

Portfolio of teaching and supervision

Peter Laursen

October 3, 2019

In addition to a reflection on my teaching practice, this document contains verification of the following activities:

- Teaching experience
 - Main teacher
 - * Teacher at “Classic papers in cosmology and astrophysics”
 - Teaching assistant and guest lecturer
 - * Cosmology and extragalactic astronomy
 - * Making of galaxies and chemical evolution
 - * NOT observing course
 - * Astro 1
 - * Dat F
- Supervision
 - Subsidiary supervisor for M.Sc. student Espen Hodne
 - Co-supervisor for a B.Sc. students Thejs Brinckmann and Mikkel Lindholmer
- Education
 - Certificate of the course “*Supervision of Ph.D. students*”

Reflections on teaching practice

I enjoy very much the teaching and outreach aspect of my job. After all, this is what astronomy is about: Not only to gain, but also to disseminate knowledge about the Universe. My employments after receiving my Ph.D. have all been pure research with no teaching duties. Nevertheless, I have assisted and guest lectured courses, and am currently engaged in teaching “my own” course.

My teaching practice is inspired by Roskilde University's so-called “Bredde-fysik” (“breadth physics”) which includes branches of all physics rather than a single topic, and which I liked very much when I took it during bachelor studies. Here, questions are very open, and it is up to the student to judge whether the answer requires e.g. thermodynamics or quantum mechanics, whether it can be exact or just order-of-magnitude, which assumptions must be made, etc.

As an example, I asked the students (in an astronomy course I T.A.'ed) “How many galaxies are there in the Universe?”, with no additional information. The answer could then be observational, integrating observed luminosity functions and including a discussion of which types of galaxies are selected in this way, or it could be theoretical, using halo mass functions together with an assumed halo occupation distribution. More importantly, it required the students to think about how to approach such a problem and how to collect the needed information. Of course in such an approach to teaching, at the same time focus must be maintained on the general topic of the course, in order not to drift too far.

While my university teaching experience is limited, I have many years of experience with outreach in the form of 100+ public talks, interviews to radio and newspapers, as well as writing answers to questions about physics and astronomy, both at NBI's website, my own Q&A column (anisotropela.dk/brevkasse), and the internet forum Stack-Exchange, where $\gtrsim 500\,000$ have seen my answers. This semester, however, I am giving my own Ph.D. level course on “Classic papers in cosmology and astrophysics”, where the students take turns presenting seminal papers, leading to discussions where we also touch upon fields outside that of the given paper, thus placing the work in a broader context.

Date: 2 October 2019

To whom it may concern.

This letter is to verify that Peter Laursen has taught the course:

“Classic papers in cosmology and astrophysics”

at the Institute of Theoretical Astrophysics, University of Oslo,

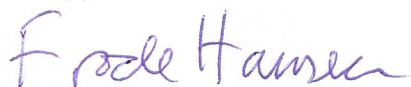
during fall 2019.

Peter Laursen has devised, planned, and taught the course, as well as set up the course webpage.

The purpose of the course is to become familiar with seminal work in the field of cosmology and astrophysics by reading, presenting, and discussing various influential papers.

- Credits: 5 ECTS
- Level: Ph.D.
- Language: English
- Examination: Oral
- Class size: 6 students
- Webpage: anisotropela.dk/teaching/classic_papers

Sincerely yours



Professor Frode Hansen (head of teaching)



Postal address:
Institute of Theoretical Astrophysics
P.O.Box 1029 Blindern, N-0315 OSLO, Norway
Visiting address:
Svein Rosselands hus
Sem Sælands vei 13, N-0315, Oslo, Norway

Contact:
Phone: + 47 22 85 65 16
Email: frodekh@astro.uio.no

UiO : Institute of Theoretical Astrophysics
University of Oslo

Proof of Employment Peter Laursen

Oslo, December 3, 2017

To whom it may concern,

This letter is to verify that Peter Laursen acted as teaching assistant and guest lecturer during fall 2016 in the course AST4320 "*Cosmology and extragalactic astronomy*" at the University of Oslo.

