

## Involvement/Participation in On-going & Completed Projects

1. **(2025-2028) – REOPEN:** Next Generation Workforce – Empowering Young People for Improved Employment (*Interreg programme, PI – Sintija Lase*) (*Roles: participant; online trainings for students; co-supervising students*)
2. **(2025-2027) – Enviro-PEEX on ECMWF(Next):** Research and development for seamless modelling of meteorology – atmospheric composition on multi-scales for the Pan-Eurasian EXperiment (PEEX) domain for weather, air quality and climate applications (*HPC project, PI – Alexander Mahura*) [https://www.atm.helsinki.fi/peex/index.php/enviro-peex\\_next](https://www.atm.helsinki.fi/peex/index.php/enviro-peex_next) (*Roles: PI, participant/ HPC user; seamless Enviro-HIRLAM modelling on multi-scales and -processes; training and co-supervising students*)
3. **(2024-2026) – PEEX-MP at CSC:** PEEX Modelling Platform research and development through CSC HPC research projects (*HPC project, PI – Alexander Mahura*) <https://www.atm.helsinki.fi/peex/index.php/portfolio-items/mp-at-csc> (*Roles: PI, participant/ HPC user; seamless Enviro-HIRLAM modelling on multi-scales and -processes; training and co-supervising students*)
4. **(2023-2026) – Erasmus+ CLUVEX:** Climate University for Virtual Exchanges (*Erasmus+, PI – Hanna K. Lappalainen*) <https://www.atm.helsinki.fi/cluvex> (*Roles: WP co-Leader, participant, moderator*)
5. **(2022-2024) – EU Digital Europe:** Destination Earth, Climate Adaptation Digital Twin (EU, PI – ECMWF) <https://destine.ecmwf.int> (*Roles: participant; ObsAll software package development*)
6. **(2022-2026) – Horizon Europe FOCl:** Non-CO2 Forcers and their Climate, Weather, Health and Air Quality Impacts (*Horizon Europe, PIs – Tomáš Halenka & Ranjeet Sokhi*) <https://www.project-foci.eu> (*Roles: participant; seamless modelling with Enviro-HIRLAM*)
7. **(2022-2023) – PEEX-FRESReN:** Pan-Eurasian EXperiment – Finnish-Russian Earth System Research Network (*TFK Finland; PI – Hanna K. Lappalainen*) <https://www.atm.helsinki.fi/peex/index.php/fresren> (*Roles: participant; teaching and training on online integrated modelling; co-supervising students*)
8. **(2021-2025) – H2020 RI-URBANS:** Research Infrastructures Services Reinforcing Air Quality Monitoring Capacities in European Urban& Industrial AreaS (*Horizon-2020; PIs – Xavier Querol & Tuukka Petaja*) <https://riurbans.eu> (*Roles: participant; PCT member; task with urban scale Enviro-HIRLAM modelling for megacity*)
9. **(2021-2025) – H2020 CRiceS:** Climate relevant interactions and feedbacks: the key role of sea ice and snow in the polar and global climate system (*Horizon-2020; PIs – Risto Makkonen & Jennie Thomas*) <https://www.crices-h2020.eu> (*Roles: participant; regional scale Enviro-HIRLAM modelling for Arctic seas domain*)
10. **(2021-2025) – ACCC:** Atmosphere and Climate Competence Center, Finnish National Flagship (*Academy of Finland; PI – Markku Kulmala*) <https://www.acccflagship.fi> (*Roles: participant*)
11. **(2021-2023) – MEGAPOLIS:** Russian MegaGrant “Megapolis – Heat and Pollution Island” (*Government of the Russian Federation; PI – Markku Kulmala, co-PI – Nikolai Kasimov*) <https://www.atm.helsinki.fi/peex/index.php/megahapi> (*Roles: participant; task with urban scale Enviro-HIRLAM modelling for Moscow megacity*)
12. **(2021-2023) – Enviro-PEEX(Plus) on ECMWF:** Research and development for integrated meteorology – atmospheric composition multi-scales and – processes modelling for the Pan-Eurasian EXperiment (PEEX) domain for weather, air quality and climate applications (*HPC Project; PI – Alexander Mahura*) <https://www.ecmwf.int/en/research/special-projects/spfimahu-2021> (*Roles: PI, participant/ HPC user*)
