

Abstract Submitted
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Supernova Explosions in Two and Three Dimensions ALEXEI KHOKHLOV, University of Chicago — Type Ia supernovae (SNIa) - thermonuclear explosions of degenerate stars - are important tools of modern physics and cosmology. Use of SNIa as extragalactic “standard” candles has led to accurate determinations of the Hubble constant and to a discovery of the accelerating expansion of the universe. Science produced by SNIa critically depends on understanding of SNIa and on accurate calibration of intrinsic brightness of SNIa events. I will discuss (1) recent progress and new problems in multidimensional hydrodynamical modeling of SNIa, (2) input physics, scales involved, and computer power required for producing next generation of theoretical SNIa models, and (3) ways to calibrate SNIa models using terrestrial experiments.

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