



Pan-Eurasian experiment (PEEX) establishing a process towards high level Pan-Eurasian atmosphere-ecosystem observation networks

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Pan-Eurasian Experiment (PEEX) is a new multidisciplinary research approach aiming at resolving the major uncertainties in the Earth system science and global sustainability questions in the Arctic and boreal Pan-Eurasian regions (Kulmala et al. 2011). The main goal of PEEX Research agenda is to contribute to solving the scientific questions that are specifically important for the Pan-Eurasian region in the coming years, in particular the global climate change and its consequences to nature and human society.

Pan Eurasian region represents one the Earth most extensive areas of boreal forest (taiga) and the largest natural wetlands, thus being a significant source area of trace gas emissions, biogenic aerosol particles, and source and sink area for the greenhouse gas (GHG) exchange in a global scale (Guenther et al. 1995, Timkovsky et al. 2010, Tunved et al. 2006, Glagolev et al. 2010). One of the first activities of the PEEX initiative is to establish a process towards high level Pan-Eurasian Observation Networks. Siberian region is currently lacking a coordinated, coherent ground based atmosphere-ecosystem measurement network, which would be crucial component for observing and predicting the effects of climate change in the Northern Pan- Eurasian region. The vision of the Pan-Eurasian network will be based on a hierarchical SMEAR-type (Stations Measuring Atmosphere-Ecosystem Interactions) integrated land-atmosphere observation system (Hari et al. 2009). A suite of stations have been selected for the Preliminary Phase of PEEX Observation network. These Preliminary Phase stations includes the SMEAR-type stations in Finland (SMEAR-I-II-III-IV stations), in Estonia (SMEAR-Järviselja) and in China (SMEAR-Nanjing) and selected stations in Russia and ecosystem station network in China.

PEEX observation network will fill in the current observational gap in the Siberian region and bring the Siberian observation setup into international context with the with standardized or comparable procedures. It will prove a basis for the long-term continuation of advanced measurements on aerosols, clouds, GHGs and trace gases in Northern Pan- Eurasian area to be operated by PEEX educated technical staff.