

# CURRICULUM VITAE

Hanna Vehkamäki

December 11, 2018

## 1 Full name

Hanna Tuula Katariina Vehkamäki (previously Arstila)

## 2 Date and place of birth

27th December 1969, Helsinki, Finland

## 3 Current Position

professor in computational aerosol physics  
Institute for Atmospheric and Earth System Research/Physics, Faculty of Science, University of Helsinki, 1.12.2009-

## 4 Career breaks

Maternity leave 5.5.-10.12. 2007 (7 months)  
Maternity leave 6.5.-9.12. 2005 (7 months)

## 5 Education and Training

Herttoniemen yhteiskoulu, Helsinki, Finland:

- 31.5. 1988 Matriculation examination

University of Helsinki, Finland:

- 16.11. 2000 Docent in theoretical physics
- 16.1. 1998 Ph. D.
- 18.3. 1994 M. Sc.

## 6 Previous professional appointments

### Academy of Finland

- Academy Research Fellow 1.8.2003-30.9.2009

### University College London, United Kingdom:

- Research Fellow 1.1.1998-31.12.1999

### University of Helsinki(UH), Department of Physics:

- University researcher 1.10.-30.11. 2009
- Research scientist 1.1. 2003- 31.7.2003
- Academy of Finland postdoctoral researcher 1.1. 2001- 31.12.2002
- Senior assistant (substitute) 1.9.2000-31.12 2000
- Assistant, 1.1.1998-31.12.2000 (on leave of absence 1998-1999, 9/2000-12/2000)
- Assistant(substitute) 1997 (6 months)
- Research scientist 1997 (6 months)
- Planning officer 1994 (3 months), 1995 (7 months)
- Research assistant 1992 (3 months), 1993 (7 months)
- Fee-paid teacher 1990 (2 months)

### UH, Department of Theoretical Physics:

- Assistant (substitute) 1991 (5 months), 1992 (7 months)
- Fee-paid teacher 1991 (3 months), 1992 (3 months)

### Research Institute for Theoretical Physics:

- Junior Fellow 1995 (5 months), 1996 (12 months)

## 7 Teaching experience

### Supervisor/examiner of bachelor theses:

- Riikka Suikkari 2017-
- Jyrki Martikainen 2017-2018 'Aerosolien kaukokulkeutumien havaitseminen ja vaikutukset'
- Valtteri Tikkanen 2017 'Latentti lämpö argonklusterin kasvussa'
- Paula Hietala 2016 'Hiukkaskokojakauman alkupään ekstrapoloiminen tunnetusta jakaumasta mittalaitteen leikkausrajan yläpuolella'
- Mai Allo 2016 'Hyttiälän talvikoulussa käytettävän SMEAR II-datan laskentamenetelmistä, taustoista'

- Roope Halonen 2015 'Simuloitujen ja kokeellisten happo-emäshydraattiklusterijakaumien vertailu' ('Comparison of simulated and experimental acid-base hydrate cluster distributions')
- Matti Ala-Lahti 2014 'Molekyylien klusteroituminen ammoniumioniin sekä molekyyliklustreiden kokeellisten ja simuloitujen jakauminen vertailu' ('Clustering of molecules with ammonium ion and comparison of experimental and simulated cluster distributions')
- Tommi Tenkanen 2011 'Time-of-Flight -massaspektrometrin sisäisten olosuhteiden vaikutukset ilmakehän molekyyliklusterien mittauksessa' ('The effect of internal conditions of Time-of-Flight mass spectrometer on measurement of molecular clusters in the atmosphere')
- Risto Karinkanta 2010 'Yksinkertainen kaksikomponenttinen homogeeninen nukleaatiokinetiikka' ('Simple two-component homogeneous nucleation kinetics')
- Tinja Olenius 2010 'Veden ja rikkihapon kaksikomponenttisen homogeenisen nukleaation laboratoriomusten tulosten vertailu' ('Comparison of results of water-sulphuric acid two-component homogeneous nucleation laboratory studies')
- Ville Loukonen 2009 'Kontaktikulman ja tiivistymisytimen rooli heterogeenisessä nukleaatioissa' ('Role of contact angle and condensation nucleus in heterogeneous nucleation')
- Topi Siro 2009 'Mpemban ilmiö' ('Mpemba's phenomenon')

**Supervisor of master students:**

- Valtteri Tikkanen 2017-
- Paula Hietala 2016-2018: 'Sulfamiinihappo-ammoniakki-vesi-klustereiden massaspekttrin selittäminen kvanttikemiallisilla menetelmillä' ('Explaining the mass spectrum of sulfamic acid-ammonia-water clusters using quantum chemical methods')
- Nasim Ghasemi-Vierling 2017 'Literature Review on the mass accommodation coefficient of water'
- Roope Halonen 2016 'A critical re-examination of constrained equilibrium hypothesis in classical nucleation theory - a computational study'
- Karoliina Ignatius 2011-2013 'Jäänukleaation teoreettinen ja kokeellinen tutkimus: kirjallisuuskatsaus' ('Theoretical and experimental research on ice nucleation: a literature review')
- Tinja Olenius 2010-2011 'Ilmakehän molekyyliklustereiden haihtumisnopeuksien laskeminen kvanttikemiallisilla metodeilla määritettyjen muodostumisenergioiden perusteella' ('Evaporation rates of atmospheric clusters derived from quantum chemically calculated formation energies')
- Ville Loukonen 2007-2010 'Exploring the formation of atmospheric aerosol particles using quantum mechanics: some insights on the role of amines in sulfuric acid driven nucleation'
- Risto Makkonen 2004-2006 'Eristettyjen klusterien energiajakaumia molekyyli-dynamiikkasimulaatioista' ('Energy distributions of isolated clusters from molecular dynamic simulations')