13. **(2020-2026) – ClimEd:** Multilevel Local, Nation- and Regionwide Education and Training in Climate Services, Climate Change Adaptation and Mitigation (*Erasmus+ Capacity Building in the Field of Higher Education Action; PIs – Sergej Zilitinkevich, Sergiy Stepanenko*) <https://www.atm.helsinki.fi/peex/index.php/climed> (*Roles: WP on Training leader; task leader; participant*)
14. **(2020-2022) – PEEX-MP-Europa3:** PEEX Modelling Platform research and development through HPC-Europa3 Transnational Access Programme (*HPC Project; PIs – Alexander Mahura, Iryna Bashmakova*) <https://www.atm.helsinki.fi/peex/index.php/peex-mp-europa3> (*Roles: PI, participant/ HPC user*)
15. **(2018-2022) – MODEST:** Mechanisms, pathways and patchiness of the Arctic ecosystem responses and adaptation to changing climate (*Erasmus+ Capacity Building in the Field of Higher Education Program; PIs – Inga Skendere & Irina Obukhova*) <https://www.atm.helsinki.fi/peex/index.php/modest> (*Roles: Steering Committee Member; team contact person; WP2 on PhD courses leader; participant*)
16. **(2019-2020) – PEEX-AC:** Pan-Eurasian EXperiment – Academic Challenge (*Finnish National Agency for Education; FIRST+ 2019-2020, Finnish-Russian Student and Teacher Mobility Programme; PI - Tuukka Petäjä*) <https://www.atm.helsinki.fi/peex/index.php/academic-challenge> (*Roles: teaching and training on online integrated modelling; co-supervising students; participant*)
17. **(2018-2020) – ClimEco:** Mechanisms, pathways and patchiness of the Arctic ecosystem responses and adaptation to changing climate (*Academy of Finland; PIs - Jaana Bäck & Sergej Zilitinkevich*) <https://www.atm.helsinki.fi/peex/index.php/climeco> (*Roles: WP “How ecosystems affect climate in the Arctic” co-leader; task leader; participant*)

- 18.(2018-2020) – **Enviro-PEEX on ECMWF**: Pan-Eurasian EXperiment (PEEX) Modelling Platform research and development for online coupled integrated meteorology-chemistry-aerosols feedbacks and interactions in weather, climate and atmospheric composition multi-scale modelling (*HPC Project; PI – Alexander Mahura*) <https://www.ecmwf.int/en/research/special-projects/spfimahu-2018> (*Roles: PI, participant/ HPC user*)
- 19.(2018) – **TRAKT-2018**: TRANSferable Knowledge and Technologies for high-resolution environmental impact assessment and management (*Programme for Environment and Climate Co-operation; Nordic Council of Ministers; PI – Igor Esau*); <https://www.atm.helsinki.fi/peex/index.php/trakt-2018> (*Roles: task leader, participant*)
- 20.(2017-2020) – **H2020 iCUPE**: Integrative and Comprehensive Understanding on Polar Environments (*Horizon-2020; ERA-PLANET (European network for observing our changing planet) Strand 4; PI – Tuukka Petäjä*); <https://www.atm.helsinki.fi/icupe> (*Roles: task leader; participant*)
- 21.(2016-2021) – **H2020 INTAROS**: Integrated Arctic. Observing System (*Horizon-2020 Research and Innovation Action; PI - Stein Sandven*); <http://www.intaros.eu> (*Role: participant*)
- 22.(2016-2017) – **PEEX-CRUCIAL**: Critical steps in understanding land surface – atmosphere interactions: from improved knowledge to socioeconomic solutions (*Nordic Research and Collaboration Project, NordForsk; PIs – Markku Kulmala, Hanna Lappalainen*) (*Roles: team leader, participant*)
- 23.(2016-2020) – **HIRLAM-C**: High Resolution Limited Area Model research and development (in cooperation with the ALADIN consortium and Meteo-France); <http://hirlam.org> (*Role: participant*)
- 24.(2015-2018) – **H2020 EU ESCAPE**: Energy-efficient Scalable Algorithms for Weather Prediction at Exascale (*Horizon-2020 Research and Innovation Action; PI - Peter Bauer*); <http://www.hpc-escape.eu> (*Role: participant*)
