

Big-Bang Cosmology

Big-Bang Nucleosynthesis

The Cosmological Parameters

Dark Matter

Cosmic Microwave Background

Experimental Tests of Gravitational Theory

Cosmic Rays

Big-Bang Cosmology

K. Olive and J. Peacock - since 2001

Includes “text-book” material on standard big-bang, observational cosmology, and early Universe.

These have not changed much over time.

**Updates typically occur in section on the Universe at late times.
CMB, structure formation.**

New (2009) subsection on Dark Energy

Big-Bang Nucleosynthesis

B. Fields and S. Sarkar - since 2001

Review of Standard BBN - theory and observations

Updates due to WMAP and new light element determinations.

New (2009) subsection on the Lithium Problem

The Cosmological Parameters

O. Lahav and A. Liddle - since 2003

Review of determination and values of standard cosmological parameters - h , Ω_m , Ω_b , Ω_Λ , Ω_r , Ω_ν , σ_8 , n , r , τ , b

Updates due to WMAP, supernovae, large scale structure surveys.

New (2009) subsections baryon acoustic oscillations and integrated Sachs-Wolfe effect

Dark Matter

M. Drees and G. Gerbier - since 2003

Dark Matter - Theory (Drees) - Experiment (Gerbier)

Updates dominated by new experimental searches

This is probably the most fluid of the reviews as there are a large number of experiments releasing data several times per year

Reviews are cautious and do not jump at purported “discoveries” - e.g. PAMELA/ATIC/Fermi.

Cosmic Microwave Background

D. Scott and G. Smoot - since 1996

Major update 2007

Updates dominated by WMAP and other CMB experiments

There is some overlap with the Parameters review

New subsubsection on S-Z Effect

Summary

Very much a team effort

In addition to external reviews, each review is read by almost all authors with detailed comments (primarily from S. Sarkar, A. Liddle, D. Scott (and me)).

Significant effort is made to coordinate reviews and values of quantities quoted - revisions often continue to the last possible moment

Significant contributions and help from D. Groom