- Martta Salonen 2002-2005 'Kaksikomponenttisysteemin pintafaasin tarkastelua käyttäen tiheysfunktionaaliteoriaa ja fenomenologisia malleja' ('Study of the surface phase of a two component system using density functional theory and phenomenological models')
- Tommi Bergmann 2004-2005 'Kaasumolekyylien vaikutus argonklusterin muodostumisenergiaan ja kriittisen klusterin kokoon' ('The effect of gas molecules to the formation energy and critical size of argon clusters')
- Eija Vartiainen 2002-2005 'Kosteusvauriorakennuksessa mitattu aerosolihiukkasten lukumääräkokojakauma' ('Size distribution of aerosol number concentration measured in a moisture damaged building')
- Antti Lauri 2000-2001 'Klassisen nukleaatioteorian ennusteita binääriselle heterogeeniselle nukleaatiolle' ('Predictions of classical nucleation theory on binary heterogeneous nucleation')

**Supervisor of licenciate students:**

- M. Sc. Johanna Lauros 2002-2005 'Simulation and parametrisation of the effects of atmospheric variability on the binary water-sulphuric acid nucleation'

**Supervisor of Ph. D. students:**

- M. Sc. Golnaz Roudsari 2017-
- M. Sc. Roope Halonen 2016-
- M. Sc. Nanna Myllys 2015-2017 'From electronic structures to molecular-level cluster formation mechanisms in the atmosphere'
- M. Sc. Narcisse Tsona Tchinda 2011-2016 'First principles studies of ionic oxidation of sulfur dioxide and molecular clustering'
- M. Sc. Oona Kupiainen 2010-2016 'From cluster properties to concentrations and from concentrations to cluster properties'
- M. Sc. Tinja Olenius 2011-2015 'Cluster population simulations as a tool to probe particle formation mechanisms'
- M. Sc. Kai Ruusuvuori 2008-2015 'Modelling the role of charge in atmospheric particle formation using quantum chemical methods'
- M. Sc. Martta Toivola (formerly Salonen) 2005-2014 'Structural simulation of molecular clusters and vapor-liquid interface'
- M. Sc. Ville Loukonen 2010-2014 'Sulfuric acid and amines in atmospheric clustering: first-principles investigations'
- M. Sc. Jan Julin 2006-2011 'Molecular dynamics simulations of homogenous nucleation'
- M. Sc. Erik Herrmann 2003-2010 'Computational fluid dynamics simulations in aerosol and nucleation studies'
- M. Sc. Anca Hienola (formerly Gaman) 2002-2008 'On the homogeneous and heterogeneous nucleation of some organic compounds'
- M. Sc. Anni Määttänen 2003-2007 'Investigations of planetary boundary layer processes and particle formation in the atmosphere of planet Mars'

- permanent senior scientist position in academia: Research scientist, (Laboratoire ATmosphères, Milieux, Observations Spatiales, France) 2009 -
- M. Sc. Theo Kurtén 2005-2007 'Quantum chemical studies on tropospheric nucleation mechanisms involving sulfuric acid'
  - permanent senior scientist position in academia: University Lecturer (University of Helsinki, Finland) 2012 -
- M. Sc. Joonas Merikanto 2001-2007 'Monte Carlo simulations of molecular clusters in nucleation'
- M. Sc. Antti Lauri 2001-2006 'Theoretical and Computational Approaches on Heterogeneous Nucleation'
  - permanent senior scientist position in academia: University Lecturer (University of Helsinki) 2015 -

### Supervisor of post doctoral researchers

- Tommaso Zanca 2018 -
- Bernhard Reischl 2018 -
- Monica Passananti 2016 -
- Olli Pakarinen 2014 -
- Hongbin Xie 2016 - 2017
- Evgeni Zapadinsky 2016 - 2018
- Jonas Elm 2015 - 2017
- Henning Henschel 2012 - 2016
- Nicolai Bork 2011 - 2014
- Ismael Kenneth Ortega Colomer 2007 - 2013
  - permanent senior scientist position in academia: senior research fellow at ONERA, The French Aerospace Lab 2015 -
- Ismo Napari 2000 - 2012
- Matthew McGrath 2009 - 2011

### Lectured courses:

- Autumn 2017- UH Dept. of Physics: Joint coordinator of Atmospheric science seminars for MS and PHD students
- Autumn School in Computational Physics organized by Aalto University, 120 min lecture of free energies, 24.10.2016
- Autumn 2014- Spring 2017 UH Dept. of Physics: Joint coordinator of Physics and Theoretical Physics MSc seminar
- Autumn 2013, Autumn 2012, Autumn 2011, Autumn 2010 (56 hours of lectures each year), Autumn 2002 (12 hours of lectures) UH Dept. of Physics: Thermodynamics

