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Simulations of Core-Collapse Supernovae

Tuesday, 13 August 2019 09:00 (30 minutes)

Simulations of Core-Collapse Supernovae rely on four important ingredients: An efficient and reasonably accurate implementation of equation of state and reaction rates, a spatially and temporally well-resolved evolution of shock-roof magneto-hydrodynamics, a multidimensional parallel implementation of neutrino transport approximations with a well-defined pinch of relativistic effects and conservation laws, and an ever-growing toolbox for the analysis of output data. I will discuss the performance of the Isotropic Diffusion Source Approximation (IDSA) in 3D supernova models and compare the results of our code "Elephant" with other 3D supernova codes. Remarks on the future and availability of Elephant are also given.

Keywords

Presenter: LIEBENDOERFER, Matthias (University of Basel)

Session Classification: Core-Collapse Supernovae