

PAN-EURASIAN EXPERIMENT (PEEX) – FIRST STEPS TOWARDS IMPLEMENTING THE PEEX SCIENCE PLAN

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Keywords multidisciplinary approach, multiscale research, grand challenges, arctic-boreal, observation networks

INTRODUCTION

Pan-Eurasian Experiment (PEEX) initiative (<https://www.atm.helsinki.fi/peex/>) is an international, multi disciplinary, multiscale bottom up initiative established in 2012 (Lappalainen et al. 2014). The main focus of the initiative is to solve interlinked global challenges influencing societies in the Northern Eurasian region (Kulmala et al. 2015). The initiative has grown fast and at the moment it is involving research communities from 20 different countries from Europe, Russia and China. Altogether 80 institutes have contributed the PEEX Science Plan, which identifies the PEEX Program at large and introduces the research agenda, the components of the future PEEX research infrastructure and the topics relevant for impact making and outreach activities. The program is coordinated by the Univ.Helsinki and Finnish Meteorological Institute together with the strong support by the Moscow State University (MSU) and AEROCOSMOS from Russia and Institute of Remote Sensing and Digital Earth (RADI) and University of Nanjing from China.

APPROACH

The first practical step towards implementing the PEEX research agenda is the opening of PEEX Special issue in the Journal of Atmospheric Chemistry and Physics (http://www.atmos-chem-phys-discuss.net/special_issue265.html). The special issue serves as a first platform collecting PEEX relevant scientific results for the first PEEX science assessment. The Assessment(s) will be distributed to different stakeholders and policy making processes such as Arctic Council, IPCC, Future Earth and the European, Russian and Chinese ministries. PEEX Community has also contributed the Sustainable Earth System Manifesto, which was published in Aug 2015 in Helsinki. This event was also launching the collaboration between with the PEEX community and the Russian Hub Helsinki and between two the FCoEs coordinated by the Atmospheric Sciences and Aleksanteri Institute at the University of Helsinki. In 2014-2015 PEEX has also organized series of joint workshops together with the NCoE CRAICC. The aim of the workshops has been to deepen the research collaboration between PEEX and CRAICC and to identify the most relevant research questions for a more specific topics compared to Science Plan such as “Arctic shipping and climate change”.

The priority task of the PEEX research infrastructure development is to establish coordinated, coherent land based observation network (The PEEX Network) over Northern Pan-Eurasian region. The concept of the hierarchical PEEX in situ station network is based on know-how of the 20 year development of the SMEAR-II flagship station measurement theory and techniques (Hari et al. 2015). However the backbone of the station network is built on the existing biosphere (ecological) and atmospheric observation networks in collaboration with European, Russian, Chinese and global partners.

PEEX is opening in autumn 2015 a metadata enquiry in order to make an inventory of the state of the art of ongoing measurements in Russia and China. Similar approach will be carried out with the inventory of societal data in order to facilitate and strengthen the multidisciplinary approach in a frame of the PEEEX research agenda. As a part of the Metadata enquiry a proof of existing data set is asked for the PEEEXView online tool (Malkamäki et al. of this issue). The PEEEXView is an online tool for visualizing and analyzing of simulation and observational data and a demo version has just been released in PEEEX website (http://www.atm.helsinki.fi/aapon_demo_php/test15_demo.html). In the future, the PEEEXView is envisioned to combine multidisciplinary datasets of varying temporal and spatial scales.

FUTURE PROSPECTS

PEEX will continue deepening the collaboration with the European, Russian, Chinese and global partners to maximize the impact of the PEEEX research highlights, scientific assessment and research infrastructure development in the climate policy relevant processes. The key partners and stakeholders here are IIASA, Digital Earth, Future Earth, Arctic Council (SAON), WMO and GEO – GEOSS.

ACKNOWLEDGEMENTS

A major part of the PEEEX Preparatory Phase work in years 2010–2015 has been based on the in-kind contribution of several European, Russian and Chinese research institutes. The work presented here would not have been possible without collaboration between the participants of the PEEEX meetings, conference organized in Helsinki, Moscow, Hyytiälä and Saint Petersburg. In addition we would like to acknowledge the following support or funding from the following bodies: Finnish Cultural Foundation, Grant: Prof. Markku Kulmala “International Working Groups”; Russian Mega-Grant No. 11.G34.31.0048 (University of Nizhny Novgorod), Academy of Finland contract 259537, Beautiful Beijing (Finland- China collaboration project) funded by TEKES, EU project InGOS and the NordForsk Nordic Centre of Excellence of CRAICC (no 26060) and Nordforsk CRAICC-PEEX (amendment to contract 26060).

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