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EDUCATION

- PhD in Theoretical Physics (Cosmology and Astroparticle Physics)** **June 23, 2011**
 The Oskar Klein Centre for Cosmoparticle Physics, Department of Physics, Stockholm University, Sweden.
 Thesis title: *Supersymmetry vis-à-vis observation: dark matter constraints, global fits and statistical issues.*
- PhL (Fil. Lic.) in Theoretical Physics (Cosmology and Astroparticle Physics)** **February 26, 2010**
 The Oskar Klein Centre for Cosmoparticle Physics, Department of Physics, Stockholm University, Sweden.
 Thesis title: *Weak-scale supersymmetry: parameter space, complexity and global fits.*
- Masters in Physics (Cosmology)** **January 18, 2006**
 Department of Physics, Sharif University of Technology, Tehran, Iran.
 Thesis title: *Primordial perturbations as an observational probe of inflation*; completed at the Inter-University Centre for Astronomy and Astrophysics (IUCAA), Pune, India.
- Bachelors in Electrical Engineering (Control and Telecommunication)** **September 21, 2003**
 Department of Electrical Engineering, Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran.
- High school** **September 21, 1998**
 National Organization for Development of Exceptional Talents (NODET), Iran.

PROFESSIONAL EXPERIENCE

- Junior Research Chair in Cosmology** **October 1, 2018 - present**
 International Center for Fundamental Physics (ICFP), École Normale Supérieure (ENS), Paris, France.
 Awarded as the *2018 laureate* of the prestigious ENS-ICFP Junior Research Chair program - including funding for hiring PhD students.
- Senior Postdoctoral Research Fellow in Cosmology** **August 1, 2016 - July 31, 2018**
 Lorentz Institute for Theoretical Physics, Leiden University, The Netherlands.
- Postdoctoral Research Fellow in Cosmology** **November 5, 2014 - July 31, 2016**
 Institute for Theoretical Physics (ITP), Heidelberg University, Germany.
 DFG-funded project TRR33 “The Dark Universe”.
- Postdoctoral Research Fellow in Cosmology** **August 1, 2011 - November 4, 2014**
 Institute of Theoretical Astrophysics, University of Oslo, Norway.
 ERC-funded project “The Anisotropic Universe: A Reality or Fluke?”.

SCIENTIFIC AND PROFESSIONAL DUTIES

- *Large-scale collaborations:*
 - Member of the **LiteBIRD** Collaboration; 07.2019 - present
 - Member of the ESA **Euclid** Consortium (active mainly in Theory Working Group); 01.2012 - present
 - **Leader** of **Euclid** Work Package on *initial conditions*; 11.2018 - present
 - Member of the **Square Kilometer Array (SKA)** Collaboration; 01.2015 - present
 - LFI Core Team Member of the ESA **Planck** Collaboration; 06.2013 - present
 - Member of the proposing team for **CMB-HD**; 01.2019 - present
 - Member of the **Euclid** Consortium Diversity Committee (ECDC); 06.2018 - present
 - Member of the **Aquila** Consortium for Bayesian Large-Scale Structure Inference; 10.2018 - present
 - Member of the **European COST Action** “Cosmology and Astrophysics Network for Theoretical Advances and Training Actions (**CANTATA**)”; 08.2016 - present
 - Affiliated member of the NASA **Fermi Large Area Telescope (LAT)**; 2008 - 2011
- *Member of the organizing committees for:*
 - SKA Cosmology SWG Meeting; École Normale Supérieure, Paris, France, January 2020
 - EUNGS: Early Universe from Next Generation of Surveys; École Normale Supérieure, Paris, France, Spring 2021
 - GOLD: The Golden Cosmological Surveys Decade; Paris-Saclay, France, April-June 2020
 - Paris Primordial Cosmology Meetings (3 per year); Paris, France, started in 2019
 - 9th and 10th TRR33 Winter School on Cosmology; Passo del Tonale, Italy, December 2015 and 2016
 - Tehran Conference on Modified Gravity; Tehran, Iran, January 2016
 - Heidelberg-Geneva Workshop on Cosmology: Gravity at the Largest Scales; Heidelberg, Germany, October 2015
 - ITP Local Interactions 2015: Gravity Beyond Einstein; Heidelberg, Germany, May 2015
 - International Conference on Beyond Λ CDM; Oslo, Norway, January 2015
 - Dark Matter Meeting; Oslo, Norway, October 2011
 - OKC Workshop on Supersymmetry (PROSPECTS); Stockholm, Sweden, September 2010
- Associate member of the *Committee on Space Research (COSPAR)*; 2014 - present
- Organizer of *Leiden Cosmology Seminars*, 2016 - 2018, Leiden, The Netherlands
- Organizer of *ITP Cosmology Seminars*, 2015 - 2016, Heidelberg, Germany

