



Distribution of trace gases and aerosols in the troposphere over West Siberia and Kara Sea

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The Arctic is affected by climate change much stronger than other regions of the globe. Permafrost thawing can lead to additional methane release, which enhances the greenhouse effect and warming, as well as changes of Arctic tundra ecosystems. A great part of Siberian Arctic is still unexplored. Ground-based investigations are difficult to be carried out in this area due to it is an out-of-the-way place. So, in spite of the high cost, aircraft-based in-situ measurements can provide a good opportunity to fill up the gap in data on the atmospheric composition over this region.

The ninth YAK-AEROSIB campaign was focused on the airborne survey of Arctic regions of West Siberia. It was performed in October 2014. During the campaign, the high-precision in-situ measurements of CO₂, CH₄, CO, O₃, black carbon and aerosols, including aerosol lidar profiles, have been carried out in the Siberian troposphere from Novosibirsk to Kara Sea. Vertical distributions of the above atmospheric constituents will be presented.

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