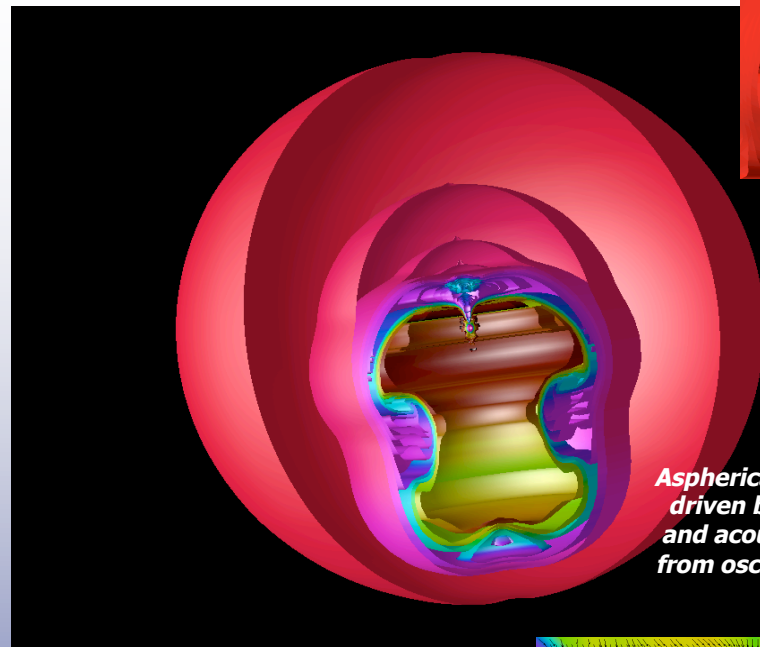
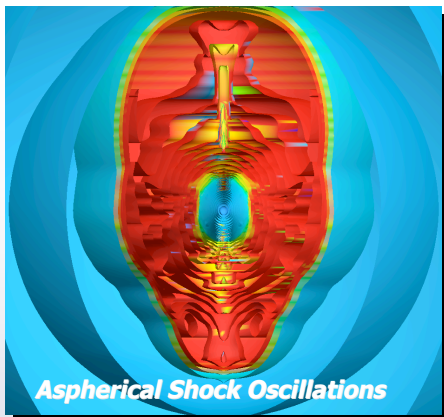
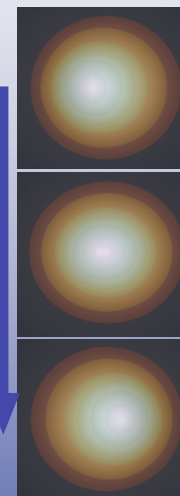


A New Core-Collapse Supernova Mechanism and Prospects for R-process Nucleosynthesis

Jeremiah Murphy, Adam Burrows, Luc Dessart, Christian Ott, Eli Livne



Protoneutron Star Core Oscillations

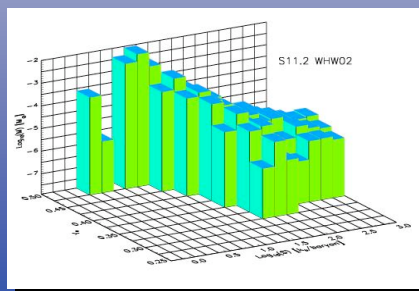
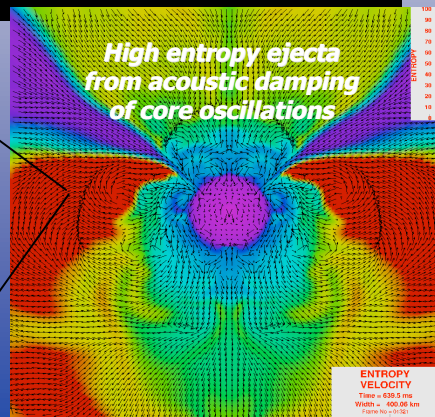


Summary

For the first time, a core-collapse supernova simulation shows promising conditions for r-process nucleosynthesis.

... and more details

- 2D Hydrodynamics simulations using multigroup, flux-limited diffusion of neutrinos
- Aspherical shock instability leads to aspherical accretion onto protoneutron star (PNS), which leads to PNS oscillations.
- Resultant acoustic power efficiently deposits energy behind the shock, reviving the explosion and raising the entropy to interesting regimes for r-process
- Burrows et al. 2006, *ApJ*, 640, 878



Interesting Y_e and entropy for r-process