– *Other memberships:*

- Management Committee Member (representative of the Netherlands) for the European COST Action CANTATA; 2016 - 2018
- PhD dissertation committees and PhD/postdoc selection panels (Leiden & Paris)
- European Physical Society; 2010 - present
- Swedish Physical Society (2010 - 2014) and Swedish Association of University Teachers (2010-2012)

– *Referee for international journals:*

- Physical Review D
- Physical Review Letters
- Physics Letters B
- Journal of Cosmology and Astroparticle Physics (JCAP)
- Journal of High Energy Physics (JHEP)
- Monthly Notices of the Royal Astronomical Society
- Classical and Quantum Gravity (CQG)
- Physics of the Dark Universe
- Universe
- General Relativity and Gravitation (GERG)
- European Physical Journal C
- Reports on Progress in Physics
- European Journal of Physics
- Journal of Physics G
- Astrophysics and Space Science

ACADEMIC AND RESEARCH INTERESTS

- Multi-messenger cosmology: cosmological surveys (*Planck*, *Euclid*, *the SKA*, *LiteBIRD*, *CMB-HD*)
- Early-universe cosmology: cosmic microwave background (CMB), initial conditions, inflation and alternatives, primordial perturbations, large-scale structure, primordial black holes, string cosmology
- Late-time universe: cosmic acceleration, dark energy, cosmological constant problem, large-scale structure
- Cosmological tests of gravity: CMB, large-scale structure (ultra-large scales, nonlinear regime), gravitational waves
- Laboratory tests of gravity and dark energy
- Large-scale cosmic anomalies and observational tensions: model building and data analysis
- Big data, statistical inference and high-performance computing in cosmology and fundamental physics
- Artificial intelligence in cosmology and fundamental physics
- Theory and phenomenology of dark matter
- Physics beyond the Standard Model of particle physics: supersymmetry, supergravity

SELECTED RESEARCH VISITS

- *Jodrell Bank Centre for Astrophysics, Department of Physics and Astronomy, University of Manchester, UK [February 2020]*
- *Lorentz Institute for Theoretical Physics, Leiden University, Netherlands [September 2019]*
- *Imperial College London, UK [May 2019]*
- *Queen Mary University of London, UK [May 2019]*
- *Institute of Cosmology and Gravitation - University of Portsmouth, UK [May 2019]*
- *King's College London, UK [May 2019]*
- *University of Nottingham, UK [April 2018]*
- *Institut de Physique Théorique, CEA Saclay, Paris, France [September 2017]*
- *Institute for Research in Fundamental Sciences (IPM), Iran [November-December 2016 and August 2017]*
- *The Oskar Klein Centre for Cosmoparticle Physics, Stockholm University, Sweden [September 2016]*
- *University of Geneva, Switzerland [November 2015]*
- *Bielefeld University, Germany [July 2015]*
- *Nordic Institute for Theoretical Physics (NORDITA), Sweden [March and August 2015]*
- *Lund University, Sweden [June 2015]*
- *DAMTP, University of Cambridge, UK [June 2014]*
- *ITP, Heidelberg University, Germany [May 2014]*
- *DAMTP, University of Cambridge, UK [April 2014]*
- *California Institute of Technology (Caltech) and NASA Jet Propulsion Laboratory (JPL), USA [November and December 2013]*
- *Asia Pacific Center for Theoretical Physics (APCTP), South Korea [June 2013]*
- *California Institute of Technology (Caltech) and NASA Jet Propulsion Laboratory (JPL), USA [November and December 2012]*
- *University of Oxford, UK [April - June 2012]*
- *Inter-University Centre for Astronomy and Astrophysics (IUCAA), India [Summer and Autumn 2005]*
- *Inter-University Centre for Astronomy and Astrophysics (IUCAA), India [Summer and Autumn 2004]*

• **2020:**

- ESO Conference: H_0 “Assessing Uncertainties in Hubble’s Constant Across the Universe”, **Online**
- LiteBIRD France, **Online**
- Euclid Theory Working Group Meeting 2020, **Online**
- Euclid Consortium Meeting 2020, **Online**

