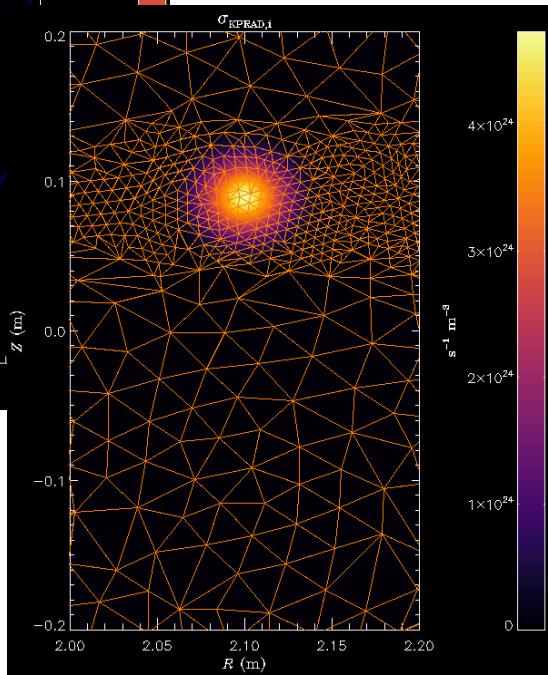
M3D-C1 Modeling Performed For Small Neon Pellet in DIII-D Plasma

- DIII-D Shot 160606 at 2990 ms
- 1 mm pure Neon pellet
- 80 m/s radial, midplane injection
- 2 cm poloidal deposition (highly resolved)

- 2D run
  - `/global/cscratch1/sd/blyons/abl_2D/`

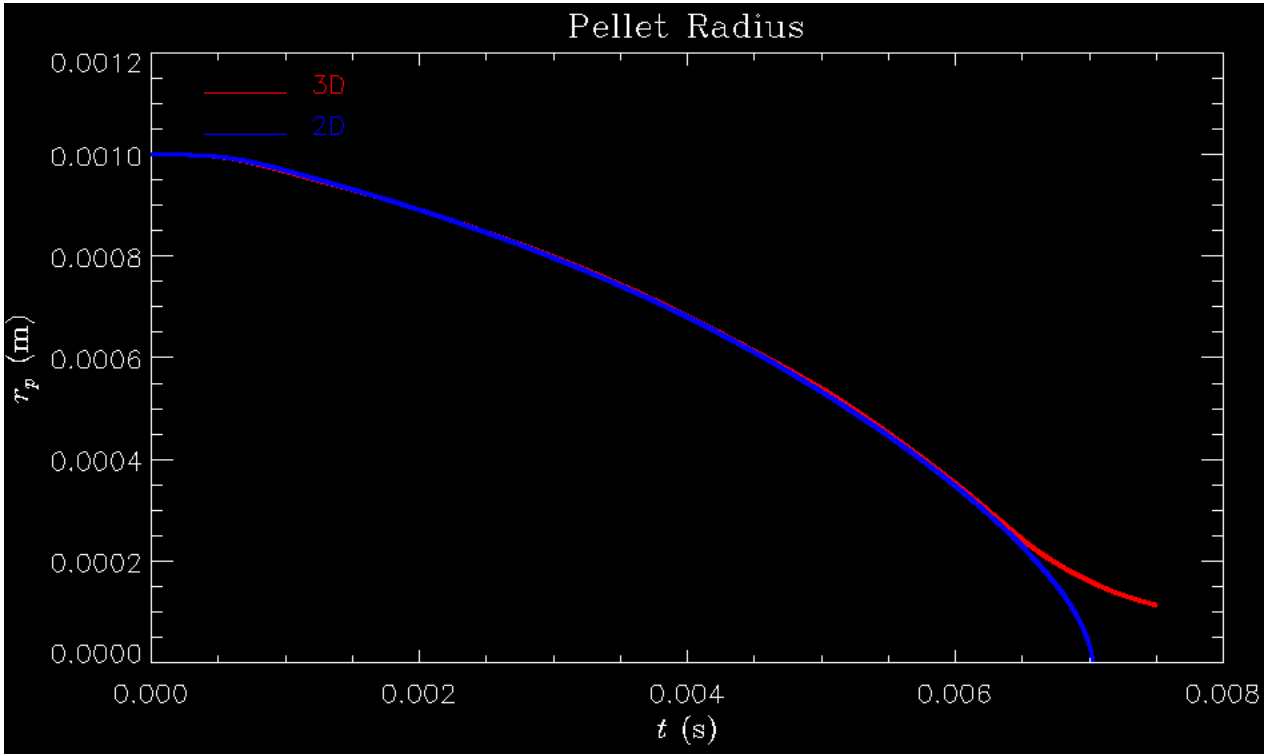
- 3D run (8 planes)
  - Toroidal half-width 1.5 m (~π/8)
  - `/global/cscratch1/sd/blyons/abl_Ne1mm_np8`





