Classic Papers

— Course description —

Course facts

- **Credits**: 5 ECTS
- **Course type**: Special syllabus
- **Level**: Ph.D.
- **Teaching**: Fall 2019
- **Language**: English
- **Webpage**: anisotropela.dk/teaching/classic_papers

Course content

The purpose of the course is to become familiar with seminal papers in the field of astrophysics and cosmology — the papers that everybody knows and cites, but never really read in-depth.

Note that the course is a so-called "special syllabus"; a maximum of 10 ECTS is allowed for special syllabi *plus* external courses.

Learning outcome

When you have completed the course, you will have a knowledge of the basics of important contributions to astrophysics. The actual chosen papers will depend on the preferences of the attendees, but will focus and galaxies and cosmology and may include, e.g.:

- Press & Schechter (1974): Structure formation in the early Universe
- Schechter (1976): The luminosity function
- Wayne Hu's thesis (1995): The origin of the CMB power spectrum peaks
- Gunn & Peterson (1965): The erasure of light blueward of the Lyα line
- Partridge & Peebles (1967): The visibility of young galaxies
- Salpeter (1955): The initial mass function
- Navarro et al (1996): The NFW profile

More suggestions can be found on the course webpage.

As an important part of the course is presenting the papers, as well as receiving feedback, the students will also become comfortable with speaking about topics that are somewhat outside their own studies — something which will be valuable as a future scientist.

Admission

Students can sign up for the course by writing directly to me at pela@astro.uio.no.

Prerequisites

A completed Master's degree in physics or astronomy.

Teaching

The course runs over a semester. We will meet bi-weekly for 2 hours. The students will take turns on giving a presentation of the paper, which will then lead to a discussion. All students are expected to participate actively, e.g. by having prepared questions. There may also be small assignments to solve.

Compulsory attendance.

Evaluation

The course is passed by

1. participating actively in all discussions,
2. presenting a number of papers (depending on how many students are attending the course), and
3. passing an oral exam.

Examination

After completion of the course, there will be an oral exam where the student draws a random paper from the course and presents it.