• **2019:**

- B-mode from Space, Max-Planck-Institut für Astrophysik, Garching, **Germany**
- CoSyne: Cosmological synergies in the upcoming decade, Institut d’Astrophysique de Paris (IAP), Paris, **France**
- French Dark Energy Theory Meeting, Institut Henri Poincaré, Paris, **France**
- Aquila Consortium meeting, Imperial College London, **UK**
- ENS team-building meeting, Roscoff, **France**
- The Paris-Saclay AstroParticle Symposium 2019, Institut Pascal, **France**
- Paris-Amsterdam-London-Stockholm 9th meeting (PALS) 2019, Sorbonne University, Paris, **France**
- Understanding cosmological observations, Benasque, **Spain**
- Particle physics, String theory and Cosmology (PASCOS) 2019, University of Manchester, **UK**
- Gordon Research Conference (GRC) on String Theory and Cosmology: New Physics in the Era of Precision Cosmology, Barcelona, **Spain**
- Gordon Research Seminar (GRS) on String Theory and Cosmology: Accelerating Expansion and Cosmological Evolution in String Theory, Barcelona, **Spain**
- Inflation and Geometry, Institut d’Astrophysique de Paris (IAP), Paris, **France**
- Euclid Consortium Meeting 2019, Helsinki, **Finland**
- Planck NPIPE meeting, Institut d’Astrophysique de Paris (IAP), Paris, **France**
- Euclid Theory Working Group Meeting 2019, University of Oxford, **UK**
- Cosmology@Malta, Fort St Elmo, Valletta, **Malta**

• **2018:**

- SKA-France meeting, École Normale Supérieure (ENS), Paris, **France**
- Aquila Consortium meeting, Institut d’Astrophysique de Paris (IAP), Paris, **France**
- Machine Learning @IHP, Institut Henri Poincaré, Paris, **France**
- Analytics, Inference, and Computation in Cosmology, Institut Henri Poincaré, Paris, **France**
- The vacuum of the Universe 2018: from cosmology to particle physics – CMB Anomalies and Tensions, Institute of Cosmos Sciences (ICCUB), Barcelona, **Spain**
- Euclid Theory Working Group Meeting, Institut Henri Poincaré, Paris, **France**
- Euclid Theory Work Package I (Cosmic Acceleration and Tests of Gravity) Meeting, University of Lisbon, **Portugal**
- Physics@Veldhoven, Veldhoven, **Netherlands**

• **2017:**

- Square Kilometre Array (SKA) Cosmology Science Working Group meeting, Queen Mary University of London, **UK**
- 2nd CANTATA Meeting, Frankfurt Institute for Advanced Studies, **Germany**
- Dark Energy in the Laboratory, Leiden, **Netherlands**
- Dark Energy and Modified-Gravity cosmologies: DARKMOD, CEA Saclay, Paris, **France**
- Tehran Meeting on Cosmology, IPM, **Iran**
- Advances in Theoretical Cosmology in Light of Data, NORDITA, **Sweden**
- Theoretical Approaches to Cosmic Acceleration: Connecting String, Supergravity and Quantum Field Theory Aspects of (Near-) De Sitter Space, Leiden, **Netherlands**
- Euclid Theory Working Group Meeting, Heidelberg, **Germany**
- Physics@Veldhoven, Veldhoven, **Netherlands**

• **2016:**

- 10th TRR33 Winter School on Cosmology (as organizer), Passo del Tonale, **Italy**
- 1st CANTATA Meeting, Lisbon, **Portugal**
- 8th Bethe Center Workshop: Particle Physics meets Cosmology, Bad Honnef, **Germany**
- SW10: Hot topics in Modern Cosmology, Cargese, Corsica, **France**
- Theoretical Cosmology in the Era of Large Surveys, Galileo Galilei Institute, Florence, **Italy**

• **2015:**

- 9th TRR33 Winter School on Cosmology (as organizer), Passo del Tonale, **Italy**
- Planck I&S and CP Meeting, Torun, **Poland**
- Workshop on Particles and Cosmology, Corfu, **Greece**
- Euclid Consortium Meeting 2015, EPFL, **Switzerland**
- Kosmologietag 10, Bielefeld University, **Germany**
- Extended Theories of Gravity, NORDITA, **Sweden**
- Beyond Λ CDM, Oslo, **Norway**

