

APR06-2006-040053

Abstract for an Invited Paper
for the APR06 Meeting of
the American Physical Society

CMB-BBN complementarity

BENJAMIN WANDEL, University of Illinois at Urbana-Champaign

I will review the measurement of η , the photon-to-baryon ratio, coming from observations of the cosmic microwave background. η is also obtained independently from the measurements of light element abundances. These two independent determinations of η amount to a consistency check on (and hence a test of) the standard model of cosmology. If our standard model of cosmology passes this test we obtain constraints on non-standard features, such as decaying particles, or new particle interactions. If we are willing to assume the standard model, the measurement of η from the cosmic microwave background can be taken as a starting point for standard BBN, which would give definite predictions for the primordial abundances of light elements, a key input for other areas of cosmology. I will discuss how this results in an additional consistency check due to the sensitivity of the CMB anisotropies to the Helium abundance.