- Spring 2010-Spring 2014 UH Dept. of Physics: Coordinator of Theoretical Physics MSc seminar
- Women's Aerosol train, series of 12 two-day intensive courses (12 hours of lectures per course) lectured jointly with Dr. Ilona Riipinen. 2011: Uppsala University (Sweden), Tampereen teknillinen yliopisto (Finland), University of Eastern Finland, Kuopio (Finland), 2010: University of Tartu (Estonia), National University of Ireland, Galway (Ireland), University of Leeds/University of Manchester (UK), University of Cologne (Germany), Paul Scherrer Institut (Switzerland), University of Gothenburg (Sweden), Lund University (Sweden)/University of Copenhagen (Denmark), The Institute of Chemical Process Fundamentals, Prague (Czech Republic), Leibniz Institute for Tropospheric Research, Leipzig (Germany)
- Single lectures on Computational Aerosol Physics at Hyttiälä Summer School 2010 and 2012, and at Computational nanoscience course 2010 and 2012, and/or Classical Nucleation theory at Hyttiälä Summer School 2010
- Co-organizer of the first NOSA (Nordic Society for Aerosol Research) summer school 16-22.8. 2009, Hyttiälä, Finland
- Spring 2009, Spring 2007, Spring 2005, Spring 2003 UH Dept. of Physics: Classical nucleation theory (former name Phase transitions in aerosol physics) (42 hours of lectures per course)
- 2.-3.6 2008 University of Stockholm: Intensive course on Atmospheric particle formation together with Ilona Riipinen
- Autumn 2003 UH Dept. of Physics: Simulations of formation of molecular clusters (8 hours of lectures)
- Spring 2001 UH Dept. of Physics: Fundamental physics II and III (42+42 hours of lectures).
- Autumn 2000 UH Dept. of Physics: Fundamental physics I (52 hours of lectures)
- Spring 1992 University of Helsinki (UH) Dept. of Theoretical Physics: Mathematical methods for physicists (8 hours of lectures)

#### **Development and planning of teaching:** UH Dept. of Physics

- Leader of the bachelor program in Physical Sciences, University of Helsinki 2016 - 2018
- Board member in the Bachelor's Programme in Science, University of Helsinki 2018
- Board member in the Master's program in Theoretical and computational methods 2016 -2018
- Professor responsible for coordinating and developing the physics curriculum 2014-2016
- Renewal of the Thermodynamics course by implementing Peer Instruction combined with ConcepTest 2012.
- Leader of the working group planning and implementing new course structure for thermophysics, statistical physics, hydrodynamics and mechanics of continuous matter, 2009-2010.
- Planning of a structural change of the Fundamental physics courses during spring 2001. The changes took effect from autumn 2001.

**Supervising undergraduate laboratory exercises:**

- Autumn 1997 and spring 2000 UH Dept. of Physics

**Supervising problem classes and marking home exercises:**

- Spring 2000 UH Dept. of Physics: Physics and chemistry of air pollution
- Autumn 1996 UH Dept. of Physics: Phase transitions in aerosol physics
- Autumn 1992 UH Dept. of Theoretical physics: Classical mechanics
- Spring 1992 UH Dept. of Theoretical physics: Mathematical methods for physicist II
- Autumn 1991 UH Dept. of Theoretical physics: Mathematical methods for physicist I
- Autumn 1990 UH Dept. of Physics: Thermodynamics

**Acting as a substitute teacher of mathematics at high/elementary school:**

- Herttoniemen yhteiskoulu: several periods during 1988-1990

## 8 Research grants, awards, honours and major stipendiary support

### 8.1 Research grants

Total sum 7.6 M€

- 2017- 2019 United Arab Emirates Research Program for Rain Enhancement Science partner in a consortium OASIS 'Optimized aerosol seeding strategies for precipitation enhancement' led by Hannele Korhonen from Finnish meteorological institute (200 000 USD out of consortium total 1 500 000 USD)
- 2017-2020 Faculty of Science funding for the project ATMATH (Atmospheric Mathematics), 800 000 €(consortium total 3 200 000 €)
- 2016-2021 European Research Council Advanced Grant DAMOCLES 'Simulating Non-Equilibrium Dynamics of Atmospheric Multicomponent Clusters' (2 400 000 €)
- 2015-2018 Academy of Finland Arctic Research Programme, leader of the consortium 'Ice Clouds and Ice Nucleation in Arctic', (share of funding 194 239 €, consortium total 810 120 €)
- 2011-2016 European Research Council Starting Grant MOCAPAF 'Role of Molecular Clusters in Atmospheric Particle Formation', (1 500 000 €) and University of Helsinki support money (125 000 €)
- 2010 University of Helsinki Chancellor's travel grant (600 €)
- 2010-2013 Academy of Finland research grant in Computational science research programme: Coordinator of the consortium ComQuaCC 'Computational research chain from quantum chemistry to climate change', (share of the funding 466 000 €, consortium total 1 255 000 €)

