

# Cheng-Zong Ruan

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Email: [chzruan@gmail.com](mailto:chzruan@gmail.com) Website: [chzruan.github.io](http://chzruan.github.io)

- Employment**      **Institute of Theoretical Astrophysics, University of Oslo**    Oslo, Norway  
Postdoctoral Fellow      2022.09 – present
- Education**
- Institute for Computational Cosmology, Department of Physics, Durham University**      Durham, UK  
PhD in Physics      2019.07 – 2022.08  
Thesis: [Non-linear galaxy clustering in modified gravity cosmologies](#)  
Supervisors: Prof. [Baojiu Li](#), Prof. [Carlton Baugh](#), Dr. [Alexander Eggemeier](#)
- Department of Astronomy, Beijing Normal University**    Beijing, China  
MSc in Astrophysics      2017.09 – 2019.07  
Supervisors: Prof. [Bin Hu](#)
- Department of Physics, Beijing Normal University**      Beijing, China  
BSc in Physics      2013.09 – 2017.07
- Research Interests**    large-scale structure,  $N$ -body simulations, redshift-space distortions, modified gravity
- Selected Publications**
- 4. [Towards an accurate model of small-scale redshift-space distortions in modified gravity](#)**  
**Cheng-Zong Ruan**, Carolina Cuesta-Lazaro, Alexander Eggemeier et al.  
*MNRAS, Volume 514, Issue 1, pp.440-459*
- 3. [Fast full N-body simulations of generic modified gravity: conformal coupling models](#)**  
**Cheng-Zong Ruan**, Cesar Hernández-Aguayo, Baojiu Li et al.  
*JCAP, Volume 2022, Issue 05, id.018*
- 2. [Non-linear matter power spectrum without screening dynamics modelling in  \$f\(R\)\$  gravity](#)**  
**Cheng-Zong Ruan**, Tong-Jie Zhang, Bin Hu.  
*MNRAS, Volume 492, Issue 3, 2020*
- 1. [Using Spatial Curvature with HII Galaxies and Cosmic Chronometers to Explore the Tension in  \$H\_0\$](#)**   
**Cheng-Zong Ruan**, Fulvio Melia, Yu Chen, Tong-Jie Zhang.  
*ApJ, Volume 881, Article id. 137, 2019*
- Talks**      **[From gravitational action to small-scale galaxy correlation functions](#)**  
Durham Friday Lunchtime Astrophysics Talks (FLAT), Oct 29, 2021
- Teaching experience**    **Teaching Assistant, Department of Astronomy**      Fall 2018

Modern Cosmology, for first-year PhD and MSc students in Beijing Normal University

**Teaching Assistant, Department of Astronomy** Fall 2019  
Electrodynamics, for third-year undergraduates in Beijing Normal University

### Skills

#### **Programming**

Python, Fortran, C, C++, OpenMP

#### **Simulation Code**

MG-GLAM, MG-Arepo, Gadget, nbodykit