- 25.(2015-2017) – **EnviroAerosols on ECMWF**: Enviro-HIRLAM/HARMONIE model research and development for online integrated meteorology-chemistry/aerosols feedbacks and interactions in weather and atmospheric composition forecasting (*HPC Project; PI – Bent Sass*) (*Roles: co-PI, participant/ HPC user*)
- 26.(2015-2016) – **DMI-HARMONIE**: DMI – Hirlam Aladin Research on Meso-scale Operational NWP in Europe (*Research and development project; Role: participant*)
- 27.(2014-2017) – **FP7 MarcoPolo**: Monitoring and Assessment of Regional air quality in China using space Observations, Project Of Long-term sino-european co-Operation (*EU FP7 Collaborative Project; PI – Ronald van der A*); <http://www.marcopolo-panda.eu> (*Roles: team leader, WP5 “Air Quality Modelling and Forecasting” leader, task leader, participant*)
- 28.(2014-2015) – **CRAICC-PEEX**: CRyosphere-Atmosphere Interactions in a Changing Arctic Climate and Pan Eurasian Experiment (*Cooperation within Top-Level Research Initiative, NordForsk; PIs – Timo Vesala, Sergey Zilitinkevich*); <http://www.atm.helsinki.fi/peex> (*Roles: team leader, WP “PEEX Modelling Platform” co-leader, participant*)
- 29.(2014-2016) – **CarboNord**: Impact of black carbon on air quality and climate in Northern Europe and Arctic (*Nordic Research Project, NordForsk; PI – Mikhail Sofiev*) (*Roles: team leader, participant*)
- 30.(2012-2014) – **Enviro-Chemistry on ECMWF**: Enviro-HIRLAM / HARMONIE - Development and Test of an NWP Model System Accounting for Aerosol-Meteorology Interactions (*HPC Project; PI – Alexander Baklanov*) (*Roles: participant/HPC user*)
- 31.(2011-2015) – **COST Action ES1004: EuMetChem** - European framework for online integrated air quality and meteorology modelling (*PI – Alexander Baklanov*); <http://eumetchem.info> (*Roles: Danish Management Committee Member, participant*)
- 32.(2011-2015) – **HIRLAM-B**: High Resolution Limited Area Model research and development (in cooperation with the ALADIN consortium and Meteo-France); <http://hirlam.org> (*Roles: participant*)
- 33.(2010-2014) – **FP7 TRANSPHORM**: Transport related Air Pollution and Health impacts - Integrated Methodologies for Assessing Particulate Matter (*EU FP7 Integrated Project; PI – Ranjeet Sokhi*); <http://www.transphorm.eu> (*Roles: participant*)
- 34.(2010-2012) – **QualiMET**: Development of qualification framework in meteorology (*EC TEMPUS Project; PI – Sergey Zilitinkevich*); <http://www.qualimet.net> (*Roles: involved, Enviro-HIRLAM training*)
- 35.(2010-2012) – **MUSCATEN**: Towards Multi-Scale Modelling of the Atmospheric Environment (*NordForsk, PI - Rein Room*); <http://muscaten.ut.ee> (*Roles: participant + Enviro-HIRLAM training*)
- 36.(2009-2011) – **FP7 MACC**: Monitoring Atmospheric Composition and Climate (*Large-scale integrating project; PI - Adrian Simmons*); <http://www.gmes-atmosphere.eu> (*Roles: participant*)
- 37.(2008-2011) – **COST Action ES0603: EUPOL** - Assessment of production, release, distribution and health impact of allergenic pollen in Europe (*PIs - Mikhail Sofiev, Karl-Christian Bergmann*); <http://www.unifi.it/COSTEupol> (*Roles: participant*)
- 38.(2008-2011) – **fsRSF**: Fine-Scale Road Stretches Forecasting (*Research Project in cooperation with DRD; PIs – Torben S. Pedersen, Bent H. Sass*) (*Roles: participant*)
- 39.(2008-2011) – **FP7 MEGAPOLI**: Megacities: Emissions, urban, regional and Global Atmospheric POLLution and climate effects, and Integrated tools for assessment and mitigation (*EU FP7 Collaborative Project; PIs – Alexander Baklanov, Mark Lawrence, Spyros Pandis*); <http://megapoli.info> (*Roles: project manager, participant*)

- 40.(2008-2010) – Development of methodical bases and mobile equipment for monitoring of Xe and Kr radionuclides in the North-West region of Russia (*ISTC-2133 Research Project; PI – Yuri Dubasov*) (*Roles: involved*)
