
Personal Details

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Current Position

Air quality researcher, Swedish Meteorological and Hydrological Institute (SMHI)

Research

Research interests

- Air quality modeling
- Atmospheric particle formation and its effects
- Aerosol physics
- Nanoparticle dynamics and thermodynamics

Tools

- Molecular cluster and aerosol dynamics simulations
- Box and trajectory modeling
- Regional chemical transport modeling

Education

2015	Doctor of Philosophy, University of Helsinki Thesis: *Cluster population simulations as a tool to probe particle formation mechanisms*
2011	Master of Science, University of Helsinki
2010	Bachelor of Science, University of Helsinki

- Major: Physics
- Minors: Theoretical physics, astronomy

Employment

Swedish Meteorological and Hydrological Institute (SMHI), Research Department

2019-	Researcher, Air Quality Research Unit

Stockholm University, Department of Environmental Science and Analytical Chemistry (ACES) & Bolin Centre for Climate Research

2017-2019	Research scientist, Atmospheric Science Unit
2015-2017	Post doctoral fellow, Atmospheric Science Unit

University of Helsinki, Department of Physics, Division of Atmospheric Sciences

2011-2015	PhD student, Computational Aerosol Physics Group
2011	Research assistant, Computational Aerosol Physics Group

Funded Research Projects

2020-2022	*New-generation tools for robust quantification of atmospheric nanoparticle sources*, Swedish Research Council Formas, 3 MSEK (ca. 280 k€), PI
2020-2022	*Explicit framework from molecular clusters to nanoparticles for resolving atmospheric aerosol formation dynamics*, Swedish Research Council (Vetenskapsrådet), 2.7 MSEK (ca. 251 k€), PI
2018	*Robust modeling tools for exhaust gas cleaning through gas-to-particle conversion*, the ÅForsk Foundation, 488 kSEK (ca. 47 k€), PI
2012-	Smaller travel grants of a total of ca. 3 k€

Intellectual Property

Atmospheric Cluster Dynamics Code (ACDC)

- An open-source automatized model to simulate nanoparticle formation from vapors
- Available at `https://github.com/tolenius/ACDC/`

Publications

Peer-reviewed papers in international journals

- Total 34 research papers; 9 first-author, 8 second-author, and 1 last-author paper
- h-index 20, total >2000 citations (Google Scholar, Apr 2021)

Book chapters

- 1 first-author book chapter (In: *Physical Chemistry of Gas–Liquid Interfaces*, Elsevier, 2018)

For full publication list, see the separate document and e.g. Google Scholar:
`https://scholar.google.com/citations?user=hjh0SJwAAAAJ&hl=en&oi=ao`

Presentations

Conference presentations and seminars

- >20 presentations in international conferences and workshops (at e.g. European Aerosol Conference (EAC), International Aerosol Conference (IAC), American Association for Aerosol Research (AAAR) Annual Conference, International Conference on Nucleation and Atmospheric Aerosols (ICNAA), Faraday Discussion, Nordic Society for Aerosol Research (NOSA) Aerosol Symposium)
- Several seminars (at e.g. Stockholm University, KTH Royal Institute of Technology, University of Oulu)

2019	Invited talk at European Meteorological Society (EMS) annual meeting
2017	Invited talk at International Aerosol Modeling Algorithms (IAMA) conference

Service

Reviewer for journals

- ACS Omega (2021)
- Atmospheric Chemistry and Physics (2016, 2017, 2018, 2020)
- Chemistry of Materials (2020)
- Chemosphere (2019)
- Environmental Science & Technology (2013, 2018, 2019)
- Geoscientific Model Development (2021)
- Industrial & Engineering Chemistry Research (2019)
- Journal of Aerosol Science (2014)
- Journal of Geophysical Research: Atmospheres (2018)
- Journal of Physical Chemistry A (2014, 2017, 2019, 2020)
- Nature Communications (2018)
- Physical Chemistry Chemical Physics (2015)

Contribution to conference organization

- Technical Program Committee member for International Aerosol Modeling Algorithms (IAMA) conference (2021)

Teaching

Teaching and developing undergraduate and PhD-level courses

2017-2019	Modeling tools for environmental scientific studies (Modelleringsverktyg för miljövetenskapliga undersökningar), Stockholm University, Department of Environmental Science and Analytical Chemistry, 7.5 ECTS, undergraduate course, 49 hours
2014	Formation and growth of atmospheric aerosols, University of Helsinki, Department of Physics, 5 ECTS, PhD course, 25 hours
2011-2013	Thermal physics (Termofysiikka), University of Helsinki, Department of Physics, 8 ECTS, undergraduate course, 100 hours

Supervision

Advisor for

- 3 bachelor theses (Paula Hietala 2016, Roope Halonen 2015, Matti Ala-Lahti 2014)
- 1 post doctoral researcher (Dr. Jenni Kontkanen 2017)