

FDITE09 Astrophysics 2: astrophysics of supernova explosions

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Description: the topic of this course is the overview of the different types of supernova explosions, from both theoretical as well as observational viewpoints.

Themes:

- evolution of massive stars
- core collapse, shock breakout, Type II supernova
- homologous expansion
- radiative diffusion in expanding ejecta, Arnett-models
- radiative diffusion in case of heating sources
- Type Ia supernovae: progenitors and explosion mechanisms
- spectral line formation in photospheric and nebular phase
- distance measurements from supernovae

Literature:

Supernova Explosions (Wheeler, J. Craig - Branch, David; Springer-Verlag GmbH; 2017)