

## GR 2: Kosmologie I

Zeit: Montag 15:30–16:10

Raum: ZHG 002

GR 2.1 Mo 15:30 ZHG 002

**Backreaction in the relativistic Zel'dovich approximation** —  
•ALEXANDER WIEGAND<sup>1</sup>, THOMAS BUCHERT<sup>2</sup>, and CHARLY NAYET<sup>2</sup>  
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Zel'dovich's approximation in Newtonian cosmology is a practical tool to investigate the evolution of mildly nonlinear regions of the Universe. Its extension to the relativistic case is important for the investigation of the backreaction of inhomogeneities on the evolution history of spatial domains of the Universe. This talk presents a Lagrangian framework that allows for a one-to-one correspondence of Newtonian and general relativistic quantities and provides a perturbative backreaction model, together with domain-dependent quantitative estimates of the backreaction effect.

GR 2.2 Mo 15:50 ZHG 002

**Cosmic radio dipole measurement with Lofar** — •MATTHIAS RUBART — Fakultät Physik, Universität Bielefeld, 33615 Bielefeld, Germany

The velocity of our galaxy has been inferred using the CMB dipole anisotropy. An independent verification of this velocity is crucial to exclude any intrinsic CMB dipole term. One way to do this is by using catalogues of radio galaxies. The Low Frequency Array (Lofar) will be able to provide such a catalogue with sufficient number of sources. All estimators that have been in use to determine this radio dipole term in existing radio surveys require an almost complete sky coverage. Since Lofar will mainly map the northern hemisphere an adjustment to those estimators is needed. In this talk an overview of existing dipole estimations as well as an outlook for future measurements will be given. The focus thereby lies on surveys produced by Lofar.