

CURRICULUM VITAE

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EMPLOYMENT

Jan. 2016 – Royal Society University Research Fellow (proleptic Reader) at the JBCA, The University of Manchester
Jan. 2015 – Dec. 2015 Royal Society University Research Fellow at the IoA, Cambridge University
Oct. 2012 – Dec. 2014 Associate Research Scientist at Johns Hopkins University
Sept. 2011 – Sept. 2012 Senior Research Associate at the Canadian Institute for Theoretical Astrophysics
Oct. 2008 – Aug. 2011 Postdoctoral Researcher at the Canadian Institute for Theoretical Astrophysics
Sept. 2005 – Sept. 2008 Postdoctoral Researcher at the Max-Planck-Institut für Astrophysik
March 2005 – Aug. 2005 Research Fellowship at the Max-Planck-Institut für Astrophysik

EDUCATION

Oct. 2001 – March 2005 Ph. D. in Astrophysics at the Ludwig-Maximilians-Universität in Munich
Ph. D. institution: Max-Planck-Institut für Astrophysik
Title: *Spectral Distortions of the Cosmic Microwave Background*
Supervisor: Prof. Rashid Sunyaev
Ph. D. defense: *July 2005*
Oct. 2001 – Oct. 2004 Student of the International Max-Planck Research School on Astrophysics (IMPRS)
[www.imprs-astro.mpg.de]
Oct. 2000 – July 2001 Diploma in Physics (equivalent to M.Sc.) at the Universitäts-Sternwarte Göttingen
Title: *Contributions of the internal motion of the intracluster medium to the Sunyaev-Zeldovich Effect* (in German)
Supervisor: Prof. Karl Mannheim
Thesis submission: *May 2001*
Oct. 1998 – July 2001 Undergrad in physics at the Georg-August University of Göttingen
Oct. 1996 – Sept. 1998 Undergrad in physics at the Technical University of Hannover

RESEARCH INTERESTS

- *Cosmology*: spectral distortions of the CMB; cosmological recombination; early-universe physics, cosmological parameter estimation; Sunyaev-Zeldovich effect; 21 cm cosmology
 - *Atomic physics*: two-photon and Raman processes; hydrogen and helium recombination spectra; collisional processes in astrophysical plasmas
 - *Radiative transfer*: Lyman- α escape in the early Universe; line feedback; line scattering and partial frequency redistribution; electron scattering
 - *High energy physics*: energy transfer to the intergalactic medium by annihilating dark matter and decaying particles; variation of fundamental constants; accretion onto compact objects;
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RESEARCH GRANTS

- Royal Society Research Grant (RGF/EA/180053): £91,992
- ERC consolidator grant 2016: \simeq 2 M€
- Royal Society Research Grant (RG140523): £76,597
- Royal Society University Research Fellowship (UF130435): £406,979

AWARDS

- Recipient of the *Beatrice D. Tremaine* award 2010
- *Berliner-Ungewitter Diploma-Prize* of the Faculty of Physics in Göttingen, Summer 2001
- *Book Stipend* of the AVENTIS (former HOECHST AG) Studienstiftung, 1998-1999

MAJOR COLLABORATIONS

- Co-investigator of *PIXIE* lead by Alan Kogut (NASA Goddard)
- Collaborator of the *Inflation Probe Mission Concept Study* lead by Shaul Hanany (Minnesota)
- Member of *APSEra* lead by Ravi Subramanian (RRI India)
- Member of *CORE* and main author of several *CORE* Exploring Cosmic Origins papers
- Former *leader* of the CMB spectral distortion working groups in the *PRISM* and *CORe+* collaboration
- Former *Planck Associate* (HFI instrument) responsible for studies of the cosmological ionization history

