

# Steps towards relativistic cosmology

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## Abstract

*09:30 Lecture (20 mins):* Standard cosmological simulations insert the cosmological scale factor evolution  $a(t)$  into a simulation artificially, based on a structureless model of the Universe. A brief introduction on how to calculate the effective scale factor  $a_{\text{eff}}(t)$  as a mathematically averaged quantity emerging from structure formation within the simulation itself will be presented.

*09:50 Workshop (70 mins):* Please try to install the packages from <https://bitbucket.org/broukema/ramses-scalav> before this session (see **INSTALL.ramses-scalav**). All of the packages are free-licensed, so you may freely modify, distribute and distribute modified copies of them. A minimal goal in this micro-course will be to run and understand basic elements of INHOMOG. A more ambitious goal would be to run the full RAMSES-SCALAV combined package and have some vision of its structure and aims.

**wiki:** <https://cosmo.torun.pl/3CS>