



université PARIS-SACLAY

MEASURING CAMPAIGNS

YAK-AEROSIB

» The sixth YAK-AEROSIB (Airborne Extensive Regional Observations in Siberia) campaign took place in July 2012. [1] Like most other YAK-AEROSIB campaigns, it followed a transect between Novosibirsk ($55^{\circ} 00'N$ $82^{\circ} 54' E$) and Yakutsk ($62^{\circ} 10'N$ $129^{\circ} 50'E$), over an area between $55^{\circ} N$ and $63^{\circ} N$ and between $80^{\circ} E$ and $130^{\circ} E$ approximately. But unlike the other campaigns, this one was carried out on a new platform (Tupolev 134) and was equipped with a new instrument for the measurement of methane.

» Little is known about the composition of the Siberian troposphere, far from major sources of pollution in the northern hemisphere. But understanding the distribution of pollutants and greenhouse gases in this region is crucial to enable the quantification of regional carbon sources (wetlands, forest fires, human activities) and to improve the representation of large-scale transport over Eurasia.

» The measurements obtained during previous YAK-AEROSIB airborne campaigns have shown that the CO concentration can be largely influenced by a set of transport and emission processes including the advection of Chinese pollutants in baroclinic disturbances, the diffuse or otherwise advection of European pollutants at various altitudes, biomass fires in Central Asia, as well as highlighting the difficulty of the models to characterise the vertical mixing in this region.

» The YAK-AEROSIB project started in 2004 as a Franco-Russian collaboration with the objective of "establishing systematic observations of atmospheric compounds CO, O₃ and CO₂ in the middle and lower troposphere in Eurasia". These measurements aim to describe the seasonal and interannual variability of CO₂ sources and transport, as well as the chemistry-transport processes that lead to the production of ozone in Siberia.

» The project is structured in the form of a European research group (GDRE +) with the contribution of the international relations department of the CNRS.

The main partners of the project are:

- » LSCE,
- » the Laboratory of Aerology (LA),
- » LATMOS,
- » the Institute of Atmospheric Optics (IAO) in Tomsk (Russia).



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Scientific Manager: Jean Daniel Paris (jean-daniel.paris@lsce.ipsl.fr)

> Website