- 2009-2011 Nessling foundation grant for a PhD student 'Role of sulphuric acid in climate change and air quality', (68 800 €)
- 2009-2012 Nordic Council of Ministers: Coordinator of a Nordforsk Network NICITA 'Nordic Network for Ionic Clusters In The Atmosphere' (107 000 €)
- 2009-2011 Academy of Finland, Researcher mobility grant between Finland and Germany 'Nucleation studies: theory and experiments', (6260 €)
- 2009 University of Helsinki Chancellor's travel grant (600 €)
- 2008 Väisälä foundation grant for 'Women's aerosol train' project together with Iлона Riipinen, (10 0000 €)
- 2006-2009 Emil Aaltonen foundation, project grant 'Molecular modeling of atmospheric clusters', (190 000 €)
- 2004-2009 Academy of Finland, Academy Research Fellow post and funding for research expenses (205 600 €) for an Academy Research Fellow 'Theoretical studies of atmospheric particle formation'
- 2003-2005 Academy of Finland, Targeted research programme on fine particles, research grant 'Non steady state nucleation as a formation mechanism of atmospheric aerosol particles', (200 000 €)
- 2002-2004 University of Helsinki 3 year research allowance 'Theoretical studies of atmospheric particle formation', (100 000 €)
- 2002 The Academy of Finland Czech Republic Exchange grant (participation in the first Czech- Finnish Aerosol Symposium, 610 €)
- 2001-2002 Academy of Finland post doctoral researcher grant 'Molecular simulations of nucleating clusters', (84 600 €)
- 2000 Magnus Ehnrooth foundation (travel grant, 2 000 €)
- University of Helsinki Environmental Research Center
  - 2001-2004 Coordinator of the consortium 'Composition and origin of atmospheric aerosol' (28 500 €)
  - 2005-2007 Coordinator of the consortium URPO 'Urban and rural air pollution' (50 400 €)
- 1998-1999 U. K. Engineering and Physical sciences Research Council, grant for post doctoral scientific work 'A Monte Carlo study of nucleating clusters', (15 months)
- 1998-1999 The Academy of Finland Grant for scientific work abroad 'A Monte Carlo study of nucleating clusters', (36 500 €)
- 1994 The Imatran Voima Foundation Grant for scientific work 'Formation and condensation of sulfuric acid in combustion gases', (5050 €)



## 8.2 Scientific direction beyond direct grants

- EU Network of Excellence ACCENT (European Commission, Framework Programme 6) 2nd representative of University of Helsinki in general assembly 2004-2006
- BIOFINE (Measurement and characterization of the biological fraction of fine particles), TEKES (National Technology Agency of Finland) project, principal representative of Dept. of Physics, University of Helsinki and project board member 2002-2005
- PARticles in the upper Troposphere and lower Stratosphere and their role in climate system European Research Framework 5 project 2001-2004, *de facto* principal representative of University of Helsinki

## 8.3 Awards and honours

- University of Helsinki Maikki Friberg award for work promoting equality 20.5.2015
- Finnish Aerosol Research Foundation Distinguished Scientist Award 21.5.2014
- The NOSA (Nordic Society for Aerosol Research) Aerosologist Award 30.1.2014 For her contribution in the field of aerosol science, in particular new particle formation and for her support of Nordic aerosol education and collaboration
- The Finnish Society of Sciences and Letters Magnus Ehrnrooth Foundation award 11.3.2010 for a significant contribution on her field of science
- Ranked as 34th amongst the 35 applications considered eligible for European Young Investigators Award 2006 (25 Awards granted).
- Runner up 2013 and honourable mention 2002 in the best teacher award given by Resonanssi, the organisation of Physics students at UH.
- The Award of Finnish Association for Aerosol Research for 'Excellent work in theoretical nucleation studies' 23.5.2002

# 9 Other academic and professional activities

## 9.1 Referee of academic degrees

- Examiner (opponent) in the Ph. D. defence of Jonas Elm (University of Copenhagen, Denmark) 15.8.2014
- Examiner in the Ph. D. defense of Mauritz Ryding (University of Gothenburg, Sweden) 28.10.2011
- Examiner of the thesis and examiner (opponent) in the Ph. D. defence of Topi Rönkkö (Tampere University of Technology) 21.11.2008
- Examiner (opponent) in the Ph. D. defence of Martin Enghoff (University of Copenhagen, Denmark) 7.5.2008
- Examiner (opponent) in the Ph. D. defense of Sukina Natarajan (University College London, U.K.) 23.5.2007
- Examiner in the Ph. D. defense of Admir Targino (Stockholm University, Sweden) 16.12.2005

- Examiner of the Ph. D. thesis of Martti Perämäki (University of Helsinki) April 2005
- Examiner of the Ph. D. thesis of Kimmo Teinilä (University of Helsinki) June 2004
- Examiner in the Ph. D. defense of Radovan Krejci (Stockholm University, Sweden) 29.9.2002
- Examiner (opponent) in the licenciate defence of Narges Rastak (Stockholm University, Sweden) 19.12.2014
- Examiner of the licenciate thesis of Tuulia Taskila (Oulu University) March 2004
- Examiner of the M. Sc. Thesis of Tea Luoto (University of Helsinki) August 2006.

