Curriculum Vitae: Tuija I Pulkkinen

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Updated November 5, 2020

Current position

2018, Chair and Professor, Department of Climate and Space Sciences and Engineering,
College of Engineering, University of Michigan, Ann Arbor, MI, US
2018, Adjunct Professor, Department of Electronics and Nanoengineering, Aalto University, Espoo, Finland

Education

1995, Title of Docent (entitled to supervise PhD students), Space Physics, University of Helsinki
1992, Doctor of Philosophy, University of Helsinki, Theoretical Physics
1989, Licentiate of Philosophy, University of Helsinki, Theoretical Physics
1987, Master of Science, University of Helsinki, Theoretical Physics
(POBox 3, 00014 University of Helsinki, Finland; https://www.helsinki.fi/en/university)

Previous positions

2014-2018, Vice President for Research and Innovation, Aalto University, Espoo, Finland
2011-2014, Dean, Aalto University School of Electrical Engineering
2013-2018, Professor, Department of Radio Science and Engineering, Aalto University
2008-2010, Head, Earth Observation Programme, Finnish Meteorological Institute, Helsinki, Finland
2004-2007, Head, Space Research Programme, Finnish Meteorological Institute
2003-2004, Director, Geophysical Research Division, Finnish Meteorological Institute
2000-2003, Research professor, Finnish Meteorological Institute
1998-2000, Research manager, Finnish Meteorological Institute
1988-1997, Scientist, Finnish Meteorological Institute

Extended visits

2005-2006, Orson Anderson visiting professor, IGPP/Los Alamos National Laboratory, NM, USA, 12 months
1996-1997, Fulbright scholar, LASP/University of Colorado, Boulder, CO, USA, 16 months
1993, Visiting scientist, IGPP/UCLA, Los Angeles, CA, USA, 1 month
1990-1992, Visiting scientist, Goddard Space Flight Center, Greenbelt, MD, USA, 6 months

Awards and honors

2019, Birkeland Lecturer, The Norwegian Academy of Science and Letters
2017, Julius Bartels Medal, European Geosciences Union
2014, US National Academy of Sciences, international member
2011, Academia Europaea, member
2011, Academy of Technology (Teknillisten Tieteiden Akatemia), member
2010, The Finnish Society of Sciences and Letters (Suomen Tiedeseura), member
2005, Royal Astronomical Society, associate member
2004, NASA Group Achievement Award
2001, Finnish Academy of Sciences and Letters (Suomalainen Tiedeakatemia), member
1999, City of Helsinki Science Award
1998, James B. Macelwane Medal and fellowship of the American Geophysical Union
1993, Editors' Citation for Excellence in Refereeing JGR-Space Physics, AGU
1991, Outstanding Student Paper Award, AGU Spring Meeting, Baltimore, MD, USA

Service for Finnish expert and funding organizations

Academy of Finland (Suomen Akatemia), research funding organization:
2009-2012, Board member, vice chair, Research Programme on Climate Change
2007-2012, Member, Research Council for Natural Sciences and Engineering
2010-2012, Board chair, Sustainable Energy research program
2008-2009, Board member, Research Programme on Sustainable Production and Products
2008-2009, Board member, Research Programme on Computational Sciences
2007-2009, Board member, Sustainable Energy research program
2007, Board member, International evaluation of the Computer Sciences in Finland
2007, Board member, International evaluation of the Mechanical, Production and Automation Science in Finland

Finnish National Space Committee (Avaruusasiain neuvottelukunta), national advisory body:
2015-2018, Associate member
2012-2018, Member of the secretariat
2007-2010, Member

Federation of Finnish Learned Societies (Tieteellisten seurain valtuuskunta), scientific academy:
2008-2010, Board member

Finnish Academy of Sciences and Letters (Suomalainen tiedeakatemia), scientific academy:
2006-2008, Board member
2002-2008, Secretary of the Geosciences Group

The Finnish Society of Sciences and Letters (Suomen tiedeseura), scientific academy:
2015-2018, Election committee

Finnish Physical Society (Suomen Fyysikkoseura), scientific society:
2004-2006, Board member, Society journal Arkhimedes
2003-2005, Board member

