

## **BMS-like structures in cosmology**

Béatrice Bonga, Radboud University Nijmegen

Null infinity in asymptotically flat spacetimes possesses a rich structure; including the BMS group and the Bondi news tensor that allow one to study gravitational radiation rigorously. FLRW spacetimes are not asymptotically flat because their stress-energy tensor does not decay sufficiently fast and in fact diverges at null infinity. I will present a class of spacetimes whose structure at null infinity is similar to FLRW spacetimes: the stress-energy tensor is allowed to diverge and the conformal factor is not smooth at null infinity. Interestingly, for this larger class of spacetimes, the asymptotic symmetry algebra is similar to the BMS algebra but not isomorphic to it. In particular, the symmetry algebra is the semi-direct sum of supertranslations and the Lorentz algebra, but it does not have any preferred translation subalgebra. Along the way, I will review the framework of asymptotically flat spacetimes and highlight differences and similarities.