

Full name and date

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Date of CV: Dec 13, 2018
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Education and degrees awarded

PhD (physics), University of Helsinki, Department of Physics, 19.9.2003
MSc (physics), University of Helsinki, Department of Physics, 26.3.1999

Other education and training, qualifications and skills

2011-2012 Aalto University Executive Education for Leaders: JOKO (part of MBA)

Linguistic skills

Finnish (mother language), English (excellent), Swedish (average)

Field

Space, physics, geosciences, magnetosphere, ionosphere, upper atmosphere

Current positions

01.01.2018 – Director, Finnish Centre of Excellence in Research of Sustainable Space
01.01.2017 – Professor in computational space physics, University of Helsinki (UH), Finland
01.01.2011 – Vice director, Kumpula Space Centre

Previous work experience

2013 – 2016 Research professor in space research, Finnish Meteorological Institute (FMI)
2011 – 2016 Head of Department, Earth Observation, Finnish Meteorological Institute, Finland
2008 – 2013 Academy Research Fellow, Academy of Finland (AoF) and FMI
2005 – 2008 Academy of Finland Post-doctoral researcher, Finnish Meteorological Institute
2003 – 2005 Postdoctoral researcher, Finnish Meteorological Institute
2004 (part) Visiting scientist, National Center for Atmospheric Research, Boulder, USA
1999 – 2003 PhD student, Finnish Meteorological Institute
1996 – 1999 Trainee, Finnish Meteorological Institute
Career breaks: Maternity leave, 10 March 2007 – 8 January 2008

Research funding, leadership and supervision (total grants as PI or Co-PI over 15 M€)

European Union (Project grants)

- 2017 – 2019 Marie Curie Action (as Advisor, Fellow: Lucile Turc), EU Horizon2020, 197 k€
- 2016 – 2021 PI, Consolidator Grant, European Research Council, 2 M€, 2015 call
- 2011 – 2013 Co-I, European Cluster Assimilation Technology, FP7 (my part: 330 k€)
- 2011 – 2013 Co-I, European Investigation and Service of Geomagnetically Induced Currents, FP7 (my part of total: 50 k€)
- 2008 – 2013 PI, Starting Grant, European Research Council, 700 k€, 2007 call

European Space Agency (Project funding)

- 2012 – 2013 Co-I, Electrodynamics of Mesosphere-Lower thermosphere-Ionosphere region study for European Space Agency (my part of total: 14 k€)

Academy of Finland (Research projects and positions)

- 2018 – 2025 PI, Finnish Centre of Excellence in Research of Sustainable Space

- 2017 – 2021 PI, Towards Electron-scale Modelling of space Plasmas: Observations and global simulations (440 k€)
- 2014 – 2017 PI, Hybrid-Vlasov simulations of solar and magnetospheric plasmas (330 k€)
- 2011 – 2014 Co-I Shocked plasmas in near-Earth space (my part: 350 k€)
- 2008 – 2013 PI: Academy Research Fellow, 617 k€
- 2005 – 2008 PI: Academy postdoctoral researchers, Mass and energy in the magnetosphere-ionosphere system: Drivers and Circulation, 156 k€

PRACE, European research infrastructure for high-performance computing

- 2017 – 2018 PI, Magnetospheric observation of numerically simulated heavy ions near Earth (MOONSHINE), 75 million core hours, Tier-0 call (2016153521), PRACE
- 2015 – 2016 PI, Global kinetic modelling of space weather – with extreme scalability (VLASIATOR), 24 million core hours, Tier-0 call (2014112573), PRACE
- 2012 – 2013 PI, Vlasiator: Global hybrid-Vlasov simulation for space weather, 30 million core hours Tier-0 call (201206111), PRACE

CSC – IT Center for Science

- 2018 – 2019 PI, Grand Challenge computing grant, 9 MCPUhours
- 2016 – 2017 PI, Grand Challenge computing grant, 12.5 MCPUhours
- 2015 – 2016 Co-PI, Grand Challenge computing grant, 12.5 MCPUhours
- 2014 Vlasiator; CSC Special Grand Challenge project; PI, 4 MCPUh