- 41.(2008-2009) - Atmospheric Trajectory and Chemical Transport Modelling for Elevated Ozone Events in Denmark (*DMI Pilot Study, PIs – Alexander Mahura, Allan Gross*)
- 42.(2008-2010) - Modelling of Anthropogenic Risks and Impacts for Environment and Climate of the North (*Research Project/Theme; PIs – Alexander Baklanov, Alexander Mahura*)
- 43.(2007-2012) – **CEEH**: Danish Centre for Energy, Environment and Health (*Research Project; PIs – Alexander Baklanov, Eigil Kaas*); <http://ceeh.dk> (*Roles: involved*)
- 44.(2007-2011) – **COST Action ES0602: ENCWF** - Towards a European Network on Chemical Weather Forecasting and Information Systems (*PIs – Jaakko Kukkonen, Konstantinos Karatzas*); <http://www.chemicalweather.eu> (*Roles: involved*)
- 45.(2007-2010) – **Combat-Meteo**: Development of competency-based two-level curricula in Meteorology (*TEMPUS TACIS Joint EU Project; PI – Sergey Zilitinkevich*); <http://www.combat-meteo.net> (*Roles: involved, Enviro-HIRLAM training*)
- 46.(2006-2008) – **RSF**: Road Segment/Stretch Forecasts (*Research Project in cooperation with DRD, PIs – Torben S. Pedersen, Bent H. Sass*) (*Roles: participant*)
- 47.(2005-2010) – **HIRLAM-A**: High Resolution Limited Area Model research and development; <http://hirlam.org> (*Roles: participant*)
- 48.(2005-2008) – **FP6 Enviro-RISKS**: Man-induced Environmental Risks: Monitoring, Management and Remediation of Man-made Changes in Siberia (*EU FP6 INCO, PIs – Alexander Baklanov, Eugenie Gordov*); <http://project.risks.scert.ru> (*Roles: participant*)
- 49.(2005-2009) – **NetFAM**: Nordic Network on Fine-scale Atmospheric Modelling (*NordForsk, PI - Savijärvi Hannu*); <http://netfam.fmi.fi> (*Roles: participant + Enviro-HIRLAM training*)
- 50.(2005) – Vej-Strækings-Vejr: Road-Stretch-Weather (*DMI Pilot Study; PIs – Alexander Mahura, Claus Petersen*)
- 51.(2005-2007) – Modelling of Atmospheric Transport and Deposition of Pollutants and Evaluation of Consequences for Arctic (*INEP KSC RAS Research Project/Theme, PIs – Alexander Baklanov, Alexander Mahura*)
- 52.(2005-2006) – **NKS-B/NordRisk**: Nuclear risk from atmospheric dispersion in Northern Europe (*NKS Research Project; PI – Bent Lauritzen*) (*Roles: participant*)
- 53.(2004-2009) – **COST Action 732**: Enhancing Mesoscale Meteorological Modelling Capabilities for Air Pollution and Dispersion Applications (*PIs – Ranjeet Sokhi, Alexander Baklanov*); <http://www.cost728.org> (*Roles: participant*)
- 54.(2003-2005) – Development of New Generation of Cloud and Precipitation Analyses for the Automatic Road Weather Model (*Research Project in cooperation with DRD, PIs – Torben S.Pedersen, Bent H.Sass*) (*Roles: participant*)
- 55.(2002-2003) – **SMELTER**: Assessment of Long-Range Transport and Deposition from Cu-Ni Smelters of Russian North (*INEP-DMI Pilot Study; PIs – Alexander Mahura, Alexander Baklanov*)
- 56.(2002-2003) – Evaluation of source-receptor relationship for atmospheric pollutants using trajectory modelling and probability fields analysis (*INEP-DMI Pilot Study, PIs – Alexander Mahura, Alexander Baklanov*)
- 57.(2002-2005) – **FP5 FUMAPEX**: Integrated Systems for Forecasting Urban Meteorology, Air Pollution and Population Exposure (*EU FP5 Collaborative Project, PI – Alexander Baklanov*); <http://fumapex.dmi.dk> (*Roles: participant*)
- 58.(2001-2002) – Assessment of Potential Risk of "Kursk" Nuclear Submarine Operation Phases (*INEP-DMI Pilot Study; PIs – Alexander Mahura, Alexander Baklanov*)
- 59.(2001-2002) – **FARECS-I, II**: Assessment of Impact of Russian Nuclear Fleet Operations on Russian Far Eastern Coastal Regions (*IIASA-DMI-INEP-NCAR-DOE-UV; Radiation Safety of Biosphere – RAD Project; PIs – Frank Parker, Vladimir Novikov, Keith Compton*) (*Roles: participant*)