Specifically, he was responsible for the part of the course that covered the Lyman α forest.
Sincerely yours,

Mark Dijkstra



Institute of Theoretical Astrophysics
P. O. Box 1029 Blindern
N-0315 Oslo, Norway

Telephone: (+47) 22 85 65 01
Telefax: (+47) 22 85 65 05
E-mail: mark.dijkstra@astro.uio.no

Verification of teaching assistance

29.11.2017

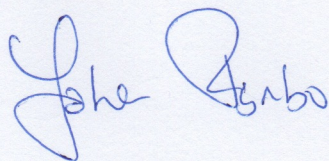
To whom it may concern,

This letter is to verify that Peter Laursen acted as teaching assistant and guest lecturer during spring 2015 in the course

"Making of galaxies and chemical evolution"

Specifically, he contributed to the topics of structure formation and the physics of Lyman α .

Sincerely,

A handwritten signature in blue ink, reading "Johan P. U. Fynbo". The signature is stylized, with the first name "Johan" and last name "Fynbo" clearly legible.

Prof. Johan P. U. Fynbo
Dark Cosmology Centre
Niels Bohr Institutet
Københavns Universitet
Juliane Maries Vej 30
2100 København Ø
Denmark



Reionization with Multi-frequency Datasets	Conference	Albanova, Stockholm	08.09	N
Current problems in extragalactic dust	Workshop	NBI, cph	06.09	N
DFS annual meeting	Conference	DTU, Lyngby	06.09	Y
4 th annual DARS meeting	Meeting	Ebeltoft	01.10	Y
Lyman alpha micro-workshop	Meeting	Stockholm	03.10	Y
Nordic astrophysics	Conference	Visby	05.10	Y

Communication and teaching activities		
Activity:	The PhD student's contribution	Total number of hours
Exercises	TA at NOTobserving course + Dat F	See below
Lectures	1 guest lecture in Astro I	See below
Supervision		
Other activities	Regular talks	see below
		According to agreement with Døssing, my T.A.-ing at Dat F and the NOT course, together with my regular talks, constitutes the required outreach

Credit transfers, if any:

Publications:

☒ List of publications is attached

Short description of the scientific accomplishments:

The PhD student has developed the only code in the scientific community capable of calculating the radiative transfer of Lyman α radiation in realistically simulated galaxies, in this was enabling him to predict and explain a number of interesting and novel result concerning the interpretation of young, dusty galaxies. Moreover, the code has

Verification of supervision

2.10.2019

To whom it may concern,

This letter is to verify that Peter Laursen has acted as a subsidiary supervisor for M.Sc. student Espen Hodne during his master's project

“Modelling Lyman- α Emission from Star Forming Galaxies at High Redshift Using Cosmological Simulations”

during 2018 and 2019.

In the project, the student analyzed numerically simulated galaxies, post-processing them with Ly α radiative transfer, thereby studying the physical properties of high-redshift galaxies.

Sincerely,

A handwritten signature in black ink, appearing to read 'Sijing Shen'.

Dr. Sijing Shen (official supervisor)
Institute of Theoretical Astrophysics
University of Oslo
Sem Sælands vei 13
0371 Oslo
Norge

Verification of supervision

29.11.2017

To whom it may concern,

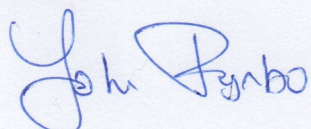
This letter is to verify that Peter Laursen acted as co-supervisor for B.Sc. students Thejs Brinckmann and Mikkel Lindholmer during their bachelor project

"Modelling the column density of DLAs"

in the spring of 2013.

Specifically, he supplied the students with data from galaxy formation simulations and software needed to analyse the data, guided them in interpretation of results, and discussed the science of this during meetings and written correspondence.

Sincerely,



Prof. Johan P. U. Fynbo
Dark Cosmology Centre
Niels Bohr Institutet
Københavns Universitet
Juliane Maries Vej 30
2100 København Ø
Denmark



CERTIFICATE

this is to certify that

Peter Laursen

has completed a course at the University of Copenhagen in

Supervision of PhD students

October – November 2015

GENERAL CONTENTS

This course consists of lectures, discussions and practical exercises over two days comprising the following topics:

- Aligning expectations
- Collegial help in supervision
- Roles and styles in supervision
- Approaches to supervision
- Writing process and Feedback
- Supporting autonomy
- Preventing conflicts

A handwritten signature in black ink, appearing to read 'Sofie Kobayashi'.

Sofie Kobayashi
Department of Science Education
Faculty of Science