Leadership in research work

- Director of Centre of Excellence: 4 consortium partners, 5 teams. Goal is to establish first full-scale Finnish Space programme with nanosatellites. Developed vision and strategy for the Centre, gathered the consortium and led the proposal, lead the work.
- 2011 – 2016: Head of Department, 60 people in 3 groups (atmospheric remote sensing, space and radar technology, space weather). Main responsibilities and achievements:
 - Strategy. Developed and led long-term scientific strategy process for earth observation, radar and space technologies and space weather
 - Budgeting. Excellent skills in economic planning, monitoring and reporting
 - Founder of FMI's 24/7 space weather service
 - Steering group work, coaching, stakeholder relations, international influencing.
- Leader of own research group (Vlasiator team), PI and founder of Vlasiator
- Co-I (PI: Lucile Turc), International Space Science Institute team “Global study of the transmission of the foreshock ULF waves into the magnetosheath and the magnetosphere”, 2018 – 2019
- Co-I, Virtual Instrument team member, THOR (ESA M4 Candidate mission), ESA
- Solar wind Magnetosphere Ionosphere Link Explorer (SMILE), model support, ESA-China mission, launch 2021

Supervision of post-doctoral researchers

2006 – 15 Postdocs/ 5 PhD students/ 4 Master Students

Faculty of Science/ Department of Physics, University of Helsinki/ Finland and FMI

Quality and scope of publication activity

- 85 peer-reviewed submitted and published papers in international journals (full list in <http://blogs.helsinki.fi/palmroth/publications/>)
- 40 invited first author presentations to international large conferences
- 322 posters and talks in international conferences

Awards and honors

2018 19th Honorary Graduate, Kangasala upper secondary school

2018 Finnish Cultural Foundation, award for a Citizen Science book (27 k€)

2016 Väisälä award for scientific achievements, Finnish Academy of Science and Letters

2015 European Research Council Consolidator grant awardee
2014 European Research Council Consolidator grant, finalist
2008 – 2013 European Research Council Starting grant 200141-QuESpace, 2007 call

Merits in teaching

- University pedagogics course 1 and 2, spring 2017
- Lecturer for “Introduction to plasma physics” and “Space applications of plasma physics” (2017-)

Other academic merits (examples)

Evaluation of PhD theses

2012 Pre-examiner and thesis committee member for A. Divin, University of Leuven, Belgium
2009 Pre-examiner and thesis committee member for L. Daldorff, Uppsala Univ., Sweden
2018 Pre-examiner and thesis committee member for E. Eriksson, Uppsala Univ., Sweden

Evaluation of scientific merits

2018 Professor recruitment committee, chair (experimental material physics), University of Helsinki, Finland
2018 Professor recruitment committee (extreme materials), University of Helsinki, Finland
2018 Professor recruitment committee (gravitational wave cosmology), University of Helsinki, Finland
2018 Professor recruitment committee (atmospheric sciences 1), University of Helsinki, Finland
2018 Professor recruitment committee (atmospheric sciences 2), University of Helsinki, Finland
2017 Professor recruitment committee (experimental particle physics), University of Helsinki, Finland
2014 Professor recruitment committee (meteorology), University of Helsinki, Finland
2013 Evaluator for a professorship in University of Michigan
2013 Evaluator for research staff appointment, U California in LA

Evaluation of grant proposals

2018 Evaluator and panelist, German Science Foundation
2017 Evaluator and panelist, Academy of Finland AIPSE programme
2016 Evaluator, Future Emerging Technologies, European Commission
2016 Evaluator for PRACE, DECI Tier-1
2015 – Evaluator for CSC Grand Challenge computational grants
2013 – Evaluator for PRACE Tier-0
2008 – Evaluator and panelist for research grants, NASA, NSF, Sweden, Canada, Belgium

Editorial activities and refereeing

2016 – Associate Editor, *Annales Geophysicae*, leading open access journal in space physics
2015 Journal of Geophysical Research, recognition for excellent reviewer award
2001 – Referee for *Nature*, *J. Geophys. Res.*, *Geophys. Res. Lett.*, *Ann. Geophys.*, *J. Atmos. Solar Terr. Phys.*, *Adv. Space Res.*, *Space Sci. Rev.*

Memberships and positions of trust (most important)

