UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Introduction To Cosmology

2122-1-F5802Q004

Aims

Knowledge of the structure of the Universe and of the main stages of the cosmic history, from the big bang to the growth of the first structures.

Contents

Classical cosmology, Friedman models. Cosmic microwave background. Cosmological nucleosynthesis. Inflation. Structure formation and growth.

Detailed program

Large scale homogeneity and isotropy of the Universe. The Hubble law. The Robertson Walker metric. The Friedmann Equation and Friedmann models. Measures of the cosmological parameters. Problems in the standard Big bang model and the inflation solution. Cosmic nucleosynthesis. Recombination. Cosmic microwave background. Collapse of the first haloes and of their baryonic components.

Prerequisites

Mathematics and Physics for undergraduates.

Teaching form

Lessons (6 CFU).

Textbook and teaching resource

B. Ryden, “Introduction to cosmology”.

Semester

Second semester.

Assessment method

Oral examination. The exam consists of three parts: the discussion of an an argument picked by the student, the analysis of a multicomponent Friedmann model, and a third more general part to test the student's knowledge of the other argument discussed during the class.

Office hours

Wednesday 16:00-18:00