



Regional carbon dioxide fluxes from aircraft measurements in southwest France

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In 2007, the CarboEurope-IP Regional Component organised the second edition of the CERES measurement campaign in the southwest of France. This was a follow-up of the initial campaign in 2005. CERES'07 consisted of two intensive observational periods (IOPs), of which one in spring and the other one in summer. During both IOPs, ground stations, tall towers, radiosondes and a number of aircrafts were used, including our own environmental research aircraft (ERA).

The ERA is a small aircraft flying at low altitudes and low air speeds, equipped to measure fluxes of carbon dioxide, latent heat and sensible heat using the eddy-correlation technique. In addition, instruments are on board for measuring ground temperature, net radiation and photosynthetically active radiation (PAR). Flux data obtained with the ERA during CERES'07 have been analyzed and will be presented here.

In the data analysis, we present regional fluxes of carbon dioxide focussing at seasonal trends in relation to landscape elements. To achieve this, flight tracks were split into homogeneous segments based on land cover, topography and soil type. During both IOPs, weather conditions were constant. This gives us the possibility to average data in each segment across all flights, though the issue of diurnal variation in surface fluxes and radiation still remains.

In short, the analysis strategy on our airborne flux data from CERES'07 will be addressed in this presentation together with its results focussing at drivers for these fluxes at landscape scale.