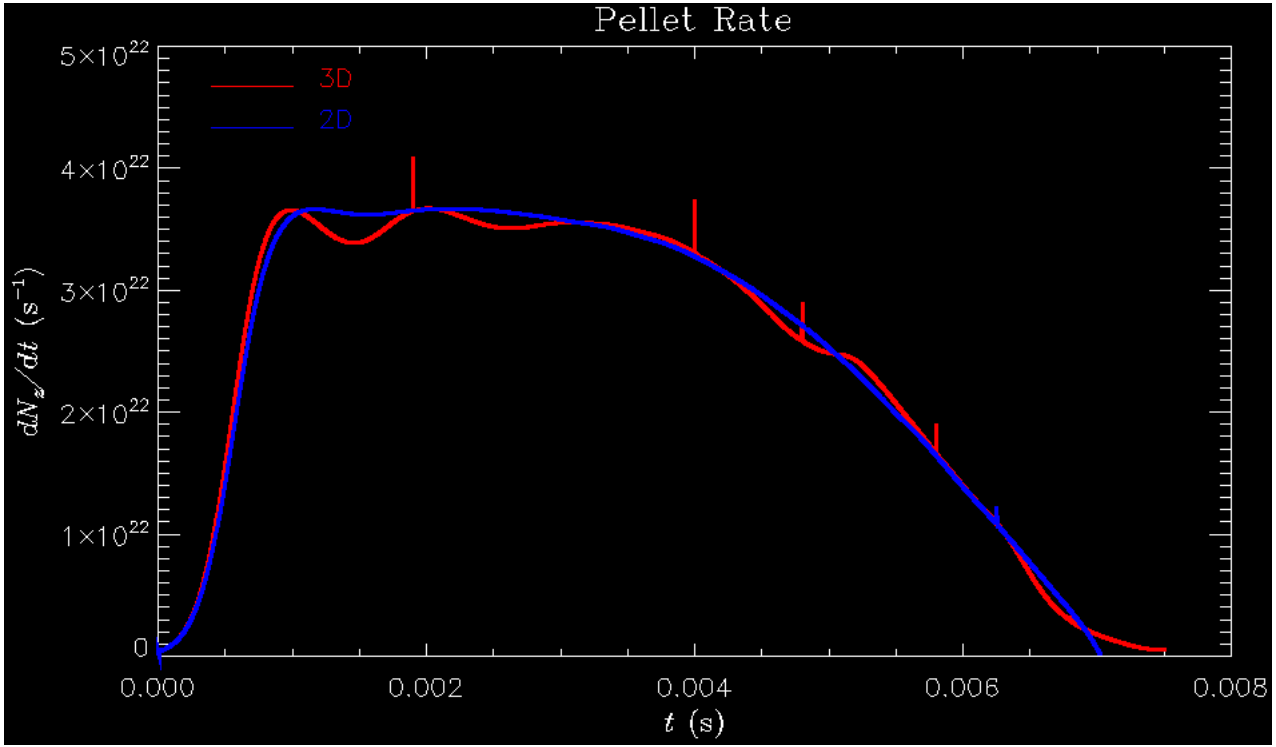
GENERAL ATOMICS

Pellet Radius (incomplete ablation in 3D)