- **2014:**
 - *PLANCK 2014*, Ferrara, **Italy**
 - *Dark Energy Interactions*, NORDITA, **Sweden**
 - *Planck Joint LFI/HFI meetings*, Bologna, **Italy** and Paris, **France**
 - *NBIA-APCTP Workshop on Cosmology*, Copenhagen, **Denmark**
 - *COSPAR Scientific Assembly*, Moscow, **Russia**
 - *Planck I&S Meeting*, Torun, **Poland**
 - *Euclid Consortium Meeting*, Marseille, **France**
 - *Structure of Gravity and Spacetime*, University of Oxford, **UK**
- **2013:**
 - *COSMO 2013*, University of Cambridge, **UK**
 - *Prospects of Studying Dark Energy*, Seoul, **South Korea**
 - *IEU Cosmology Conference*, Seoul, **South Korea**
 - *Euclid Consortium Meeting*, Leiden, **Netherlands**
 - *The Universe as seen by Planck*, ESA/ESTEC, **Netherlands**
 - *Cosmological Tests of Gravity*, University of Oxford, **UK**
- **2012:**
 - *Modern Cosmology: Early Universe, CMB and LSS*, Benasque, **Spain**
 - *Marcel Grossmann Meeting*, Stockholm, **Sweden**
 - *Recontres Itzykson – Heart of Darkness: Dark Energy and Modified Gravity*, IPhT CEA-Saclay, **France**
 - *Nordic-Baltic Summer School (as lecturer)*, Onsala, **Sweden**
 - *Euclid Consortium Meeting*, Copenhagen, **Denmark**
- **2011:**
 - *The Return of de Sitter*, NORDITA, **Sweden**
 - *Global BSM Fits and LHC Data*, CERN, **Switzerland/France**
- **2010:**
 - *Darkness Visible*, University of Cambridge, **UK**
 - *Quarks, Strings and the Cosmos*, Stockholm, **Sweden**
 - *Experimental Search for Quantum Gravity*, NORDITA, **Sweden**
 - *TOOLS 2010*, Winchester, **UK**
 - *Cosmic Ray Backgrounds in Dark Matter Searches*, Stockholm, **Sweden**
- **2009:**
 - *TeV Particle Astrophysics V*, SLAC/Stanford, **USA**
 - *Astroparticle Physics: A Pathfinder to New Physics*, NORDITA, **Sweden**
- **2008:**
 - *Biennial Leopoldina Conference on Dark Energy*, Munich, **Germany**
 - *Identification of Dark Matter*, Stockholm, **Sweden**
 - *Summer School on de Sitter Cosmology*, NORDITA, **Sweden**
 - *TeV Scale Physics and Dark Matter*, NORDITA, **Sweden**
 - *Symmetries and Phases in Universe*, Munich, **Germany**
 - *LHC and Beyond*, NORDITA, **Sweden**
- **2007:**
 - *Dark Matter, from the Cosmos to the Laboratory*, SLAC/Stanford, **USA**
 - *Cosmology, Strings, and Phenomenology*, Stockholm, **Sweden**
 - *Winter School in Particle Physics and Cosmology*, Gausdal, **Norway**
- **2006:**
 - *School on Inflation and String Cosmology*, Aarhus, **Denmark**

TEACHING EXPERIENCE

- **École Normale Supérieure (ENS) [Autumn/Winter 2019/2020]:** Cosmology.
- **École Normale Supérieure (ENS) [Autumn 2018]:** Topics in Cosmology.
- **Leiden University [Spring 2018]:** Topics in Theoretical Physics.
- **Heidelberg University [Spring/Summer 2016]:** General Relativity (Obertutor).
- **Heidelberg University [Autumn/Winter 2015]:** Quantum Field Theory.
- **Heidelberg University [Spring/Summer 2015]:** Advanced Cosmology.
- **Stockholm University [2008-2011]:**
 - General Relativity
 - Advanced Relativistic Quantum Field Theory
 - Relativistic Quantum Mechanics
 - Quantum Mechanics III

- **Sharif University of Technology [2004-2006]:**
 - Advanced Cosmology
 - Advanced Electrodynamics
 - Advanced Classical Mechanics
 - Physics Lab. I and II
- **Tehran Polytechnic [2002-2003]:** Electromagnetism, Analytical Mechanics, Electrical Measurements and Circuits Lab.
- **LION Summer School: Modern physics at all scales** (invited lecturer) [**July 2017**], Leiden University.
- **LION Summer School: Modern physics at all scales** (invited lecturer) [**July 2018**], Leiden University.
- **Cosmology Beyond the Standard Model** (14-hour intensive course; invited lecturer) [**December 2016**], Tehran, Iran.
- **Nordic-Baltic Summer School** (invited lecturer) [**Summer 2012**], Onsala, Sweden.