## 9.2 Reviewed research project proposals, reports and nominations for the following organizations

- University of Helsinki, 2018
- University on Minnesota, USA, 2018
- Czech Science Foundation, 2017
- Väisälä foundation grants, 2016, 2017, 2018
- University of Helsinki, 3-year research grants, 2016
- Docent application of Dr. Harri Kokkola (University of Eastern Finland), 2010
- Finnish Meteorological Institute, 2009
- University of Gothenburg, Sweden, 2008

## 9.3 International and national scientific societies

- Member of Finnish Academy of Science and Letters (Suomalainen Tiedeakatemia) 11.4.2014-
- Contingent of the Aerosol Research Foundation, Finland, chairwoman 2012-2014
- Member of the Finnish Physical Society, 1992-
- Member of the Finnish Association for Aerosol Research, 1992-
  - treasurer 2001-2004, deputy member of the board 2001-2008, vice-president 2008-2010, president 2011-2014
- Nordic Society for Aerosol Research (NOSA) 2003 -
  - board member 2003-2011, secretary 2006-2011
- Junge Award committee NOSA representative 2004-2011, FAAR representative 2011-
- Member of the Committee on Nucleation and Atmospheric Aerosols 2004-2009, 2013-
- Finnish/Nordic representative in the European Aerosol Assembly (EAA) and International Aerosol Research Assembly (IARA) 2004-2014

## 9.4 Representative in professional panels

- Member of the information technology steering group of Kumpula campus, University of Helsinki, 2018-2021
- MILDRED, the Development Project of the Research Data Infrastructure at University of Helsinki, Guidance group member 2016-2018
- Funet 2020 customer need panel, 2016
- CSC-IT Center for Science (in Finland): member of Scientific customer panel 2013-
- Publication Forum Project (Julkaisufoorumi), Federation of Finnish Learned Societies: member of the physics, space sciences and astronomy panel 2010-2013

## 9.5 Co-organizer of scientific conferences

- Co-chair of the organizing committee of 20th International Conference on Nucleation and Atmospheric Aerosols; Helsinki, Finland 25.-30.6.2017
- Member of scientific program committee, Finnish Physics Days, Helsinki, 22.-24.3. 2017
- Member of the National Advisory Committee, ISSPIC XVIII - International Symposium on Small Particles and Inorganic Clusters, Jyväskylä, Finland, August 14th-19th, 2016.
- Member of the International Advisory Board, Aerosol Technology Meeting AT2015, Tampere, Finland, June 15th-17th, 2015.
- Member of the Topical program committee on Space, atmosphere and Environmental Physics, Nordic Physics Days, Trondheim, Norway, June 9th-12th, 2015.
- Workshop on prospects of X-ray techniques in studying atmospheric clusters and aerosol particles, Vantaa, Finland, 20.11.2012
- NICITA network workshop, Hyytiälä, Finland 23.-25.5.2011, Pühajärve, Estonia 25.-27.4.2012
- CRAICC ice nucleation theory workshop, Helsinki, Finland 24.-26.8.2011
- Chairwoman of the scientific program committee, Nordic and Finnish Physics Days, Helsinki, Finland 29.-31.3.2011
- Nordic Society for Aerosol Research (NOSA) 2006 Conference, Combined with Finnish-Czech Aerosol Symposium and the X Finnish National Aerosol Symposium, Helsinki, 9.-10.11. 2006
- The IX Finnish National Aerosol Symposium Helsinki, 10.-12.3. 2004
- PARTicles in the upper Troposphere and lower Stratosphere and their role in climate system European Research Framework 5 project workshop Hyytiälä 18.- 21.5. 2003
- XXXVII Annual Conference of Physical Society, Helsinki 20.-22. 3. 2003
- Symposium on Atmospheric Aerosols and Trace Gas Exchange Research, Helsinki 31.10. 2002
- The VIII Finnish National Aerosol Symposium Helsinki, 20.-21.8. 2001

## 9.6 Scientific Journals

Representative of the Finnish Association for Aerosol Research in the editorial board of Boreal Environmental Research 2006-2012  
chairwoman of the editorial board 2009-2010

Guest Editor, Boreal Environment Research 2007

Referee in the following journals:

- Aerosol Science & Technology (2011)
- Atmospheric Chemistry and Physics (2010, 2015)
- Atmospheric Environment (2006)
- Atmospheric Research (2010)
- Chemical Engineering and Processing (2006)
- Chemical Physics Letters (2x2004)
- Geophysical Research Letters (2003, 2009)
- Journal of Aerosol Science (1998, 2003, 2009, 2011, 2012)
- Journal of the American Chemical Society (2012)
- Journal of Chemical Physics (2006, 2x2007, 2x2008, 2010, 3x2011, 2013, 2014, 2017, 2x2018)
- Journal of Geophysical Research D - Atmospheres (2005, 2006, 2014)
- Journal of Mechanical Engineering Science (2003)
- Mass Spectrometry Reviews (2017)
- Nature (2012)
- Physics of fluids (2008)
- Tellus B (2018)

## 9.7 Invited presentations

### Conferences, workshops etc

- Monica Passananti, Evgeni Zapadinsky, Juha Kangasluoma, Nanna Myllys, Michel Attoui and Hanna Vehkamäki: 'Characterising cluster fragmentation in an Atmospheric Pressure interface Time of Flight (APi-ToF) mass spectrometer' Atmospheric Chemical Mechanisms Conference, UC Davis Conference Center, USA, 5.12.2018.
- Monica Passananti, Evgeni Zapadinsky, Juha Kangasluoma, Nanna Myllys, Michel Attoui and Hanna Vehkamäki: 'Model and experiments to characterise cluster fragmentation inside an Atmospheric Pressure interface Time Of Flight (APi-TOF) mass spectrometer' Towards a Molecular Understanding of Atmospheric Aerosols-677. WE-Heraeus-Seminar, Bad Honnef, Germany 27.-31.8 2018

