

Name of research institute or organization:

Institut für Umwelphysik, Universität Heidelberg

Title of project:

Long-term observations of $^{14}\text{CO}_2$ at Jungfraujoch

Project leader and team:

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Project description:

Atmospheric $^{14}\text{CO}_2$ observations at Jungfraujoch are used as clean air background for other observational sites in Central Europe to estimate the regional fossil fuel CO_2 component; they are also applied as reference for carbon cycle studies or bomb radiocarbon dating of young organic material. Our measurements have started in 1986 and are continued without interruption until today. The available data from the last decade have been published this year, together with those from the Schauinsland station in the Black Forest (Levin et al., 2013).

The quasi-continuous $^{14}\text{CO}_2$ observations at Jungfraujoch are continued in the framework of the European ICOS (Integrated Carbon Observation System) Atmospheric Station network, serving as reference for estimates of the fossil fuel CO_2 component at polluted areas all over Europe.

Key words:

Carbon dioxide, carbon cycle modelling, radiocarbon, fossil fuel CO_2 , climate, Kyoto Protocol

Internet data bases:

<http://www.iup.uni-heidelberg.de/institut/forschung/groups/kk/>
<http://www.iup.uni-heidelberg.de/institut/forschung/groups/fa/radiokohlenstoff/radiometrie-web-html>

Collaborating partners/networks:

ICOS (<http://www.icos-infrastructure.eu>)

Scientific publications and public outreach 2013:

Refereed journal articles and their internet access

Levin, I., B. Kromer and S. Hammer, Atmospheric $\Delta^{14}\text{CO}_2$ trend in Western European background air from 2000 to 2012, *Tellus B*, **65**, 20092, doi: 10.3402/tellusb.v65i0.20092, 2013.
<http://dx.doi.org/10.3402/tellusb.v65i0.20092>

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