

CompOSE - CompStar Online Supernovae Equations of State

Stefan Typel for the CompOSE core team
(Micaela Oertel, Thomas Klähn, S. T.)



TECHNISCHE
UNIVERSITÄT
DARMSTADT

Basel 2016
NewCompStar and Brainstorming and Fun
29.09. – 01.10.2016



- ▶ **free-access website (compose.obspm.fr)**
 - ▶ hosted at LUTH, l'Observatoire de Paris, Meudon
- ▶ **database of EoS tables**
 - ▶ thermodynamic properties, chemical composition, microscopic quantities
 - ▶ tabulation in temperature, baryon density and hadronic charge fraction
 - ▶ flexible data format
 - ▶ cold neutron star EoS direct input in Nrotstar code of LORENE library
- ▶ **software**
 - ▶ extraction and interpolation of data
 - ▶ calculation of additional quantities
- ▶ **manual**
- ▶ **links to related projects**

▶ EoS tables

- ▶ 1-parameter EoS: cold neutron star EoS (26)
- ▶ 2-parameter EoS: neutron matter EoS (24), zero-temperature EoS (3)
- ▶ 3-parameter EoS (47)

▶ solution of problems

- ▶ interaction with users

▶ update of program `compose.f90` and manual

- ▶ work in progress

▶ merger of EOSDB website (Chikako Ishizuka)

- ▶ planned



- ▶ **extension of EoS tables**
 - ▶ dependence on other variables (e.g. magnetic field strength)?
 - ▶ choice of other primary variables (e.g. chemical potentials, entropy)?
 - ▶ additional data (e.g. transport properties)?
- ▶ **different representation of data**
 - ▶ polynomials or other functions?
- ▶ **additional software**
 - ▶ conversion of tables?
- ▶ **extension of database**
 - ▶ more EoS tables needed!
- ▶ **other suggestions?**