Finnish Meteorological Institute:
2020- External jury member, FMI early career scientist of the year
2006-2009, Board member, Sodankyla Geophysical Observatory, University of Oulu
1999-2008, Executive board member, Finnish Graduate School for Astronomy and Space Physics

Aalto University:
2018- Fellow, to promote the Millennium Technology Prize of the Technology Academy Finland
2017, Member, evaluation committee for Wihuri Foundation for International Prizes
2016, Member, Olli V. Lounasmaa Memorial Prize committee
2015-2016, Advisory board member, StartupLife student internship programme
2013, Board member, Aalto University Committee on environmental research and education
2012-2015, Board member, Foundation for Advancing Technology (Tekniikan edistmissäätiö)
2012-2015, Board member, TKK support foundation (TKK:n tukisäätiö)
2013-2018, Board member, Finnish Centre for Astronomy with ESO
2010-2013, Aalto U representative, University of Helsinki Science Campus Infrastructure Committee2011-2017, Member, Aalto University President's Management Team

Other Finnish national science policy positions:
2017-2018, Member, Board of VTT Technical Research Centre of Finland
2017-2018, Confederation of Finnish Industries, Business transformation committee (EK:n Liiketoiminnan uudistuminen -valiokunta)
2016-2019, Member, Tekes Delegation (Tekesin valtuuskunta), advisory body for innovation funding agency
2016-2018, Member, Board of Directors, Smart and Clean Foundation

Finland's national representative in international organizations

EISCAT (European Incoherent Scatter Radar) Association:
2013-2018, Member, National Representative in EISCAT Council

EUMETSAT (European Meteorological Satellite Organization)
2008-2010, Steering Group Chair, Satellite Application Facility on Ozone and Atmospheric Chemistry Monitoring (O3MSAF)

NOT (Nordic Optical Telescope):
2011-2012, Comete Cientifico Internacional (CCI), delegate of the Academy of Finland

WMO (World Meteorological Organization):
2010-2018, National point of contact, Space weather activities

Service for European expert and funding organizations

European Space Agency:
2010-2012, Expert, Space Situational Awareness Programme
2002, Member, ESA Solar System Working Group, evaluation of Flexi mission proposals
2000-2002, Member, European Space Agency, Solar System Working Group

European Union:
2009-2013, Member, ERC Advanced Grant Proposal Evaluation group, 2009-2013
2008, Member, Evaluation board for COST action 724, 2008
2007-2013, Member, Finnish advisory group for Ideas Programme, FP7
2003, Member, Evaluation panel of the European Space Science Committee (ESSC)

Service for US expert and funding organizations

NAS (United States National Academy of Sciences):
2020, Member, Committee for Space Weather Operations and Research Infrastructure Workshop
2019, Member, Committee on Review of the SMD 2019 Science plan
2018-, Member, Committee on Solar and Space Physics under the Space Studies Board
2016-2017, Member, Arctowski Medal Committee
2015-2016, Member, Cozzarelli Prize Selection Committee

NASA (United States National Aeronautics and Space Administration):
2020, Chair, NASA Heliophysics Division 2020 Senior Review
Chair, NASA Heliophysics review panel
NASA SR&T panel, twice

University of Michigan
2020, Member, CoE Campus Support Committee for COVID-19 actions
2019-2020, Member, Earth Day at 50 and Sustainability Collaborations Committee

Service for other research funding organizations (evaluations and recommendations):
2012-2018, Chair, Space Research Programme Committee, Research Council of Norway
2001-2009, Member, Swedish Space Research Advisory Board
Member, Swedish Research Council panel (twice)
Chair, Academy of Finland Space Physics and Astrophysics panel
Mail-in reviews of research proposals for Academy of Finland, Swedish National Space Board, US National Science Foundation, NASA, Canadian Space Agency, Canadian Research Council, and European Union.

