Curriculum vitae of Peter Laursen

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Nationality:	Danish
Date of birth:	June 24, 1975
Position:	Postdoctoral fellow
Affiliation:	Institute of Theoretical Astrophysics (ITA) University of Oslo
Spouse:	Rikke Cederkvist
Children:	Iris & Sigurd
(Paternity) leave:	2009 (4 months) 2017 (5 + 3 months) 2018 (3 months)
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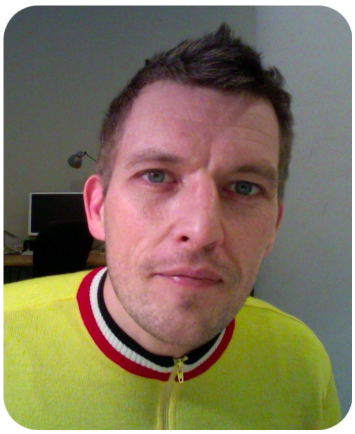

Academic record

- 2016–now: Postdoc, astrophysics; ITA
- 2015–2016: System administrator / IT support; Dark Cosmology Centre (DARK)
- 2012–2015: Postdoc, astrophysics; DARK.
- 2010–2012: Postdoc, astrophysics; Oskar Klein Center, Stockholm University.
- 2007–2010: Ph.D. student, astrophysics; DARK. Three months were spent at The Excellence Cluster Universe, Garching.
- 2004–2006[1]: M.Sc. student, astrophysics; DARK (**average grade 13/13**).
- 1999–2002: B.Sc. student, physics/mathematics; Roskilde University (RUC).

Research fields

- Lyman α radiative transfer
- Galaxy formation
- Galaxies at high and low redshifts
- Simple galaxy models
- Reionization
- Interstellar medium
- Intergalactic medium
- Emission from damped Lyα absorbers
- Compton scattering in gamma-ray bursts

Awards and achievements

- 2019: Awarded best Danish public outreach author 2018 on Forskerzonen.[2]
- 2016: ITA Fellowship grant for three years of independent research.
- 2012: DARK Fellowship grant for three years of independent research.
- 2011: First-author of Sweden's most cited paper[3] in astrophysics.
- 2010: Villum Kann Rasmussen Foundation grant for two years of independent research.

[1] As apparent from my academic record, there is a gap between my bachelor and master studies. In 2002 I was in an accident that costed me ∼a year of rehabilitation.

[2] Mentioned e.g. by Danish National Research Foundation.

[3] See www.popast.nu/2011/12/arets-basta-astronomiforskning-2011.

Invited talks and seminars

- 2019: *Lyman α radiation from galaxy formation*, University College London, UK
- 2015: *Chasing the highest-redshift galaxies in Lyα*, University of Oslo.
- 2012: *Interpreting Lyman α radiation from young, dusty galaxies*, Roskilde University
- 2011: *Dust and Lyman α*, Nordic Network of Astrophysics and Cosmology workshop, Corsica.
- 2010: *Interpreting the Lyα line*, Nordic Astrophysics workshop, Visby.
- 2010: *Modeling Lyα emission from high-z galaxies*, Lyα and reionization workshop, Stockholm University.
- 2009: *Lyman α radiative transfer in the high-redshift, dusty Universe*, Lund Observatory.

Academic activities

- 2019–: Junior member of the International Astronomical Union.
- 2012–: Member of the Lyman Alpha Reference Sample (LARS) collaboration (PI's: Göran Östlin and Matthew Hayes, Stockholm University).
- 2007–: Referee: ApJ, MNRAS, A&A.
- 2015: External examinor at Nicolás Garavito's M.Sc. defence, Universidad de los Andes, Bogotá, Colombia
- 2012–2015: In charge of organizing a daily, half-hour paper discussion session at DARK.
- 2014: Member of Scientific Organizing Committees: European Week of Astronomy and Space Science (EWASS) conference 2014, *From local galaxies to the reionisation epoch: the Universe as seen in Lyman α*.

