

CARBO EUROPE SUMMER SCHOOL ON: « EDDY COVARIANCE FLUX MEASUREMENTS »

The quantification of the net fluxes (CO_2 , H_2O , sensible heat) exchanged between the terrestrial ecosystems and the atmosphere constitutes an important step to understand the global carbon cycle and climate changes and their impact on the vegetation.

Eddy covariance is now the most widely used method to measure these net fluxes with, notably, the establishment of a European sites network funded by the European Community through the CarboEurope Integrated Project. However, the method is based on physical assumptions that are not always well known and understood by the system users. In addition the data treatment requires several procedures and corrections that are quite complex for beginners.

Aims

The aim of this summer school is to allow current and future eddy covariance systems users to become familiar with the eddy covariance method and, more particularly, to gain:

- Knowledge of the physical bases of the method and of the transport processes in the surface layer.
- Ability to install, run and maintain an eddy covariance system.
- Aptitude to correctly use and parameterise the data treatment software packages.
- Ability to analyse the data and to provide a diagnostic about their quality and representativeness.
- Knowledge of the latest developments of the method.

Programme

Theoretical lectures:

- Physical bases of tracer transport in the surface boundary layer and of eddy covariance method.
- Description of the apparatus (gas analysers, anemometers, air transport systems, data acquisition and treatment software packages, with the presence of manufactory managers).
- Flux computation procedure including time lag optimisation, fluctuation computation, application of rotations and corrections,...
- Data quality tests.
- Night flux problems, including u^* correction, direct advection and storage measurements.
- Footprint analysis.
- Data gap filling strategies.
- Applications: causes of the spatio-temporal flux variability, comparison between carbon sequestration estimated by eddy covariance and inventories...

Practical works:

- Set up installation and starting up of an eddy covariance system.
- Running and parameterisation of data acquisition software packages.
- Data analysis, night flux corrections and data gap filling.

Teachers

Confirmed: Marc Aubinet, *FUSAGx (Belgium)*, Dennis Baldocchi, *Univ. California, Berkeley (USA)*, Ian Elbers, *ALTERRA, (The Netherlands)*, Eva Falge, *Univ. Bayreuth (Germany)*, Christian Feigenwinter, *FUSAGx (Belgium)*, André Granier, *INRA Nancy (France)*, Bernard Heinesch, *FUSAGx (Belgium)*, Olaf Kolle, *Max Planck Institute, Iéna (Germany)*, Bernard Longdoz, *INRA Nancy (France)*, Dario Papale, *Univ. Tuscia, Viterbo (Italy)*.

Practical information

Where and when:

The workshop will be held From July 10th to 21st 2006 in the Hotel NOVOTEL at Wepion (Belgium), on the banks of the Meuse river, close to Namur, a town situated at 60 km in South East of Brussels. It will be limited to 30 participants.

Access:

Closest airports: Brussels National (all flights), Charleroi - Brussels South (low cost companies). Easy train access to Namur from Brussels (at least two trains per hour).

Accommodation:

Full board, double rooms. Single rooms available for additional charge.
Hotel NOVOTEL, Chaussée de Dinant, 1149, B 5100 Wépion. Belgium.
Tel : 32 81 46 08 11, Fax : 32 81 46 19 90,
http://www.novotel.com/novotel/fichehotel/fr/nov/0594/fiche_hotel.shtml

Summer school welcome and registration :

July 10th : 10h00-12h00

Fee:

1600 Euros, including full board, inscription to the courses and manual. A limited number of grants with inscription at a preferential rate of 500 Euros will be accepted (see below).

Application procedure:

- The application form should be sent before March 3rd, 2006 to : vilret.a@fsagx.ac.be along with a curriculum vitae (including a short description of present research), a motivation letter and an agreement letter from the laboratory director. An acknowledgment receipt will be send.
- The decision concerning the authorisation to participate will be communicated on March 17th.
- The registration will be effective only after the registration fee payment.
- Applicants for a grant should join a justification letter and their latest pay slip.

Organisers and Links:

- CarboEurope IP (<http://www.carboeurope.org>)
- Faculté Universitaire des Sciences agronomiques de Gembloux (Belgium) (<http://www.fsagx.ac.be>)
- Institut National de la Recherche Agronomique (France) (<http://www.inra.fr>)

Contact :

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