

DOCENT MARTIN SAHLÉN

ACADEMIC DEGREES

- 2019 **Docent (Associate Professor) in Astronomy**, Uppsala University, Sweden
- 2009 **DPhil in Astronomy**, Astronomy Centre, University of Sussex, UK
Thesis: "Bayesian constraints on dark energy and cosmic structure". Supervisor: Prof. Andrew R. Liddle.
- 2006 **Licentiate of Philosophy in Theoretical Physics**, Stockholm University, Sweden
Thesis: "Direct Reconstruction of the Quintessence Potential". Supervisor: Prof. Lars Bergström
- 2004 **Master of Advanced Study in Mathematics**, University of Cambridge, UK
Courses in Theoretical Physics and Cosmology. Essay: "Dark Energy".
- 2003 **MSc Engineering Physics (Civ. ing. teknisk fysik)**, KTH, Stockholm, Sweden
Thesis: "Gamma Rays from Primordial Black Holes in Supersymmetric Scenarios"
Supervisor: Prof. Lars Bergström and Dr. Anne M. Green, Stockholm University

ACADEMIC POSITIONS

- 09/2020 - 06/2021 **Fellow** Swedish Collegium for Advanced Study (SCAS), Uppsala, Sweden
since 03/2019 **Docent and Researcher** Physics & Astronomy, Uppsala University, Sweden
- 09/2016 - 02/2019 **Researcher, Course Lecturer** Physics & Astronomy, Uppsala University, Sweden
- 09/2016 - 12/2016 **Fulbright Visiting Scholar**, Physics & Astronomy, Johns Hopkins University, USA
- 12/2014 - 09/2016 **Parental leave**
- 12/2014 - 12/2016 **Visiting Researcher**, Astrophysics, University of Oxford, UK
- 10/2012 - 12/2014 **Postdoctoral Fellow, Philosophy of Cosmology**
Beecroft Inst. of Particle Astrophysics and Cosmology, University of Oxford, UK
- 09/2009 - 08/2012 **Oskar Klein Postdoctoral Research Fellow in Cosmology**
The Oskar Klein Centre, Department of Physics, Stockholm University, Sweden
- 03/2009 - 08/2009 **Postdoctoral Fellow in Statistics/Mathematical Biology**
Wellcome Trust Sanger Institute, Cambridge, UK
- 10 - 12/2006 **Visiting Scholar**, Physics Department, Syracuse University, USA
- 10/2005 - 12/2008 **Graduate Teaching Assistant PhD Studentship**
Department of Physics & Astronomy, University of Sussex, UK
- 10/2004 - 10/2005 **Marie Curie Fellowship**
EU Commission / Department of Physics & Astronomy, University of Sussex, UK
- 08/2003 - 12/2005 **PhD Position, Theoretical Physics** (graduated part-way, Licentiate degree)
Department of Physics, Stockholm University, Sweden

AWARDS & DISTINCTIONS

- Recognition of Work** Included in "The Best Writing on Mathematics 2018", Princeton University Press 2019
- Named Fellowships** Marie Curie Fellowship (2004), Klein Fellowship (2009-12), Fulbright Scholar (2016), P E Filén Fellow (2019-2021, by vice-chancellor of UU to distinguished associate professors).

FUNDING & RESOURCES

- Larger Grants** Swedish Collegium for Advanced Study Fellowship (2020-21), PI, ~800kSEK; P E Filén Fellowship (2019-21), PI, 300kSEK, Filén Foundation (Uppsala U.); "The Galaxy – Dark Matter Connection" (2019-20), PI, 300kSEK, Lundström-Åman Foundation (Uppsala U.); "The Physics of the First Cosmic Structures" (2016-19), PI, 1MSEK, Olle Engkvist Foundation; "Integrating Statistics, Data Science and Machine Learning in Physics and Engineering Education" (2020-21), PI, 288kSEK, ped. dev. grant, Uppsala U.; "Three Views on Cosmology: Physics, Philosophy, Religion" (2019-21), PI, 150kSEK, ped. dev. grant, Uppsala U.; Co-I on three ped. dev. grants, ~900kSEK.
- Scholarships** More than 20 scholarships, total value ~1MSEK (~€100k)
- Computing Resources** More than 600k CPU-h granted as PI on Swedish National Infrastructure for Computing (SNIC).

