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Gap filling procedures for surface flux observations at the grassland site Cabauw.

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Gap filled time series of surfaces fluxes are of interest for climatological purposes and for model evaluations that focus on longer time scales, e.g. the seasonal variation of the hydrological cycle. In the past a gap filled time series for grassland at the Cabauw Experimental Site for Atmospheric Research (CESAR) in the Netherlands has been produced for the period 1986-1996 consisting of all relevant meteorological surface fluxes and tower profiles (Beljaars and Bosveld, 1997).
A new surface flux programme at Cabauw started medio 2000. It differs from the older programme in that fluxes are measured with the eddy-correlation technique instead of the profile technique and in a later stage the quality of incoming radiation observations has been improved to BSRN standard. Additionally CO2 fluxes are now part of the measurement programme.
Standard synoptical parameters like surface pressure, temperature and wind can be measured with a high percentage of availability (better then 98%). For surface flux observations availability is in general significantly less. This calls for accurate gap filling methods in order to arrive at a reliable climatology.
An overview will be given of the quality control and of the gap filling procedures and its limitations. Differences with the treatment of the older time series will be discussed. Finally a climatology of surface fluxes for Cabauw will be presented.