

Inhomogeneous cosmology research plans

Inhomogeneous Cosmology II+III participants

Kraków

16–21 September 2018

wiki: <https://cosmo.torun.pl/Cosmo/InhomCosmIII>

Context

- ▶ Λ CDM: DE = high scientific priority

Context

- ▶ Λ CDM: DE = high scientific priority
- ▶ observations of the 2020s: Euclid, SKA, 4MOST, DESI, LSST: few $\times 10^7$ galaxy spectra over $\sim 3\pi$ ster up to $z \sim 1-1.5$ + many more photometric-redshift galaxies

Aims

- ▶ DE @order-unity
 - does structure-formation-induced recently-emerged negative average curvature in pure GR \Rightarrow DE = artefact?

Aims

- ▶ DE @order-unity
 - does structure-formation-induced recently-emerged negative average curvature in pure GR \Rightarrow DE = artefact?
- ▶ 1% effect?
 - Is a non-perturbative inhomogeneous metric observationally significant at $\sim 1\%$ level?

Methods

- ▶ theory: analytical

Methods

- ▶ theory: analytical

- ▶ theory: numerical

Methods

- ▶ theory: analytical
- ▶ theory: numerical
- ▶ observations

Resources

- ▶ observations: physical/social/political telescope projects

Resources

- ▶ observations: physical/social/political telescope projects
- ▶ published literature: theory + observations

Resources

- ▶ observations: physical/social/political telescope projects
- ▶ published literature: theory + observations
- ▶ analytical, numerical software: both non-free and free-software (FLOSS) packages

Resources

- ▶ observations: physical/social/political telescope projects
- ▶ published literature: theory + observations
- ▶ analytical, numerical software: both non-free and free-software (FLOSS) packages
- ▶ people:

Resources

- ▶ observations: physical/social/political telescope projects
- ▶ published literature: theory + observations
- ▶ analytical, numerical software: both non-free and free-software (FLOSS) packages
- ▶ people:
 - ▶ **Marseille May 2018**: mostly analytical and numerical, few observational, several Λ CDM-observational

Resources

- ▶ observations: physical/social/political telescope projects
- ▶ published literature: theory + observations
- ▶ analytical, numerical software: both non-free and free-software (FLOSS) packages
- ▶ people:
 - ▶ **Marseille May 2018**: mostly analytical and numerical, few observational, several Λ CDM-observational
 - ▶ **Sextens July 2018**: some analytical, several numerical, several Λ CDM-observational (SKA)

Resources

- ▶ observations: physical/social/political telescope projects
- ▶ published literature: theory + observations
- ▶ analytical, numerical software: both non-free and free-software (FLOSS) packages
- ▶ people:
 - ▶ **Marseille May 2018**: mostly analytical and numerical, few observational, several Λ CDM-observational
 - ▶ **Sextens July 2018**: some analytical, several numerical, several Λ CDM-observational (SKA)
 - ▶ **Kraków Sep 2018**: mostly analytical, few numerical, almost no observational

Communication, coordination

- ▶ CosmoTorun17:

Communication, coordination

- ▶ CosmoTorun17:

- ▶ — newsletter: <https://cosmo.torun.pl/inhom> — running :)

Communication, coordination

▶ CosmoTorun17:

- ▶ — newsletter: <https://cosmo.torun.pl/inhom> — running :)
- ▶ — white paper: <https://overleaf.com/16937394rvbwybqsvgjp>
or *git clone* <https://git.overleaf.com/16937394rvbwybqsvgjp>
— started: Ostrowski, Roukema, Bolejko [more in Wed. talk]

Communication, coordination

▶ CosmoTorun17:

- ▶ — newsletter: <https://cosmo.torun.pl/inhom> — running :)
- ▶ — white paper: <https://overleaf.com/16937394rvbwybqsvgjp>
or *git clone* <https://git.overleaf.com/16937394rvbwybqsvgjp>
— started: Ostrowski, Roukema, Bolejko [more in Wed. talk]
- ▶ OK to send list of all our emails to all of us?

Communication, coordination

▶ CosmoTorun17:

- ▶ — newsletter: <https://cosmo.torun.pl/inhom> — running :)
- ▶ — white paper: <https://overleaf.com/16937394rvbwybqsvvgjp>
or *git clone* <https://git.overleaf.com/16937394rvbwybqsvvgjp>
— started: Ostrowski, Roukema, Bolejko [more in Wed. talk]
- ▶ OK to send list of all our emails to all of us?
- ▶ What else? Is the white paper a big/important enough task? [InhomCosmIIIRoadMap](#)