- Hanna Vehkamäki: 'Understanding nanoparticle formation in the atmosphere' Computational Chemistry Days 2018, University of Helsinki, Finland, 28-29.5. 2018
- Monica Passananti, Evgeni Zapadinsky, Juha Kangasluoma, Nanna Myllys, Michel Attoui and Hanna Vehkamäki: 'Understanding Particles Forming from Thin Air' Gordon Research Seminar on Molecular and Ionic Clusters - Microscopic Probes of Intermolecular Forces and Cooperative Effects Lucca (Barga), Italy, 25.2 - 2.3. 2018
- Hanna Vehkamäki, Jonas Elm, Roope Halonen, Theo Kurtén, Nanna Myllys, Olli Pakarinen, Tuomo Ponkkonen and Evgeni Zapadinsky: 'Molecular clustering in the atmosphere' COST MOLIM conference on Energy-Resolved Methods in Helsinki, August 22-24.8.2016
- Hanna Vehkamäki: 'Uncovering the secrets of atmospheric nanoparticles' The 11th Informal Conference on Atmospheric and Molecular Science, Helsingør, Denmark, 14.8.2014
- Hanna Vehkamäki: 'Uncovering the formation mechanism of atmospheric nanoparticles' American Physical Society March meeting, Boston, USA, 27.2.2012
- Hanna Vehkamäki: 'Investigating Atmospheric Particle Formation with Molecular Modelling Methods' International Aerosol Modeling Algorithms (IAMA) Conference UC Davis Conference Center, USA, 30.11.2011
- Hanna Vehkamäki: 'Uncovering the secrets of atmospheric nanoparticles' 6th Nordic Women in Physics Workshop, Copenhagen, Denmark 30.9.2011
- Hanna Vehkamäki, plenary lecture: 'Molecular modeling of atmospheric clusters' International Aerosol Conference, Helsinki, Finland, 31.8.2010
- Hanna Vehkamäki: 'The role of sulphuric acid in atmospheric particle formation' presentation 1A.3 at 28th annual conference of American Association for Aerosol Research, Minneapolis, USA, 26.-30.10. 2009
- Hanna Vehkamäki: 'Sulphuric acid containing clusters in the atmosphere' Workshop on Nucleation of inorganic atmospheric clusters and particles. Gothenburg University, Sweden 13.-15.8.2008.
- Hanna Vehkamäki, plenary lecture: 'Molecular simulations and atmospheric particle formation' at the IX Finnish National Aerosol Symposium, 10.-12.3.2004.
- Hanna Vehkamäki, plenary lecture: 'Molecular Modeling of Atmospheric Particle Formation' at 16th International Conference for Nucleation and Atmospheric Aerosols, Kyoto, 26.-30.7.2004

### Invited seminar presentations

- Hanna Vehkamäki: 'Particles Forming out of Thin Air' University of Bristol, UK, 12.4.2018
- Hanna Vehkamäki: 'Particles out of thin air' Thomas Young Centre, University College London, UK, 13.10.2017
- Hanna Vehkamäki: 'Molecular clustering relevant to atmosphere: computational studies & understanding experiments' University of Oulu, Finland, 8.5.2017
- Hanna Vehkamäki: 'Condensation and climate' Nordic Summer School on Cluster and Nanoparticles in Sven Loven marine research center, Kristineberg, Sweden 23.-27.2014

- Hanna Vehkamäki: 'Uncovering the secrets of atmospheric nanoparticles' Laboratoire de météorologie dynamique (LMD), Université Pierre et Marie Curie, Paris, France, 24.10.2013
- Hanna Vehkamäki: 'Uncovering the secrets of atmospheric nanoparticles' Laboratoire atmosphères, milieux, observations spatiales (LATMOS), Université Versailles Saint Quentin, Paris, France, 22.10.2013
- Hanna Vehkamäki: 'Molecular modelling of atmospheric nanocluster formation', Forschungszentrum Jülich, Germany, 15.11. 2012
- Hanna Vehkamäki: 'Investigating Atmospheric Particle Formation with the Atmospheric Cluster Dynamics Code', University of Minnesota, USA, 1.3.2012
- Hanna Vehkamäki: 'Formation mechanisms of atmospheric particles' Aarhus University, Denmark 1.4.2008
- Hanna Vehkamäki: 'Molecular simulations of Atmospheric Particle Formation' Copenhagen University, Denmark, 8.3.2007
- Hanna Vehkamäki: 'Molecular simulations of Atmospheric Particle Formation' Gothenburg University, Sweden, 5.2.2007

## 9.8 In-service training

- Study program leadership training (3x7hour contact days) May-Oct 2018
- Basic studies in University pedagogics 25 ECTS consisting of University pedagogics I (=1&2), 10 ECTS (passed with distinction) 2011, University pedagogics 3, 5 ECTS 2018, University pedagogics 4, 5 ECTS (grade 5/5) 2016, University pedagogics 5, 5 ECTS (grade 5/5) 2017
- Personal leadership coaching, 10 hours, BoMentis Coaching House, 11.12.2012-3.6.2013
- Team coaching with 5 other professors for Division of Atmospheric Sciences, 19 hours BoMentis Coaching House 5.3-19.6.2013
- Media relations training for researchers, Infor Oy, 16.4.2012
- Effective meetings, University of Helsinki, 23.4.2010
- Introduction to university pedagogics, University of Helsinki, 25.3.2010
- Full cost model- budget, follow-ups and reporting, University of Helsinki, 19.01.2010
- Leadership Skills, 3.5 days workshop and 18 hours coaching group, Arinna Oy, 2009-2010
- Advanced parallel programming, CSC, The Finnish IT center for science, 23.-25.2.2009
- Parallel programming with MPI, CSC, The Finnish IT center for science, 13.-14.2.2008
- Mentee in the University of Helsinki mentoring program 2006-2007
- Academic writing course, University of Helsinki language center 2.2.-23.3.2005
- Leadership training course, WSOYPro, 1.2.2007
- Scientific presentation course, University of Helsinki, Department of Speech Sciences, 19.5.-1.6.2006