Other Expert tasks

2019, Chair, Evaluation Panel of the 2019 Research Assessment Exercise of the University of Eastern Finland
2017, Member, Search committee for Director of Space Research Institute, Austrian Academy of Sciences
2015-2018, Member, Science Advisory Council of the Deutsches Geoforschungszentrum Potsdam, Germany
2012-2018, Chair, Space Research Programme Committee, Research Council of Norway
2010-2017, Member, Publication Forum for evaluation of Finnish science
2012, Chair, Panel 5, Research Assessment Exercise, Royal Institute of Technology, Stockholm, Sweden
2012- Expert, European Space Agency, Board of the Space Situational Awareness Programme
2008, Member, Search committee for new director for EISCAT
2008, Chair, Panel 5, Research Assessment Exercise, Royal Institute of Technology, Stockholm, Sweden
2005, Member, International Evaluation Panel of UK Physics and Astrophysics
2001-2009, Member, Space Research Advisory Committee, Swedish National Space Board
Reviewer of scientific articles: Science, PNAS, MNRAS, J. Geophys. Res., Space Physics, J. Geophys. Res., Atmospheres, Geophys. Res. Lett, Ann. Geophys., Planet. Space Science, J. Atmosph. Space Phys., Adv. Polar Upper Atmosph. Res., and other journals.

International scientific organizations, memberships and offices held

AE (Academia Europaea):
2015-2021, Member, Section Committee of the Earth and Cosmic Sciences

AGU (American Geophysical Union):
2015, Member, Centennial Task Force
2009, Member, AGU Strategic Planning Forum
2006-2008, Chair, Fellows Committee
2004-2006, Member, Fellows Committee
2000-2002, Member, James B Macelwane Medal Committee
1998-2000, Member, Meetings Committee

COSPAR (Committee on Space Research):
2012-2018, Chair, Finnish National Committee
2012-2018, Member, COSPAR Council
2007-2011, Member, Finnish National COSPAR Committee
1998-2000, Chair, Subcommission D3
1993-1996, Vice-chair, Subcommission D3

EGU (European Geosciences Union):
2016-2021, Member, Jean Dominique Cassini Medal Committee
2010-2011, Vice-President (past president), European Geosciences Union
2008-2010, President, European Geosciences Union
2007-2008, Vice-President (president-elect), European Geosciences Union
2005-2007, Member, EGU President's Advisory Group
2003-2007, President, Solar-Terrestrial Sciences Division
1999-2003, Secretary, Magnetosphere Subsection

IAGA (International Association for Geomagnetism and Aeronomy):
1995-1999, Reporter on "Dynamics of the geomagnetic tail", Division III, IAGA
1995-1999, Chair, Working group IIF/III4, IAGA

IUGG (International Union of Geodesy and Geophysics):
2006-2011, Member, Finnish National Committee

SCAR (Scientific Committee on Antarctic Research):
2000-2004, Member, Solar-Terrestrial and Astrophysical Research working group

SCOSTEP:

1994-, Scientific Discipline Representative

URSI (Union Radio-Scientifique Internationale):
2014-2018, Member, Finnish Commission H
2006-2018, Member, Finnish National Committee, Representative of the Finnish Academy of Sciences

Editorial and reviewer tasks

Editor in Journals:
2011-2017, Surveys of Geophysics, member of the editorial board
2011-2014, Space Science Reviews, member of the editorial board
2003-2005, Annales Geophysicae (Magnetospheric physics), topical editor

Editor in Volumes:
2009, *Maan ytimesta avaruuteen*, eds Ilmari Haapala and Tuija Pulkkinen, Bidrag till kannedom av Finlands Natur och Folk, Publications of the Finnish Society of Sciences and Letters, Sastamala
2005, *Inner Magnetosphere: Physics and Modeling*, eds T. I. Pulkkinen, N. A. Tsyganenko, and R. W. H. Friedel, AGU Monograph 155, AGU, Washington DC, 2005
2004, *Substorms-7*, eds N. Y. Ganushkina and T. I. Pulkkinen, FMI Publications
2001, *Validation of Magnetospheric models*, Adv. Space Res. Vol 28, No 12, eds T. Pulkkinen and R. Wolf

