

ICTP DIPLOMA PROGRAMME IN HIGH ENERGY PHYSICS 2013-14

SYLLABUS

Cosmology - {12 Lectures = 18 hours} R. Sheth

The Friedmann-Robertson-Walker model

Geometry, density and expansion history, Distance measures

Supernovae as standard candles

Relic Abundances

Big Bang Nucleosynthesis

The Cosmic Background Radiation

Recombination, Decoupling, Primary Anisotropies, Secondary Anisotropies

Baryon Acoustic Oscillations as standard rods

Structure Formation

Transfer function, Linear theory, Nonlinear scalings

Observational probes

BAO, Gravitational lensing, Clusters, Redshift-space distortions

Inflation

Motivation, Slow Roll, Reheating