## 10 Positions of trust

### University of Helsinki, Dept. of Physics:

- Deputy member of the department board 2001-2003

### University of Helsinki, Faculty of Science:

- Member of the faculty council 1992-1995 (student), 2004-2006 (other staff), 2014-2017 (professor, deputy member), 2018- (professor)
- Member of Kumpula campus consultative committee 2004-2006

### University of Helsinki

- Member of the electoral college 2004-2006

## 11 Equality and work well being activities

- Design of material for implicit bias training for student of the bachelor program in physical sciences, University of Helsinki, December 2018.
- 'Sexual harassment in universities' presentation & group activity package: Institute of Institute for Atmospheric and Earth System Research recreation day 23.3.2018 (coordinator), National occupational health days of Finnish universities, 23.8.2018 (jointly with Päivi Salmesvuori), ATM Finnish Academy Center of Excellence seminar (coordinator) Kuopio 28.11.2018
- Poster 'Equality work In Helsinki Atmospheric and Earth System Sciences' at STEMM Equality Congress, Amsterdam, 11.-12.10.2018
- Presentation 'Women in Physics in Finland status & activity report' at Nordic Network for Diversity in Physics - NORNDiP planning meeting, Stockholm 16.4.2018
- Interview on Sexual harassment in academia by Helmi Partanen, Groteski-magazine, March 2018.
- Co-organiser of a survey on 'Sexual harassment in universities' by Helsinki Association of Women Researchers 2018
- Coordinator of University of Helsinki Faculty of Science equality and work well being survey, equality seminar and equality festival 2017
- Chairwoman of the equality and work well being group at Division of Atmospheric Sciences, Department of Physics, University of Helsinki 2011-, coordinator of division equality and work well being surveys 2012 and 2015
- Founding member (2006), secretary (2008) and chairwoman (2009-2010) of the Finnish Physical Society working group 'Finnish Women in Physics'
- Helsinki Association of Women Researchers, board member 2011-, vice chairwoman 2012-2013, chairwoman 2014-2015
- Nordic network for Women in Physics (NorWiP) board member 2008-2010.
- Co-organiser of Nordic Network for Women in Physics (NorWiP) 5th Workshop, Helsinki 26.-28.8.2009

- Leader of the working group of Department of Physics, University of Helsinki and Finnish Physical Society that produced a brochure 'What you should know about women and Physics- Gender equality at the Department of Physics', 2008.
- Presentation 'Experience of women in university physics in Finland - obstacles and best practices' in the LERU workshop Equality in STEMM-Academia? in Lund Sweden 5.10.2016
- Presentation 'Is gender equality a reality for STEM women in the University of Helsinki?' At University College London (U.K.) women networking session. 7.6.2016
- Presentation 'Experience of women in University Physics in Finland – obstacles and best practices' in a seminar 'Glass Ceiling or Career Ladder? – Young People in Academia' organised by the Embassy of Finland and the Office of the Gender Equality and Equal Treatment Commissioner in Estonia in Tallinn, Estonia, 29.4.2016 and in Institute of Physics (UK) Finland Chapter seminar 'Gender in Physics Education', Helsinki, Finland 20.5.2016.
- Interview for the article 'Competitiveness, growth and employment in Europe: the benefits of embracing equality in STEM' by Marta Checa, published 12.1.2018 in Equal Times (a trilingual news and opinion website focusing on labour, human rights, culture, development, the environment, politics and the economy from a social justice perspective)
- Radio, TV and web interviews in the CSC -IT Center for Science in Finland campaign Woman + Computational Science = Perfect equation 8.3.2016
- Interview in Helsingin sanomat newspaper (journalist Mikko Puttonen) on why it has been 50 years since a woman was awarded the Nobel prize in physics 2.10.2017.
- Interview 'Kuin omassa laumassa' ('Like in your own herd') by Elina Tanhua 8.8.2015 in the newspaper Etelä-Suomen Sanomat
- Interview in the Kotiliesi-magazine 10/2013, pp 24-28 ('Outo lintu miesten maailmassa' ('A strange bird in the men's world'), interview Essi Salonen, photo Marjo Tynkkynen.