Teaching

- Main teacher
  - "Classic papers in cosmology and astrophysics"
- Co-teacher / T.A. / guest lecturer
  - "Cosmology" (Astro 3)
  - "Cosmology and extragalactic astronomy"
  - "Making of Galaxies and Chemical Evolution"
  - "Computer Science for Physicists" (Dat F)
  - Observing course at the Nordic Optical Telescope, La Palma
  - "Cosmology" (Astro 1)

Supervision

- 2019: M.Sc. student Espen Hudme (subsidiary spv.), ITA
- 2013: B.Sc. students Thejs Brinckmann and Mikkel Lindholmer (co-spv., DARK).

Public outreach[4]

- Popular talks
  - Regular ($\sim$monthly) talks about galaxies, cosmology, and other astronomy-related topics to high school students, astronomy associations, and the general public.
- Media appearance
  - Regular interviews in radio shows, video, newspapers, and online science sites.
- Questions & answers
  - Answering questions about physics and astronomy at the Niels Bohr Institute's outreach site[5], at my own Q&A column[6], and the popular website StackExchange.com[7] where $\gtrsim$500,000 have seen my answers.
- Popular science articles
  - Online and in science magazines.
- Miscellaneous
  - Tweeting about astronomy[8]; posters and flyers on astronomy; astronomy workshops; public debates on science; astronomy art.

[4] See more at anisotropela.dk/outreach.
[5] nbi.ku.dk/spoerg_om_fysik/astrofysik.
[6] anisotropela.dk/brevkasse.
[7] stackexchange.com/users/5587898/pela.
[8] twitter.com/anisotropela.

Observational experience

- 2010–2019: Co-I on numerous successful proposals.
- 2009: PI on program searching for Lyα emission from damped Lyα absorbers, granted 4 nights at the NOT.
- Observed at the 2.5m Nordic Optical Telescope (25 nights), the IAC 80cm (6 nights), the Danish 1.5m (15 nights), the ESO 2.2m (8 nights).

Miscellaneous

- Coding skills: Python, Fortran, IDL, IRAF, shell scripting, html/css/Javascript.
- Published codes: See github.com/anisotropela.
- Languages: Danish, English, Swedish, Norwegian, German, Spanish.
- Personal interests: Boxing, Bicycle racing, playing music.

List of publications

Overview[1]

As of October 2019, I have authored or co-authored 40 refereed papers with a total of 2384 citations. Of these, 6 (+1 to be submitted) are first-author with a total of 431 citations and 5 are second-author papers. My h-index is 26.

Publications, refereed

First- and second-author papers

1. **Laursen, P.**, Shen, S., & Ceverino, D. 2019, *A theoretical model of cooling radiation from galaxy formation*, in prep.

2. **Laursen, P.**, Sommer-Larsen, J., Milvang-Jensen, B., Fynbo, J. P. U., & Razoumov, A. O. 2017, *Lyman α-emitting galaxies in the epoch of reionization*, A&A 627, A84

3. **Laursen, P.**, Duval, F., & Östlin, G., 2013, *On the (Non-)Enhancement of the Lyα Equivalent Width by a Multiphase Interstellar Medium*, ApJ, 766, 124

4. Jensen, H., **Laursen, P.**, et al., 2013, *On the use of Lyα emitters as probes of reionization*, MNRAS, 428, 1366

5. Christensen, L., **Laursen, P.**, et al., 2012, *Gravitationally lensed galaxies at $2 < z < 3.5$: direct abundance measurements of Lyα emitters*, MNRAS, 427, 1973

6. Noterdaeme, P., **Laursen, P.**, et al., 2012, *Discovery of a compact gas-rich damped Lyα galaxy at $z = 2.2$: evidence of a starburst-driven outflow*, A&A, 540, 63

7. Watson, D. & **Laursen, P.**, 2011, *The metallicity of gamma-ray burst environments from high energy observations*, A&A, 527, 104-107