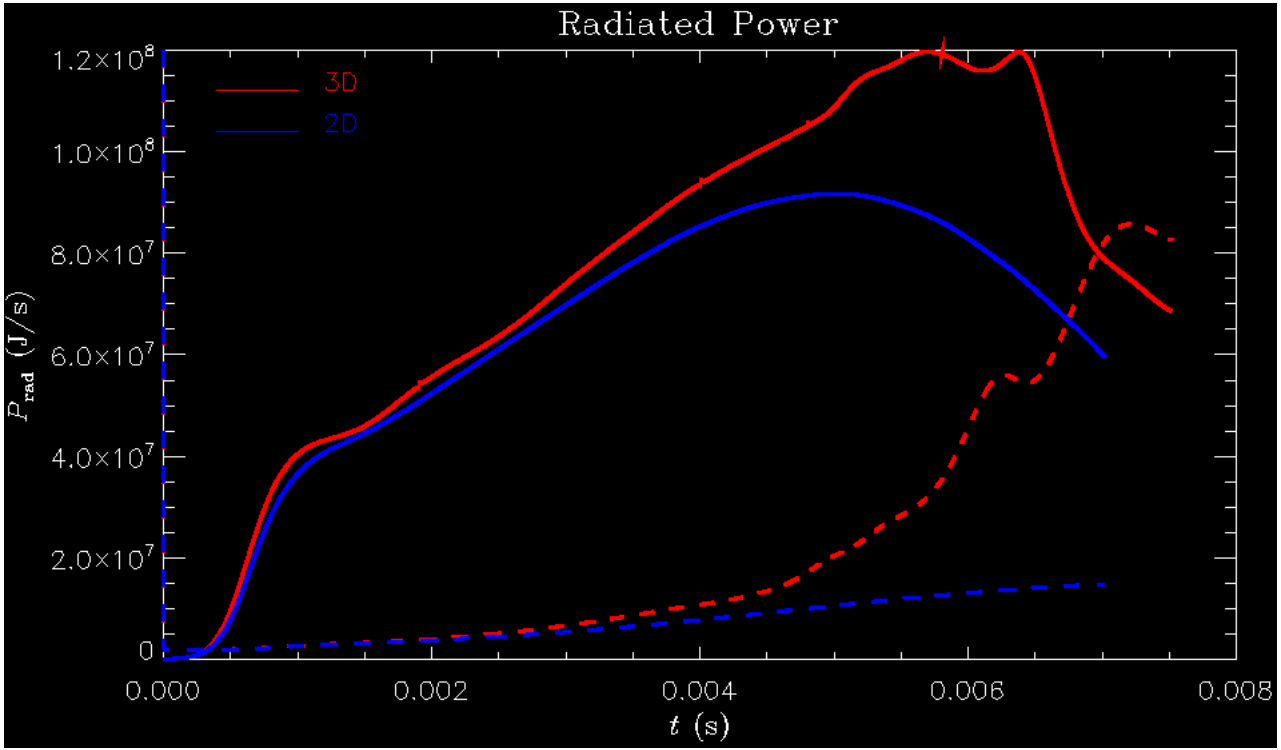
GENERAL ATOMICS

Ablation Rate

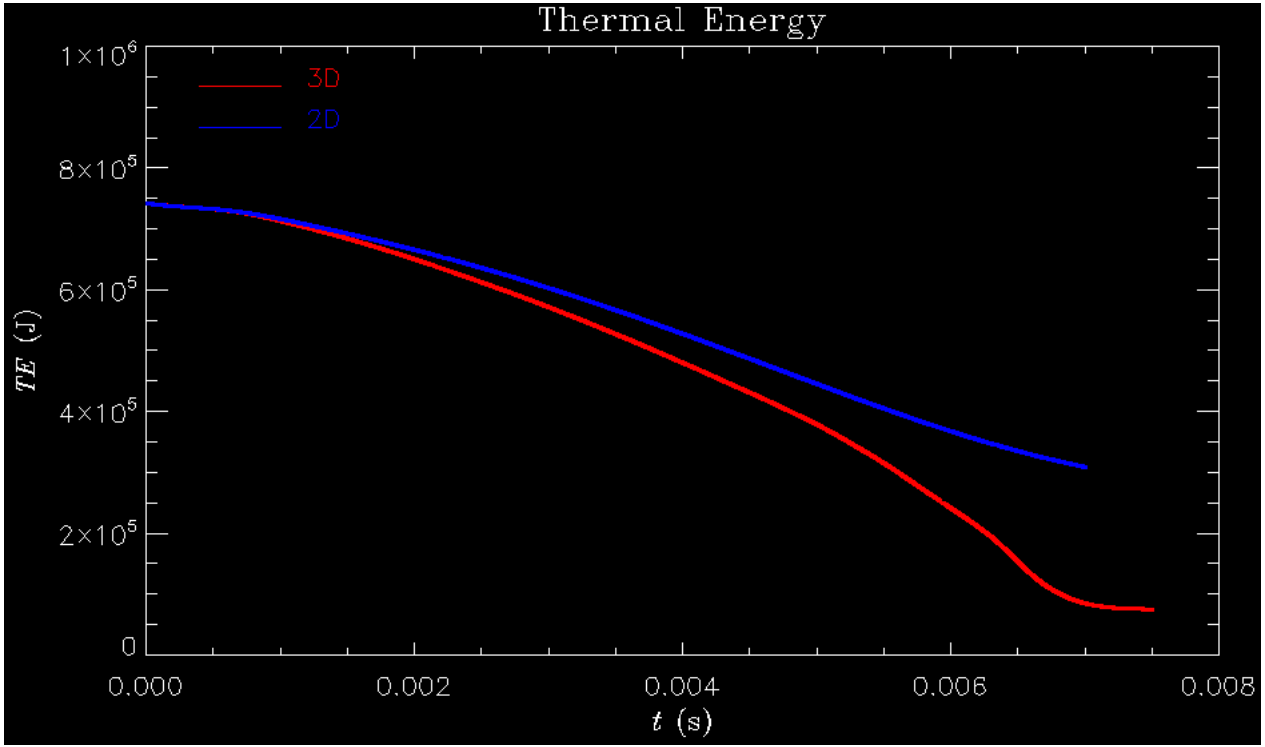


