

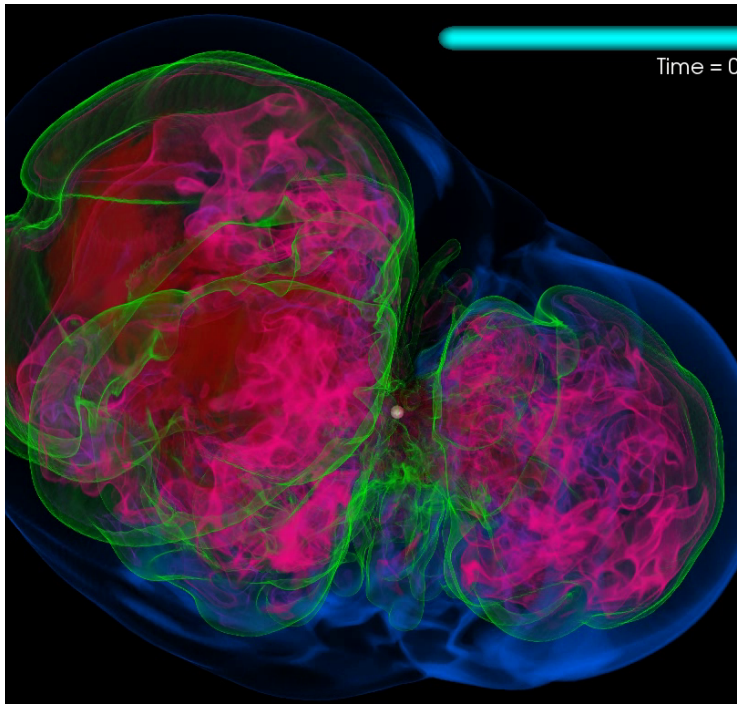
New Fornax 3D CCSN Simulations

Objectives

Nature is 3D, but most CCSN explosion simulations have been in 2D. Hence, performing state-of-the-art 3D simulations is central to future progress.

Impact

A library of 3D CCSN simulations will be a resource for progress in theory, of direct relevance to element production and the resolution of the CCSN enigma.



Accomplishments

The Princeton group has successfully completed its 3D Fornax code development and conducted the first simulations using this new multi-capability tool. Recently, they conducted a 2D/3D comparison study of progenitor models and found robust explosions in 3D with full-physics simulations. These models incorporate multi-group, velocity-dependent, multi-D transport, along with approximate GR and inelastic scattering off electrons and nucleons.

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