Module: Elective Advanced Lectures: Observational Astronomy

Module No.: astro840

Course: Observational Cosmology

Course No.: astro845

Category	Type	Language	Teaching hours	CP	Semester
Elective	Lecture with exercises	English	2+1	4	ST

Requirements for Participation:

Preparation:

Form of Testing and Examination:
Requirements for the examination (written or oral): successful work with the exercises

Length of Course:
1 semester

Aims of the Course:
Students with B.Sc. in Physics will be introduced to past and current experiments in cosmology, with some bias toward radio- and submillimeter astronomy

Contents of the Course:
Brief history of cosmology and its initial discoveries: cosmic expansion, cosmic microwave background. Overview of modern cosmological experiments, their major aims and technology. Aims: constraints on Big Bang and dark energy, CMB power spectrum and polarization, Sunyaev-Zeldovich effect, Supernova Ia distance measures, structure /cluster /galaxy formation, epoch of reionization, high-redshift galaxies and quasars. Experiments: APEX, LOFAR, Planck, Herschel, ALMA, SKA. Techniques: bolometer, HEMT

Recommended Literature:
B. F. Burke; F. Graham-Smith, An Introduction to Radio Astronomy (Cambridge University Press 2002)
J. A. Peacock; Cosmological Physics (Cambridge University Press 1998)
Contemporary Review Articles