SCIENTIFIC SOCIETIES

- Member of the Deutsche Physikalische Gesellschaft (DPG), 2000 –

TEACHING EXPERIENCE

- Invited Lecturer, Cosmology School "CMB from A to Z" (3 hours), Cargese, France, Nov 13 - 17, 2017
- Invited Lecturer, CANATATA Summer School (8 hours), Corfu, Greece, Sept 4 - 15, 2017
- Invited Lecturer at the School of Physics "Enrico Fermi" (2 hours), Varenna, Italy, July 2 - 12, 2017
- Invited Lecturer at the 2nd IFT School on Cosmology Tools (4 hours), Madrid, Spain, March 13 - 17, 2017
- Invited Lecturer at the Ecole de Physique (3 hours), Les Houches, Switzerland, April 2016
- Invited Lecturer at the ISAPP School 2015 (1.5 hours), Paris, France, June 2015
- CUSO Lecturer 2014 (14 hours), Geneva, Switzerland, Oct 16 - Nov 6, 2014
- Invited Lecturer at the Gif School 2014 (1.5 hours), Paris, France, Sept 8 - 12, 2014
- Invited Lecturer at the 1st IFT School on Cosmology Tools (3 hours), Madrid, Spain, Nov 12 - 15, 2013
- Invited Lecturer at KEK Particle Phenomenology (3 hours), Tsukuba, Japan, Sept 30 - Oct 3, 2013
- Invited Lecturer at the 100th Les Houches school on Post-Planck Cosmology (3 hours), July-Aug, 2013

SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

- Ph.D supervisor of Luke Hart (The University of Manchester), 09/2016 –
 - Ph.D co-supervisor of Liang Dai (Johns Hopkins University) with Prof. Kamionikowski, 12/2012 – 12/2014
 - Ph.D co-supervisor of Marzieh Farhang (University of Toronto) with Prof. Bond, 06/2009 – 04/2013
 - Supervisor of Jeffrey Fung (University of Toronto) during his first year Ph.D project, 09/2009 – 05/2010
 - Supervision of Jeffrey Fung (University of Toronto) as CITA summer student, 05/2009 – 09/2009
 - Collaboration with several Post-docs as a senior advisor
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ACADEMIC SERVICES

- *Panel activities* (i.e., proposal evaluation and ranking) for the NASA Astrophysics Theory Program and the European Research Council
- *Meeting organization*
 - Scientific organizer, CERN TH institute, Geneva, Switzerland, March 12–16, 2018
 - Scientific organizer, ‘Global 21cm and CMB Distortions’, Bangalore, India, July 11–16, 2016
 - Scientific organizer, ‘Dark Ages & White Nights’, St Petersburg, Russia, June 20–25, 2016
 - Scientific organizer of the Workshop on ‘CMB Distortions’, Chicago, USA, May 18–29, 2015
 - Scientific organizer of a special session, 223rd AAS meeting, Washington, USA, Jan 5–9, 2014
 - Scientific organizer of the Workshop on ‘Spectral Polarimetry’, Paris, France, Dec 2012
 - Scientific organizer of the Workshop on ‘21-cm Cosmology’, Toronto, Canada, June 2011
 - Scientific organizer of the Recombination Workshop held in Orsay/Paris, France, July 2009
 - Scientific organizer of the Workshop on ‘The Physics of Cosmological Recombination’, Garching/Munich, Germany, July 2008
 - Local Organizer of the CMB Network Meeting, Ringberg Castle, Germany, December 2002
- *Institutional activities*
 - Co-organizer of the JBCA colloquium series, the University of Manchester, 2016 –
 - Graduate Student Advisory Committee, Institute of Astronomy, University of Cambridge, 2015
 - Organizer of the cosmology discussion group at JHU, 2012 – 2014
 - Organizer of the cosmology discussion group at CITA, 2009 – 2012
 - Member of the Postdoc selection committee at CITA, 2010
 - Member of the Visitor/Seminar/Hosting committee at CITA, 2009 – 2012
- *Referee* for MNRAS, A&A, Phys. Rev. D & Let., JCAP, JHEP, EJP, Astronomy Letters

SOFTWARE DEVELOPMENT

- Author of COSMOSPEC (www.Chluba.de/CosmoSpec)
- Author of COSMOREC and RECFAST++ (www.Chluba.de/CosmoRec)
- Author of COSMOTHERM (www.Chluba.de/CosmoTherm)
- Author of SZPACK (www.Chluba.de/SZpack)

OUTREACH ACTIVITIES

- Volunteer at the Royal Society satellite summer exhibition at MoSI, 24–28 Oct, 2016
 - Volunteer at the Trafford Centre outreach event, 23/24 April, 2016
 - *Public talks* at the University of Toronto
 - Co-organizer of *Open door days*, Max Planck Institute for Astrophysics in Garching
 - Co-organizer of *Hands on Universe* workshop for school teachers, University of Göttingen
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