GENERAL ATOMICS

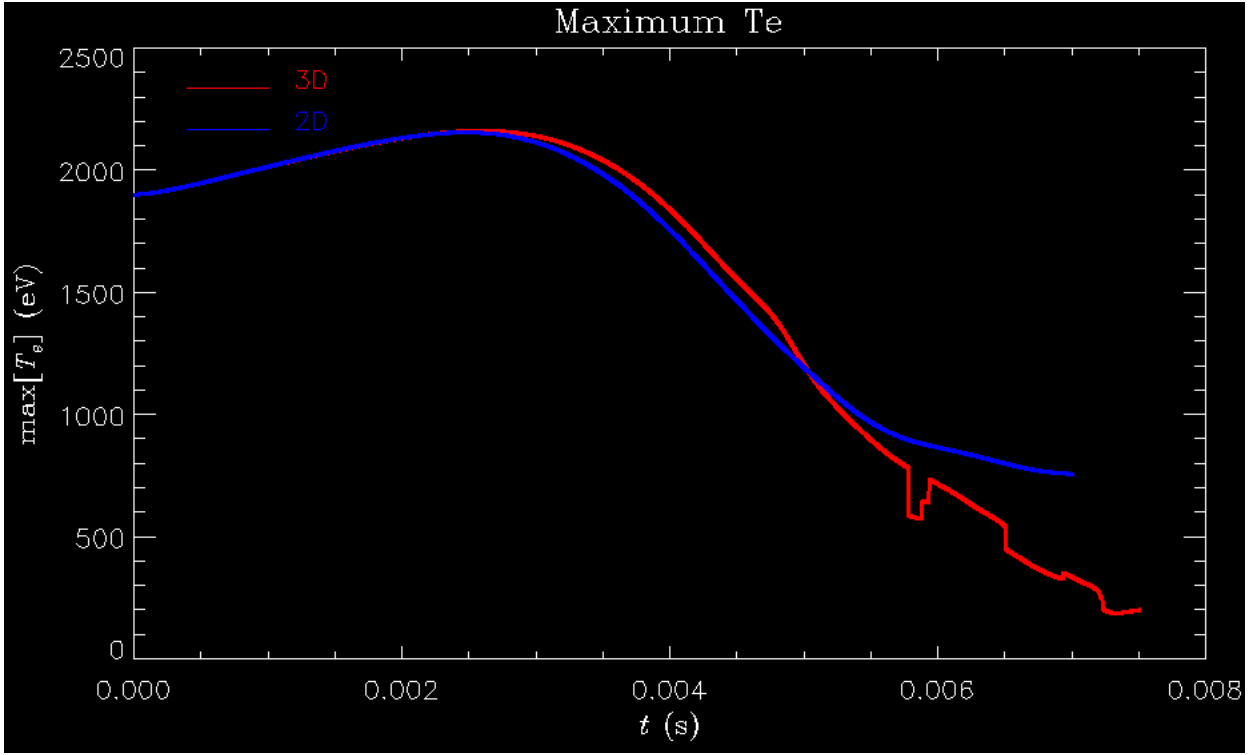
Radiated Power and Ohmic Heating (dashed)