SUPERVISION EXPERIENCE

- PhD advisor: Nicolas Chartier; École Normale Supérieure, started in September 2019. Title: “Understanding cosmic origins from galaxy surveys with Likelihood-Free Inference”. Co-supervisors: Benjamin Wandelt (IAP) and Nick Kaiser (ENS). Funding provided by ENS as part of starting grant for my JRC position.
- Primary supervisor (MSc): Anna Negro; Erasmus student at École Normale Supérieure from University of Padova, Italy, started in February 2020. Co-supervisor: Sabino Matarrese (Padova).
- Supervisor (MSc): William Doumerg; École Normale Supérieure (defended).
- Supervisor (MSc): Senwen Deng; École Normale Supérieure (defended).
- Co-supervisor (MSc): Michalis Dagtzis; Leiden University (defended).
- Supervisor (MSc): Jamie Watson; Leiden University (defended).
- Co-supervisor (summer project): Roohi Dalal (from JPL/Caltech, US); Leiden University (finished).
- Supervision elements for Valeri Vardanyan’s PhD; Leiden University (defended).
- Co-supervisor (MSc): Vida Saeidzadeh (defended), Andia Khosravi (defended), Fereshteh Majidi (defended), and Sara Hoseini’s (defended); Alzahra University.
- De facto supervisor (PhD): Henrik Nersisyan; Heidelberg University (adviser: Luca Amendola) (defended).
- De facto supervisor (MSc): Marvin Lüben; Heidelberg University (defended).
- De facto supervisor (MSc): Supranta Sarma Boruah; Indian Institute of Technology, Kanpur (defended).
- Co-supervisor (MSc): Romina Fassihi; IPM, Tehran (defended).
- Supervision elements for Adam R. Solomon’s PhD; University of Cambridge (adviser: John Barrow) (defended).

PRIZES, AWARDS AND HONOURS

- 2018 laureate of the prestigious ENS-ICFP Junior Research Chair (JRC) program
- 2019 Giuseppe & Vanna Cocconi and 2018 Gruber Cosmology Prizes (awarded to Planck team)
- German Research Foundation (DFG) funding - Project TRR33 “The Dark Universe”, 2014
- Helge Axelsson Johnson Foundation Award, 2010
- Recipient of the competitive HEAC PhD funding, 2006
- Winner of the International Physics and Mathematics Olympiads, country level, 1997/1998

COMPUTER SKILLS

• *Programming languages:* Fortran, C, Python • *Computational software:* Mathematica, Maple, MATLAB • *High performance and parallel computing:* MPI, OpenMP • *Cosmological codes and packages:* CAMB, CosmoMC, CLASS, HEALPix, Commander, EFTCAMB, EFTCosmoMC, CosmicFish, hi_class • *Extensive experience in working with supercomputers, computer clusters, and large data sets*

COURSES TAKEN DURING PHD

• General Relativity Theory with Cosmology • Cosmology and Astroparticle Physics • Relativistic Quantum Mechanics • Quantum Field Theory • Theory of Supersymmetry • Applications of Supersymmetry • String Theory • Grand Unified Theories • Statistical Methods in Physics • Statistical Physics • Radiation Processes in Astrophysics • High Energy Astrophysics • University Pedagogy.

PERSONAL INFORMATION

• *Language:* Persian (mother tongue), English (fluent), Norwegian (fair), Swedish (sufficient) • *Hobbies:* dancing, playing violin, music (classical, Persian traditional), fencing, traveling, hiking, reading (literature, philosophy, politics), movies.

REFERENCES

- Prof. Andrei Linde, Stanford University, USA, +1 650 723-2687 and +1 650 494-6106, alinde@stanford.edu
 Prof. Renata Kallosh, Stanford University, USA, +1 650 725-4736, kallosh@stanford.edu
 Prof. Luca Amendola, ITP Heidelberg, Germany, +49 6221 54-9407, lamendola@thphys.uni-heidelberg.de
 Prof. Nicholas Kaiser, ENS, France, +33 (0)1 44 32 33 67, nick.kaiser@ens.fr
 Prof. Anne-Christine Davis, DAMTP, University of Cambridge, UK, +44 1223 337878, acd@damtp.cam.ac.uk
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 Prof. Hans Kristian K. Eriksen, ITA Oslo, Norway, +47 22 85 84 54, h.k.k.eriksen@astro.uio.no
 Prof. Frode Kristian Hansen, ITA Oslo, Norway, +47 22 85 65 16, f.k.hansen@astro.uio.no