## 12 Public outreach activities

- Founding member of Tiederoihu, a science popularization circle in Roihuvuori, a suburb of Helsinki, 2018.
- Interviewed by the YLE A-studio on who are the most significant living thinkers in Finland ('Kuka on merkittävä ajattelija?'), broadcasted 4.9.2018
- Studia generalia type Pecha Kucha presentation 'Molekyylien kosiomenot' ('Mating rituals of molecules') at Tutkijoiden yö (Researcher's night) event Tiede-Tutkimus-Tarina (Science-Research-Story) organized by Suomen Fyysikkoseura (Finnish Physical Society) in Helsinki 29.9.2017
- Studia generalia presentation 'Hiukkasia kaasusta - ilmakehän pienihiukkaset ja niiden muodostumisen tutkimus' ('Particles out of gas- atmospheric particles and their formation studies') at Etelä -Tapiola highschool, Espoo 12.4.2017
- 'Vieraskynä' column in the Helsingin sanomat newspaper 'Laskennallinen tiede synnyttää läpimurtoja' ('Computational science creates breakthroughs ') with Ilpo Vattulainen 11.7.2016



- Studia generalia presentation at Finnish Physics Days, Oulu, 29.3.2016 'Ilmastonmuutoksen mustat ja valkoiset lampaat - ilmakehän pienhiukkaset' ('Black and white sheep of climate change -atmospheric aerosol particles' )
- Interview 'Arktisten pilvien muodostus on ilmastomallien heikoin lenkki' ('Formation of Arctic clouds in the weakest link in climate models') interview by Harriet Öster published at the Academy of Finland web pages 28.10.2015.
- Reply to reader's letter in Helsingin sanomat 'Termofysiikan lait eivät horju' ('Laws of thermodynamics do not waver') with Mai Allo 31.10.2014
- Contribution to YLE news on the shock wave related to supersonic fighter planes 22.9.2014 (Article title 'Hävittäjä saattaa livahtaa yllääninopeuteen vahingossa – "Havaitsee vain katsomalla mittaria' by Jaakko Mannermaa)
- Article to Ilmasuojelu, Magazine of the Air Pollution Prevention Society, 'Ilmakehän pienimpien hiukkasten syntyjä syviä' ('Origins of the smallest particles in the air'), 1/2014
- Studia generalia - type presentation 'Ilmakehän pienhiukkasista' ('On atmospheric fine particles') at the April 2014 meeting of Eteläpohjalaiset Seniorit ry 7.4.2014.
- Article to LUMA-news (LUMA is an umbrella organization for the collaboration of schools, universities and business sector, with the aim to promote and support life-long learning, studying and teaching of STEM subjects on all levels of education) 'Nykyfysiikan kynästä: Myyttejä ja päivä professorin elämästä' ('From a pen of a contemporary physicist: Myths and a day in professors life'), 2.4.2014
- Presentation on the role of atmospheric particles in climate change ('Ilmastonmuutoksen mustat ja valkoiset lampaat - pienhiukkaset ilmakehässä'), Tampere Science Week organised by the Academy of Finland 9.10.2012
- The Think Corner (Tiedekulma) presentation to general public: 'Rikkihapon ihmeelliset seikkaliut maailmanhistoriassa' ('The adventures of sulphuric acid in the world history') 18.6.2012
- Coordinating an exhibiton at Söderskär lighthouse, Finland, on Gustaf Dalén, Nobel Laureate in Physics 1912, and his lighthouse related inventions, summer 2012, related articles in the Arkhimedes magazine 2/2012 and Söderskär - newspaper.
- Review of the Opera 'Doctor Atomic' by Claus Montonen, Tommi Tenkanen and Hanna Vehkamäki. Arkhimedes magazine 1/2012.
- Contribution to the 'Tieteestä kysymys' ('Question about science') column in the Finnish newspaper Helsingin Sanomat 29.11.2011. (If you drilled a hole to the centre of the Earth, what would be the air pressure at the bottom of that hole?)
- Presentation on the role of atmospheric particles in climate change to the Finnish members of European Parliament ('Ilmastonmuutoksen mustat ja valkoiset lampaat - pienhiukkaset ilmakehässä'), Brussels, Belgium 22.11. 2011
- Studia generalia lecture 'From smog to climate change - fine particles in the atmosphere', ('Savusumusta ilmastonmuutokseen - pienhiukkaset ilmakehässä') University of Helsinki, 27.10.2011
- Presentation 'How can cloud form out of thin air' ('Miten ilmasta voi syntyä pilviä?') during the children's science day, University of Helsinki, 7.5.2011

- Interview in newspaper Hufvudstadsbladet 5.1.2011 ('Luftens gåta kan vara löst', ('The puzzle of air may be solved') interview Peter Buchert, photo Karl Vilhjalms-son)
- Hanna Vehkamäki ja Minna Palmroth: 'Minna ja Hanna Erkkiä kosimassa' ('Minna and Hanna wooing ERC') Arkhimedes 6/2010
- Hanna Vehkamäki. Kehdosta tieteen huipulle: Douglas Worsnop (Life story of Douglas Worsnop). Arkhimedes 4/2010
- Hanna Vehkamäki. Millainen on ensimmäisen Aalto-professorin Risto Niemisen elämäntarina? (Life story of Risto Nieminen) Arkhimedes 2/2010
- Hanna Vehkamäki. Kolumni: Vanha noita. (Column: An old witch) Arkhimedes 1/2010
- Editor in chief, Department of Physics (University of Helsinki) Annual Report 2008.
- Contribution to the 'Ask whatever you want, experts answer' column in the Finnish popular Science magazine Tiede 9/2008. (Why do tiny bubbles form in a glass of water left on a bedside table overnight)
- Member of the editorial board of Finnish magazine on Physics and Mathematics 'Arkhimedes' 2008-2013
- Member of the contingent of Finnish magazine on Physics and Mathematics 'Arkhimedes' 2015-2018