Thermal Energy

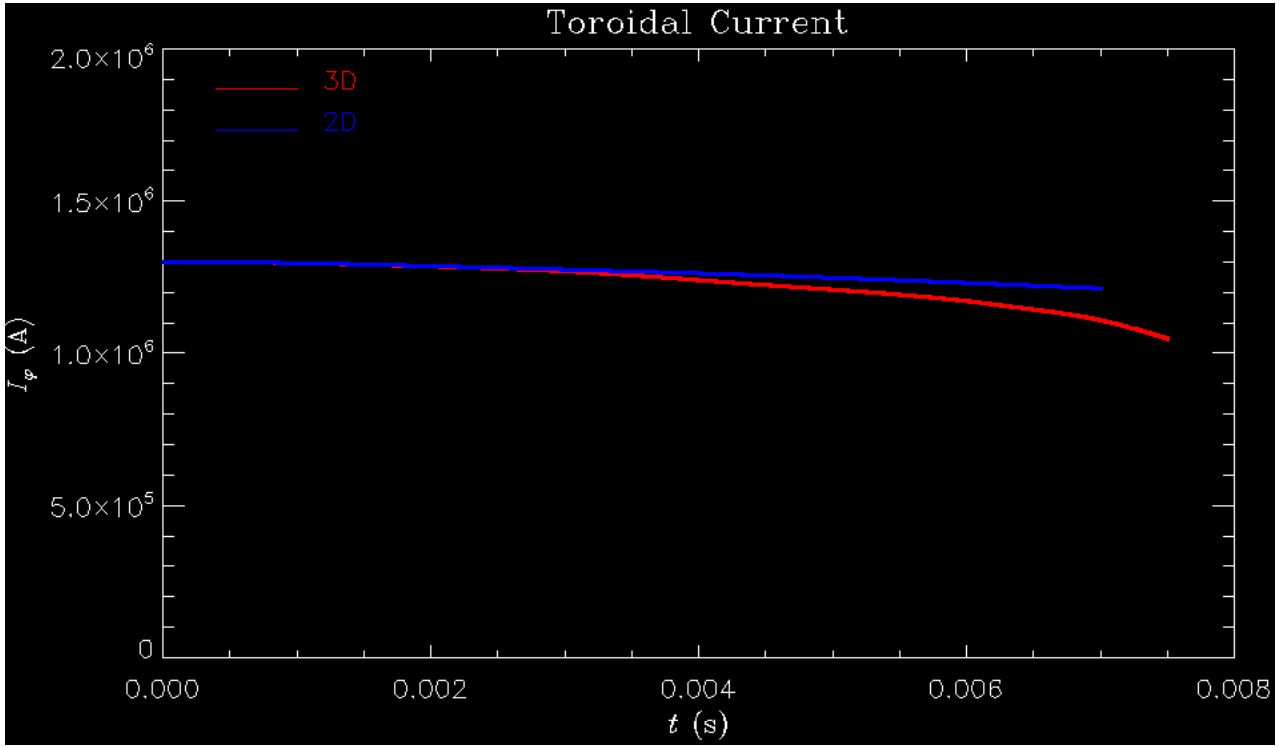


Electron Temperature On-Axis



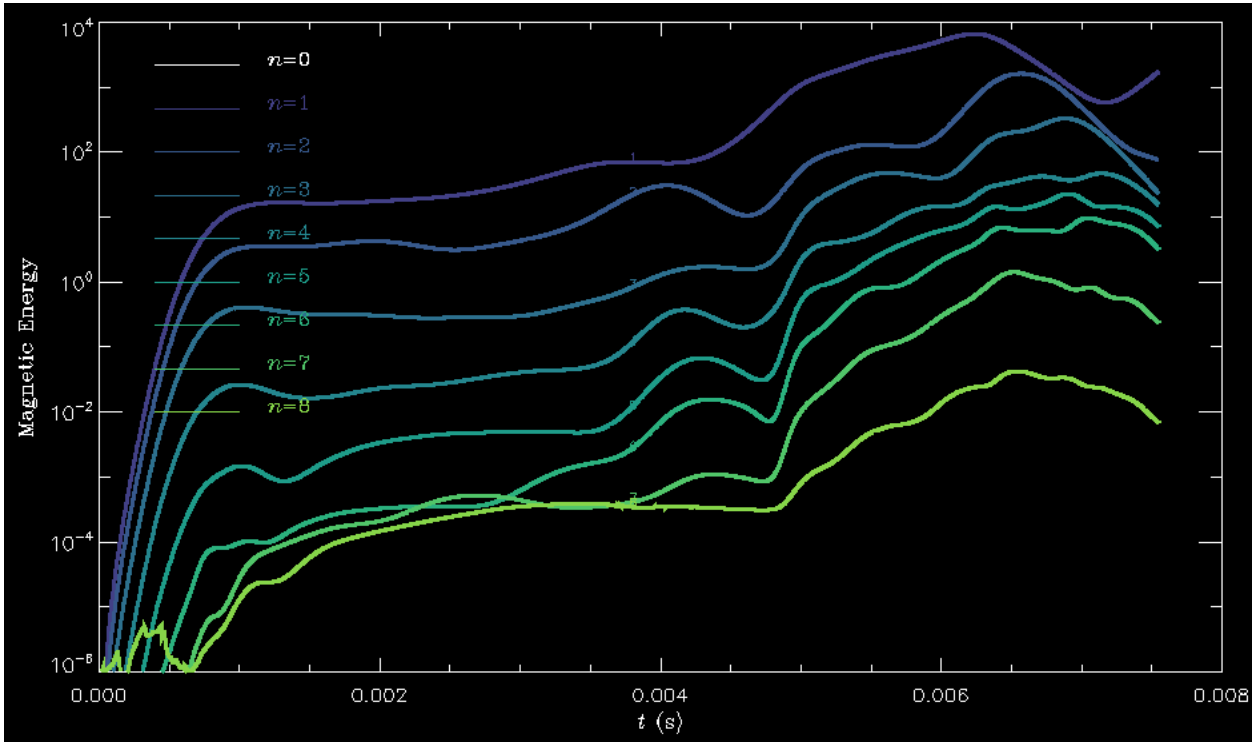
