

Introduction

Schedule

Introduction

- 01 Monday Introduction
- 02 History
- 03 Basic Facts

World Models

- 04 World Models

Classical Cosmology

- 05 Tuesday Distance Determination, H_0

The Early Universe

- 06 Hot Big Bang Model
Nucleosynthesis, Inflation, ...
- 07 Wednesday Determination of Ω and Λ

Large Scale Structures

- 08 Thursday Large Scale Structures, Structure Formation

Literature

1. Cosmology Textbooks

PEACOCK, J.A., 1999, *Cosmological Physics*,
Cambridge: Cambridge Univ. Press, 49.50€

Very exhaustive, but difficult to read since the entropy per page is very high. . . still: a “must buy”.

LONGAIR, M.S., 1998, *Galaxy Formation*, Berlin:
Springer, 53.45€

Clear and pedagogical treatment of structure formation, recommended.

BERGSTRÖM, L. & GOOBAR, A., 1999,
Cosmology and Particle Astrophysics, New
York: Wiley, 47.90€

Nice description of the physics relevant to cosmology and high energy astrophysics, focusing on concepts. Less detailed than Peacock, but easier to digest.

Literature

PADMANABHAN, T., 1996, *Cosmology and Astrophysics Through Problems*, Cambridge: Cambridge Univ. Press, \$36.95

Large collection of standard astrophysical problems (with solutions) ranging from radiation processes and hydrodynamics to cosmology and general relativity

PADMANABHAN, T., 1993, *Structure Formation in the Universe*, Cambridge: Cambridge Univ. Press, 46.50€

Mathematical treatment of cosmology, focusing on the formation of structure . . . Less astrophysical than the book by Longair.

ISLAM, J.N., 2002, *An Introduction to Mathematical Cosmology*, Cambridge: Cambridge Univ. Press, 42.50€

Useful summary of the facts of classical theoretical cosmology, recently revised.

Literature

KOLB, E.W. & TURNER, M.S., 1990, *The Early Universe*, Reading: Addison-Wesley, 49.90€

Graduate-level text, the section on phase transitions and inflation in the early universe is especially recommended.

PEEBLES, P.J.E., 1993, *Principles of Physical Cosmology*, Princeton: Princeton Univ. Press (antiquarian only, do not pay more than \$30!)

700p introduction to modern cosmology by one of its founders, in some parts quite readable, however, many forward references make the book very difficult to read for beginners.