Analysis of flux footprints in fragmented, heterogeneous croplands

README file

Flux-footprint-estimation-under-hetergoneous- canopy condition

This README file describes the data used in the study that are obtained from EC flux towers. Raw data at 10 Hz frequency obtained from three synchronized EC towers were analyzed to estimate the fluxes using EddyPro software, version 6.2.1 and was further averaged at half-hourly time interval.

Two experimental setup consisted of three EC flux towers were onitored and are as follows: 1.Successive cut experiment 2.Two crop surface experiment

EC flux System Components

3D sonic anemometer,

One open-path fast response infrared gas analyzer (IRGASON-EB-IC, Campbell Sci. Inc., USA),

logger (CR3000, Campbell Sci.Inc., USA)

1) Overview of the data file contents

The folder contained the EddyPRO version 6.2.1. output files with the Timestamp.These data files are provided as comma-separated values (CSV) formating. Missing data records are indicated by the -9999 value.

2) Variable List

Eddy pro full output variables can be accessed

Variable List

List of Data

The two field experiments took place from DOY 6-13, and 91 to 353. All the experimental data are kept in .csv file in the respective folders named after observations.

1. EC_data folder contains observed EC fluxes from the three EC systems during the two experimental data period. The data details are as follows: 1.Successive cut experiment Three EC flux towers with one each located in the mowed area T2 (Zm = 1.5 m) and sugarcane T1 (Zm = 6 m) fields to capture the fluxes originated from individual fields, with a third, taller tower located T3 (Zm = 8 m) to capture the mixed fluxes originated from the heterogeneous canopy under the succesive cut experiment. 2.Two crop surface experiment Three EC flux towers with one each located in the cotton T2 (Zm = 3 m) and sugarcane T1 (Zm = 6 m) fields to capture the fluxes originated from individual fields, with a third, taller tower located in the sugarcane field T3 (Zm =

8 m) to capture the mixed fluxes originated from both the fields. The data files are named after the EC flux towers T1, T2 , and T3 in the respetive folders.

 Ust, Lin, ASin, LE, Uin, Xin, CO2, WUE, and wdir represents friction velocity, Obukhov length, Atmospheric stability, Latent heat of Evaporation, mean wind speed, upwind distance, CO2 flux, water use efficiency, and wind direction respectively.

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