Organization of scientific meetings

Main organizatorial responsibility:
2009, Programme committee chair, EGU General Assembly, Vienna, Austria
2008, Programme committee chair, "Maan ytimesta avaruuteen", Symposium by the Finnish Academy of Sciences and Letters, Helsinki, Finland
2008, Programme committee chair, EGU General Assembly, Solar Terrestrial Sciences programme, Vienna, Austria
2007, Programme committee chair, EGU General Assembly, Solar Terrestrial Sciences programme, Vienna, Austria
2005, Programme committee chair, EGU General Assembly, Solar Terrestrial Sciences programme, Vienna, Austria
2004, Programme committee chair, EGU General Assembly, Solar-Terrestrial Sciences programme, Nice, France
2004, Programme committee chair, International Conference on Substorms VII, Finland
2003, Programme committee chair, AGU Chapman conference on Physics and Modeling of the Inner Magnetosphere, Helsinki, Finland

Convener of international scientific meetings:
Inner Magnetosphere Conference III, Los Angeles, USA, 2015
Inner Magnetosphere Conference II, Los Angeles, USA, 2013
Geomagnetic storms: toward a coupled systems-level understanding, IAGA III021, Perugia, Italy, 2007.
D3.2, Global magnetospheric dynamics and energetic particles, COSPAR, China, 2006.
GAIII07, Geomagnetic disturbances, storms and radiation belts, IAGA, France, 2005.
Invited reviews on solar system and magnetospheric plasmas, EGU, Austria, 2005.
Open session on the magnetosphere, EGU, France, 2004.
Open session on the magnetosphere, EGS, France, 2003.
Open session on the magnetosphere, EGS, France, 2002.
Open session on the magnetosphere, EGS, France, 2001.
Open session on the magnetosphere, EGS, France, 2000.
Validation of Magnetospheric Models, COSPAR, Poland, 2000.
Energetic electrons and ions in the inner magnetosphere during geomagnetic storms, EGS, France, 2000.
Comparison of observations and simulations of global magnetospheric structure, S-RAMP, Japan, 2000.
S311, Space weather: Models, near real-time monitoring and predictions, IUGG, Sweden, 1997.
S314, Magnetospheric models and their critical evaluation, IUGG, USA, 1995.

Program committee member:
Chapman conference on Scientific challenges pertaining to space weather forecasting including extremes, Pasadena, CA, USA, 11-15 Feb, 2019.
Physics Days: Annual Meeting of the Finnish Physical Society, Helsinki, March, 2015
Physics Days: Annual Meeting of the Finnish Physical Society, Joensuu, March, 2012.
Scientific Organizing Committee of D3.2 session "Magnetic Substorms and Tail Dynamics", COSPAR 39th Assembly, 14-22 July, 2012.
Earth observation and water cycle science, Frascati, Italy, 2009.
Inner magnetosphere workshop, Korpilampi, Espoo, Finland, 2008.
Eighth International Space Plasma Simulation School, Hawaii, 2007.
Eighth International Conference on Substorms, Canada, 2006.
Seventh International Conference on Substorms, Finland, 2004.
Fifth International Conference on Substorms, Russia, 2000.
Fourth International Conference on Substorms, Japan, 1998.
Symposium "Particle acceleration in space plasmas", COSPAR Scientific Assembly, France, 1996.