2018 Advisory group INFRAG advising European Commission about for purchasing the pre-exascale and exascale supercomputers, EuroHPC Joint Undertaking
2018 – European Space Agency, member of the Earth Explorer Programme Mission Advisory Group Daedalus
2018 – Commission for Space Affairs in Finland, permanent advisor
2018 Ministry of Economic affairs and employment, permanent advisor for Space Strategy group
2018 – Member of the Finnish Academy of Technological Sciences
2018 – Member of the Finnish Academy of Science and Letters
2018 – University of Helsinki Collegium, vice member
2017 – Academy of Finland, steering group for programme in artificial intelligence
2017 – Finnish space law committee, Ministry of Economic affairs and employment

2016 – 2017 Scientific Advisory Group, Chair, European Commission’s Space programme
 2016 – Finnish Physical Society, Board member
 2015 – Commission for Space Affairs in Finland, member of Secretariat (national decision preparing body)
 2014 – 2017 Scientific Advisory Group “Science with and for the society”, European Commission
 2014 – Scientific committee advising CSC IT Center for Science, Finland
 2014 – 2015 Architectural group for Finnish scientific computing, Ministry of Education and Culture, member representing government research institutes
 2013 – 2015 Scientific Advisory Group, European Commission’s Space programme
 2013 – 2015 Cooperation forum to advise in scientific computing in Finland, Ministry of Education and Culture, member representing government research institutes
 2012 – 2016 Space security board member, Ministry of Foreign Affairs, Finland
 2012 – Committee for Space Research (COSPAR), Finnish National Committee
 2011 – 2016 Delegate of Finland, European weather spacecraft organization (EUMETSAT) Scientific and Technical group
 2011 – 2014 Steering board of Space weather working team, European Space Agency

Administrative responsibilities in research organizations

2018 – Steering group, Department of Physics, University of Helsinki
 2018 – Steering group, Helsinki Institute of Physics (vice member representing Dpt of Physics)
 2018 – Steering group, Helsinki Centre for Data Science (HiDATA), U Helsinki and Aalto U
 2017 – Chair of work wellbeing group, Department of Physics, University of Helsinki
 2017 – Media and Communications Steering group, Faculty of Science
 2013 Member of the FMI steering group, vice member in 2012
 2012 – 2016 FMI Strategy group, member representing R&D Division
 2013 – 2016 Member of Steering board, FMI Communications department
 2011 – 2016 Member, FMI body in co-operation between research and operational activities

Societal activities and merits, examples

- Numerous outreach articles, e.g., a citizen science book about catching the aurora (2018)
- Numerous outreach public lectures, latest for 500+ business executives, TiedonValo 6.9.2018
- Numerous appearances in TV, radio, newspapers. Latest in national news 12.12.2018, latest in more than 40 media articles 12.12.2018. Featured in a book selecting 40 Finnish women from 1800 onwards. Featured in a book selecting 15 Finnish women in sciences. Appearance in TV or other media once per month.
- Panellist for the most important Finnish political seminar series “SuomiAreena”, 2017
- Main media contact person and media strategy developer for Rosetta landing media event, 2014
- Blogger for Academy of Finland (2013 - 2017)
- Media campaigns, e.g., <https://www.csc.fi/web/taydellinenyhtalo/-/lahiavaruuden-ymmartaja>

Positions of trust in public and private sectors

2016 – 2017 Member of Advisory Board, Vapa Media Oy (media company)
 2015 – Member of Board, Eurooppalaiset ry (Society for women in Europe, combining Finnish women MP’s, MEP’s, policy advisors, etc dealing with the EU)
 2015 – 2018 Member of Board, URSA Astronomical society (18 000 members)
 2012 – 2014 Member of national delegation, Nordea Bank Finland Oyj

Expert duties and assignments for research-based policy advising tasks, examples

2018 Invited expert – EU-FI bilateral meeting about space weather, 14.2.2018
 2013 Member of the Academy of Finland Director General’s delegation to see Finnish Members of European Parliament, European Union
 2013 Invited expert, Finnish Research Infrastructure (FIRI) panel interviewing the Finnish Center for Scientific Computing Ltd
 2009 Invited expert, Presidential Forum IX, Changing Finland, Presidential Palace