PROCEEDINGS OF SCIENCE

A view on the baryon distribution at z > 2: using the Lyman-alpha forest as a cosmological probe

M. Viel
Institute of Astronomy, Cambridge

We use a sample of 27 high resolution high-signal to noise UVES quasar spectra and a set of large box size hydro-dynamical simulations to recover the linear dark matter power spectrum at $z > 2$ and at scales of 1 - 40 Mpc $\cdot$ h^{-1} not probed by any other observable. We combine this estimate with other data in order to get tighter constraints on cosmological parameters. In particular, we focus on the recovered values for σ_8, the primordial spectral index and the running of the primordial spectral index.

BDMH 2004 – Baryons in Dark Matter Halos
5–9 October 2004
Novigrad (Croatia)

Published by SISSA

http://jhep.sissa.it/archive/prhep/preproceeding/010/061/AHEPh.pdf