8. **Laursen, P.**, Sommer-Larsen, J., & Razoumov, A. O., 2011a, *Intergalactic Transmission and its Impact on the Lyα Line*, ApJ, 728, 52-67

9. Fynbo, J. P. U., **Laursen, P.**, et al., 2010, *Galaxy counterparts of metal-rich damped Lyman α absorbers – I: The case of the $z = 2.35$ DLA towards Q2222-0946*, MNRAS, 408, 2128-2136

10. **Laursen, P.**, Sommer-Larsen, J., & Andersen, A. C., 2009b, *Lyman α Radiative Transfer with Dust: Escape Fractions from Simulated High-Redshift Galaxies*, ApJ, 704, 1640-1656

11. **Laursen, P.**, Sommer-Larsen, J., & Razoumov, A. O., 2009a, *Lyman α Radiative Transfer in Cosmological Simulations using Adaptive Mesh Refinement*, ApJ, 696, 853-869

12. **Laursen, P.** & Sommer-Larsen, J., 2007, *Lyman α Resonant Scattering in Young Galaxies Predictions from Cosmological Simulations*, ApJ, 657, 69L-72

Third-author+ papers

12. Östlin, G., et al. 2019 *The Source Of Leaking Ionizing Photons From Haro11 — Clues From HST/COS Spectroscopy Of Knots A, B And C*, to be subm. to ApJ

13. Pahl, A., et al. 2019 *The Redshift Evolution of Rest-UV Spectroscopic Properties to $z \sim 5$*, to be subm. to ApJ

14. Ranjan, A., et al. 2018, *Molecular gas and star formation in an absorption-selected galaxy: Hitting the bull's eye at $z \simeq 2.46$*, 2018, A&A, 618, 184

[1] All numbers are taken from NASA/ADS.

15. Bridge, J. S., et al. 2017 *The Lyman Alpha Reference Sample. VIII. Characterizing Lyman-Alpha Scattering in Nearby Galaxies*, 2018, ApJ, 852, 9

16. Herenz, E. C., et al. 2016 *The Lyman alpha reference sample. VII. Spatially resolved Hα kinematics*, A&A, 587, 78

17. Duval, F., et al., 2016 *The Lyman alpha reference sample. VI. Lyman alpha escape from the edge-on disk galaxy Mrk 1486*, A&A, 587, 77

18. Zabl, J., et al., 2015 *Deep rest-frame far-UV spectroscopy of the giant Lyman α emitter Himiko'*, MNRAS, 451, 2005

19. Rivera-Thorsen, T., et al., 2015 *The Lyman Alpha Reference Sample. V. The Impact of Neutral ISM Kinematics and Geometry on Lyα Escape*, ApJ, 805, 14

20. Guaita, L., et al., 2015 *The Lyman alpha reference sample. IV. Morphology at low and high redshift*, A&A, 576, 51

21. Östlin, G., et al., 2014 *The Lyα Reference Sample. I. Survey Outline and First Results for Markarian 259*, ApJ, 797, 11

22. Kankare, E., et al., 2014, *SN 2005at - A neglected type Ic supernova at 10 Mpc*, A&A, 572, 75

23. Jensen, H., et al., 2014, *Studying reionization with the next generation of Lyα emitter surveys*, MNRAS, 444, 2114

24. Pardy, S., et al., 2014, *The Lyman Alpha Reference Sample: III. Properties of the Neutral ISM from GBT and VLA Observations*, ApJ, 794, 101

25. Hayes, M., et al., 2014, *The Lyman Alpha Reference Sample. II. Hubble Space Telescope Imaging Results, Integrated Properties, and Trends*, ApJ, 782, 6

26. Duval, F., et al. 2014, *Lyman α line and continuum radiative transfer in a clumpy interstellar medium*, A&A, 562, 52

27. Krogager, J.-K., et al., 2013, *Comprehensive study of a $z = 2.35$ DLA Galaxy: mass, metallicity, age, morphology and SFR from HST and VLT*, MNRAS, 433, 3091