- 60.(2000-2004) – Modelling of Anthropogenic Impact on the Arctic Environment (*INEP KSC RAS Research Project/Theme; PIs – Alexander Baklanov, Sergey Morozov*) (*Roles: participant*)
- 61.(2000-2003) – **AR-NARP**: Atmospheric Transport Pathways, Vulnerability and Possible Accidental Consequences from the Nuclear Risk Sites in the European Arctic (*NARP Project; PI – Alexander Baklanov*) (*Roles: participant*)
- 62.(1998-2000) – Assessment of Potential Risk of Environmental Radioactive Contamination in Northern Europe from Terrestrial Units in North-West Russia (*INTAS Project; PI – Alexander Baklanov*) (*Roles: participant*)
- 63.(1998-2000) – Identification of Sources and Long-Term Trends for Pollutants Using Isentropic Trajectory Analysis (*UW-NOAA-CMDL-JISAO Joint Project; PIs – Dan Jaffe, Joyce Harris*) (*Roles: participant*)
- 64.(1997-1998) – Atmospheric Transport Pathways from the Kola Nuclear Reactors (*UAF-INE-FOA-CERUM Joint Project; PIs – Robert Andres, Dan Jaffe, Alexander Baklanov*) (*Roles: participant*)
- 65.(1997-1998) – Identification of Sources and Long-Term Trends for Pollutants in the Arctic Using Clustered Trajectory Analysis (*UAF-NOAA-CMDL-CIFAR Joint Project; PIs - Dan Jaffe, Joyce Harris*) (*Roles: participant*)
- 66.(1997-2002) – Risk and Nuclear Waste: Nuclear Problems, Risk Perceptions and Societal Responses to Nuclear Waste in the Barents Region (*PI - Ronny Bergman*) (*Roles: participant*)

- 67.(1996-1997) – Atmospheric Transport Pathways from the Kola Nuclear Power Plant (UAF-ADEC-FOA-BECN-CMF-INEP Joint Project; PIs - Dan Jaffe, Alexander Baklanov, Robert Andres) (Roles: participant)
- 68.(1995-1997) – Atmospheric Transport Pathways to Alaska from Potential Radionuclide Sites in the Former Soviet Union (UAF-ADEC Project 96-01; PIs - Dan Jaffe, Robert Andres) (Roles: participant)
- 69.(1995-1996) – Impact of Asian Emissions on CO and O<sub>3</sub> Concentrations in the Northern Pacific Atmosphere (NOAA Climate and Global Change Program, Grant NA36GPO2; PIs - Dan Jaffe, John Merrill) (Roles: participant)
- 70.(1993-1996) – An Elaboration of Information System of Operational Forecast on the Radiation Hazards for the Kola Peninsula and North Kallott Countries (INEP KSC RAS Research Project/Theme; PIs – Gennady Kalabin, Alexander Baklanov) (Roles: participant)
- 71.(1992-1996) – Modeling of Possible Ecological Consequences from the Objects of Radiation Risk in the European Arctic (INEP KSC RAS Research Project/Theme; PIs – Gennady Kalabin, Alexander Baklanov) (Roles: participant)
- 72.(1992-1996) – Modeling of the Kola Nuclear Power Plant Impact on the Environment in Complex Physical-Geographical Conditions (INEP KSC RAS Research Project/Theme; PIs – Gennady Kalabin, Alexander Baklanov) (Roles: participant)
- 73.(1991-1994) – Soviet Arctic Haze - Study of Pollution in Alaska and USSR (PIs – Dan Jaffe, Alexander Baklanov) (Roles: participant)
- 74.(1991-1995) – “Ecological Learning Monitoring”; “Severonickel - Research Work”; “Khibiny - Ecological Tours with Research Aims”; “Radon”, “Window in the Internet” (INEP-ECONORD-ECO-AS Joint Research-Educational Projects; PIs – Alexander Mahura, Alexander Baklanov)
- 75.(1991-1995) – Evaluation of the Severonickel Plant Impact on the Environment (INEP KSC RAS Research Project/Theme; PIs – Gennady Kalabin, Alexander Baklanov) (Roles: participant)
- 76.(1990-1991) – Investigation of Nonstability Criterion of Atmosphere in Short-Term-Range Weather Forecast for Prediction of Convective Parameters (LGMI/RSHU University Research Project; PI – Dmitriy Kadyrov) (Roles: student)
- 77.(1988-1991) – “Atmospheric Dispersion Modelling for Potential Accident Consequence Assessments at Nuclear Power Plants”; “Meso-Scale Meteorological Modelling of Boundary Layer Processes” (LGMI/RSHU University Research Projects/Themes; PI – Alexander Gavrilov) (Roles: student)