GENERAL ATOMICS

Plasma Current (Will Run Further Through Current Quench)



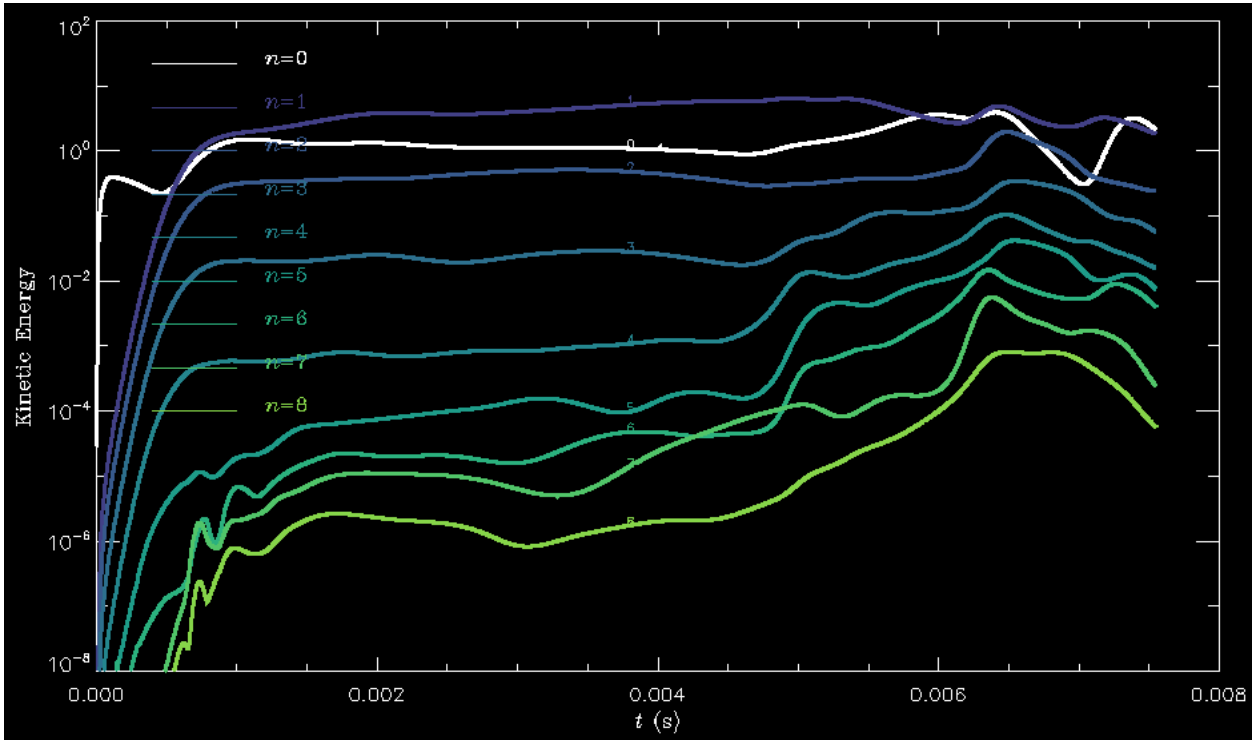
GENERAL ATOMICS

Magnetic Energy Harmonics



GENERAL ATOMICS

Kinetic Energy Harmonics



GENERAL ATOMICS