Contributed Talk

Splinter Computation

Forming (more) realistic galaxy clusters in simulations

Ewald Puchwein[1], Nicholas Henden[1], Debora Sijacki[1], Sijing Shen[2]

[1] *Institute of Astronomy & Kavli Institute for Cosmology, University of Cambridge*
[2] *Institute of Theoretical Astrophysics, University of Oslo*

We present a new suite of high-resolution galaxy cluster simulations performed with the moving-mesh cosmological hydrodynamical simulation code AREPO. Galaxy formation and feedback are modelled with the "Illustris" galaxy formation model, which previous studies found to be highly successful in obtaining realistic galaxy populations. A number of modifications of this model will be discussed which result in much better agreement with observations on the scale of galaxy groups and clusters. Based on this model we predict the most important galaxy cluster scaling relations and discuss various challenges that the current generation of simulations still faces.