28. Watson, D., et al., 2013, *Helium in Natal H II Regions: The Origin of the X-Ray Absorption in Gamma-Ray Burst Afterglows*, ApJ, 768, 23

29. Hayes, M., et al., 2013, *The Lyman Alpha Reference Sample: Extended Lyman Alpha Halos Produced at Low Dust Content*, ApJ, 765, 27

30. Christensen, L., et al., 2012, *The low-mass end of the fundamental relation for gravitationally lensed star-forming galaxies at* $1 < z < 6$, MNRAS, 427, 1953

31. Fynbo, J. P. U., et al., 2011, *Galaxy counterparts of metal-rich damped Lyman α absorbers – II: A solar-metallicity and dusty DLA at* $z_{\rm abs} = 2.58$, MNRAS, 413, 2481-2488

32. Kann, D. A., et al., 2010, *The Afterglows of Swift-era Gamma-Ray Bursts. I. Comparing pre-Swift and Swift era Long/Soft (Type II) GRB Optical Afterglows*, ApJ, 720, 1513-1558

33. Hunter, D. J., et al., 2009, *Extensive optical and near-infrared observations of the nearby, narrow-lined type Ic SN 2007gr: days 5 to 415*, A&A, 508, 371-389

34. Nilsson, K. K., et al., 2009, *Evolution in the properties of Lyman-α emitters from redshifts* $z \sim 3$ *to* $z \sim 2$, A&A, 498, 13-23

35. Valenti, S., et al., 2008, *The Carbon Rich Type Ic SN 2007gr: The Photospheric Phase*, ApJ, 673, L155-L158

36. Curran, P. A., et al., 2007, *GRB 060206 and the Quandary of Achromatic Breaks in Afterglow Light Curves*, MNRAS, 381, L65-L69

37. de Ugarte Postigo, A., et al., 2007, *Extensive multiband study of the X-ray rich GRB 050408. A likely off-axis event with an intense energy injection*, A&A, 462, L57-L60

38. Holland, S. T., et al., 2007, *Optical, Infrared, and Ultraviolet Observations of the X-Ray Flash GRB 050416A*, AJ, 133, 122-129

39. Watson, D., et al., 2006, *A logN_{HI} = 22.6 DLA in a dark gamma ray burst: the environment of GRB 040501*, ApJ, 652, 011-1019

40. Sollerman, J., et al., 2006, *Supernova 2006aj and the associated X-Ray Flash 060218*, A&A, 454, 503-509

Publications, non-refereed

1. Ranjan, A., et al. 2018, *SDSS J151349.52+035211.28 Xshooter spectra*, VizieR On-line Data Catalog: J/A+A/618/184

2. Herenz, E. C., et al., 2015, *LARS VIII. Spatially resolved Halpha kinematics*, VizieR Online Data Catalog: J/A+A/587/A78

3. **Laursen, P.**, 2011b, *IGMtransfer: Intergalactic Radiative Transfer Code*, Astrophysics Source Code Library, arXiv:1012.2886

4. **Laursen, P.**, 2010, *Lyman α radiative transfer in the high-redshift, dusty Universe, Ph.D. thesis*, arXiv:1012.3175

5. Nilsson, K. K., et al., 2010, *Lyman α emitters from redshifts $z \sim 2$–3*, VizieR On-line Data Catalog, J/A+A/498/13

6. Hunter, D. J., et al., 2009, *UBVRIJHK observations of SN 2007gr*, VizieR On-line Data Catalog, J/A+A/508/371

7. Gorosabel, J., **Laursen, P.**, et al., 2005, *GRB 050315: Potential Host Galaxy*, NASA GCN, 3294, 1

8. Jensen, B. L., Gorosabel, J., **Laursen, P.**, Jakobsson, P., Watson, D., Fynbo, J. P. U., Hjorth, J., 2005, *GRB 050412: Optical Observations*, NASA GCN, 3243, 1

9. Álvarez, C., et al., 2004, *SUGAR-1: Spectrometry in Ultraviolet of GAlaxies at Redshift 1*, LAEFF