SCIENTIFIC CONSORTIA

- 4MOST** Member, Cosmology Redshift and Galaxy Cluster surveys
- BUFFALO survey** Member
- Dark Energy Survey** External Collaborator

Euclid Consortium	Member, Theory WG [Dark Energy/Modified Gravity, Dark Matter]; Primeval Universe WG [Survey Design, Lyman Break Galaxies, Theory, Lensing]; Galaxy Clustering WG [Euclid Voids group]. Contact person betw. Theory and Primeval Universe WGs on Dark Matter.
Square Kilometre Array	Associate Member, Cosmology [HI galaxy survey Focus Group] and Epoch of Reionization [EoR Synergy Focus Group] Science Teams and WGs. Co-lead on Lyman Break Galaxies.
XMM Cluster Survey	Member, Cosmology Lead

SCIENTIFIC PRESENTATIONS

Invited Presentations *Seminars:* Oslo (also colloquium), Carnegie-Mellon, Uppsala, Stockholm, Onsala, Oxford, Portsmouth, IAP Paris, Johns Hopkins, Harvard-Smithsonian CfA, Sussex, Case Western.

Conferences: Non-empirical Theory Assessment, Stockholm U. Philosophy Dept. (2019); Cosmology with Cosmic Voids, Flatiron Institute, New York (2018); Adv. in Theoretical Cosmology in Light of Data, NORDITA (2017); Big Questions in Astrophysics (Wallenberg Jubilee), Lund (2017); Philosophy of Cosmology, Tenerife (2014); Infinities and Cosmology, University of Cambridge (2013); Clusters of Galaxies as Cosmic Labs, MIT (2010).

Submitted Presentations More than ten at consortium and working group meetings of 4MOST, DES, Euclid, SKA, XCS and XXL. More than ten at international conferences, e.g. "Fundamental Physics with the SKA", "Science with the Hubble and James Webb Space Telescopes" and the "COSMO" conference series.

ACADEMIC LEADERSHIP & SERVICE

Membership of Professional Bodies Swedish Society for Members of Parliament & Researchers (*Member, 2017*); Int'l Astrostatistics Assoc. (*Member, 2016*); Int'l Astronomical Union (*Member, 2009*); Royal Astronomical Society (*Fellow, 2008*); Cambridge Philosophical Society (*Fellow, 2004*).

Leadership Training Group leadership and management training equivalent to 7.5 ECTS. Mentorship Program, Faculty of Science & Technology, UU (2018-19), sel. in competition.

Conference Organization Chair of three int'l conference SOC/LOC ["Structure of Gravity and Spacetime", Oxford (2014); "Inflationary Evidence" workshop, Oxford (2013); "Clusters of Galaxies as Cosmic Laboratories", Oskar Klein Centre (2011)]

Member of one int'l workshop SOC/LOC ["Philosophy of Cosmology", Oxford (2012-14)]

Positions of Trust Division Council member of the Astronomy Division, Uppsala University (2017-19).

Thesis Committees External opponent on one BSc and one PhD thesis committee.

Proposal Evaluation Invited expert evaluator and rapporteur for EU H2020 grants, EU M. Skłodowska-Curie fellowships, and NASA covering more than 30 applications.

Peer Review Regular referee for Eur. Phys. J. Plus (EPJP); Monthly Notices of the Royal Astronomical Society (MNRAS); Journal of Cosmology and Astroparticle Physics (JCAP); New Astronomy; Physical Review D (PRD); Universe.

SUPERVISION & PEDAGOGICAL ACTIVITY

Supervision Co-supervisor for two PhD students, supervisor for two Master students and eight Bachelor students. Informal co-supervision of additional PhD students.

Teaching Course lecturer on first, second, third cycle and cont. ed. courses of total 22.5 ECTS credits. Tutor on ten courses at first and second cycle of total 480 h.

Pedagogical Development Developed PhD level course on Statistical Inference for Physics & Astronomy, 7.5 ECTS credits. Co-I on three grants for pedagogical development projects. Authored one pedagogical compendium on Fermi problems; presentation and poster at pedagogical development conference. PI on two pedagogical development grants.

Pedagogical Training More than 22 ECTS on general and subject-specific teaching, learning and supervision.

OUTREACH & MEDIA

Popular Science More than 20 popular-science articles and public lectures. Contributor to the Philosophy of Cosmology website www.philosophy-of-cosmology.ox.ac.uk.

Media Coverage and Appearances Live interviews on Swedish national radio and TV news. Commentary on science stories to national printed media. Articles and interviews about my own research, including New Scientist, Science News, LiveScience, Space.com and Yahoo News.

TRANSDISCIPLINARY ENGAGEMENT

Lecturer and panelist on e.g. religion and science, art and science. Collaborating researcher on artistic research project. Project leader for 1-year art-science collaboration, exhibition, lecture series and documentary film.