Acquired research funding
2020, NASA, Drive Center proposal SOLSTICE, $1 202 162 (PI Tamas Gombosi)
2018, Academy of Finland, Competence Center for the Materials Bioeconomy, 4 666 400 Euro
2018, Academy of Finland, Aalto University Research Profile funding for Quantum technology, Smart mobility, Future of work, and Experience design, 11 700 000 Euro
2017, Academy of Finland, Aalto University Research Profile funding for Digital technology ecosystems, Sustainable production and consumption, and Marine and Arctic technology, 10 800 000 Euro
2016, Academy of Finland, Aalto University Research Profile funding for Advanced energy solutions, Human-centered living environments, and Health and wellbeing, , 13 600 000 Euro
2016, Academy of Finland, Shocks and Magnetosheaths in the Heliosphere, 400 000 Euro
2016, Tekes, Aalto Innovation Scout, 431 512 Euro
2016, Tekes, KINO-Aalto, 681 337 Euro
2015, Academy of Finland, Profiling of Finnish Universities, 12 012 000 Euro
2013, Academy of Finland, Missing links in space weather driving, 521 068 Euro
2005, Academy of Finland, Solar wind - magnetosphere transport, 149 800 Euro
2002, Academy of Finland, Space plasma simulations and their applications, 180 000 Euro
2001, Academy of Finland, Cluster II and MIRACLE, 1 714 500 FIM
2001, EU high-level conferences, Interball and beyond, 37 660 Euro
2001, Academy of Finland, Chapman Conference on Inner Magnetosphere, 32 000 FIM
2001, Finnish Academy of Sciences, Chapman Conference on Inner Magnetosphere, 4000 Euro
2000, Academy of Finland, Theory of MHD simulation, 1 497 200 FIM
2000, Academy of Finland, Solar maximum in Sun-Earth connections, 750 000 FIM
1999, Academy of Finland, Upgrading the FMI all-sky camera network, 270 000 FIM
1998, Academy of Finland, Building of a radar to examine plasma flows over Antarctic, 250 000 FIM
1997, Suomalainen Tiedeakatemia, Visit to University of Colorado, 20 000 FIM
1997, Academy of Finland, Visit to University of Colorado, 192 000 FIM
1996, Suomen Kulttuurirahasto, Visit to University of Colorado, 30 000 FIM
1996, Finnish Fulbright Association, Visit to University of Colorado, 18 000 USD
1996, Academy of Finland, Visit to University of Colorado, 92 000 FIM
1991, Sohlberg delegation, Thesis work, 9 000 FIM
1991, Vilho, Yrjö ja Kalle Väisälän rahasto, Thesis work, 18 000 FIM

University of Michigan advisor/examiner roles
2020, Austin Brenner, Graduate Student (Department of Aerospace Engineering) advisor
2019, Shannon Hill, Graduate student (Rackham Merit Fellowship) advisor

2019, S. Minallah Qualifying exam committee member
2019, J. Holmes, Qualifying exam committee member
2019, B. Swiger, Qualifying exam committee member
2019, M. Akhavan-Tafti, PhD thesis committee member

MSc thesis advisor roles in Finland
2014, R. Naderpour, MSc, Aalto University
2008, G. Baumann, MSc, University of Zurich
1998, K. Korkiakoski, MSc, University of Helsinki
1996, M. Syrjäsuo, MSc, Helsinki University of Technology

PhD thesis advisor roles in Finland
2007, T. Laitinen, PhD, University of Helsinki
2003, M. Palmroth, PhD, University of Helsinki
2001, M. Syrjäsuo, PhD (Engineering), Helsinki University of Technology
2001, T. Mäkinen, PhD, University of Helsinki
1998, P. K. Toivanen, PhD, University of Helsinki
1997, K. Kauristie, PhD, University of Helsinki

Thesis examiner roles in Finland
2017, L. Holappa, PhD, University of Oulu
2017, S. Hoilijoki, PhD, University of Helsinki
2009, J. Lonnroth, Helsinki University of Technology
2002, A. Kozlovsky, PhD, University of Oulu
2000, E. Huttunen, MSc, University of Helsinki
1999, A. Pajunpää, Ph Lic, University of Helsinki
PhD thesis opponent roles in Finland
2002, A. Kozlovsky, University of Oulu

PhD thesis roles in Sweden
2003, E. Borälv, PhD thesis opponent, Uppsala University, Sweden
2003, A. Kullen, PhD thesis committee member, Royal Institute of Technology, Alfven Laboratory, Sweden
Support for young scientists
1999-2001, Jury member, European Union Contest for Young Scientists
2002,2004, Jury member, TuKoKe - Finnish national science contest for young scientists
2007-2012, Jury member, Viksu - Academy of Finland national science contest for young scientists

Publications
Author of 237 publications listed in ISI Web of Knowledge database
Editor for four conference proceedings volumes
Author of two encyclopedia articles
Author of over 90 papers in conference proceedings
Author of about 500 conference presentations including 85 invited presentations.
H-index 43, 6 300 citations (ISI Web of Knowledge), H-index 52, 8900 citations (Google scholar)