Fluxes and radiation Edge Site

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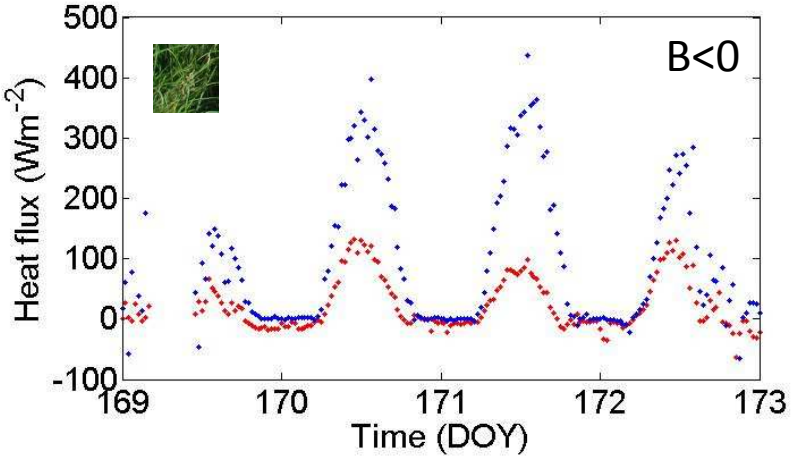
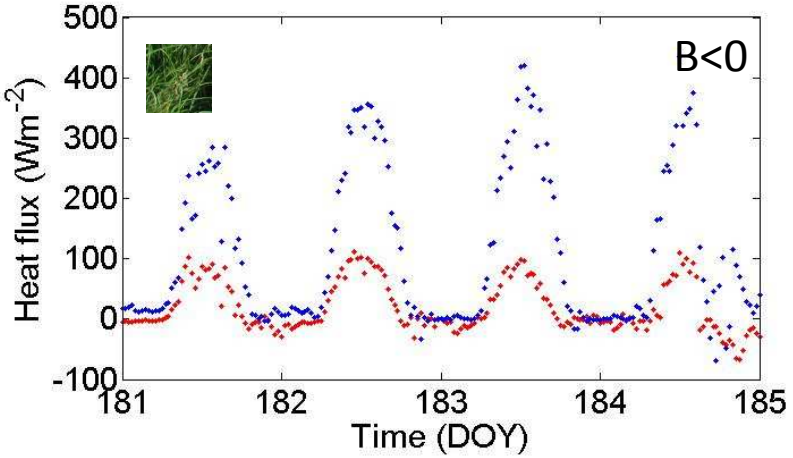
BEFORE

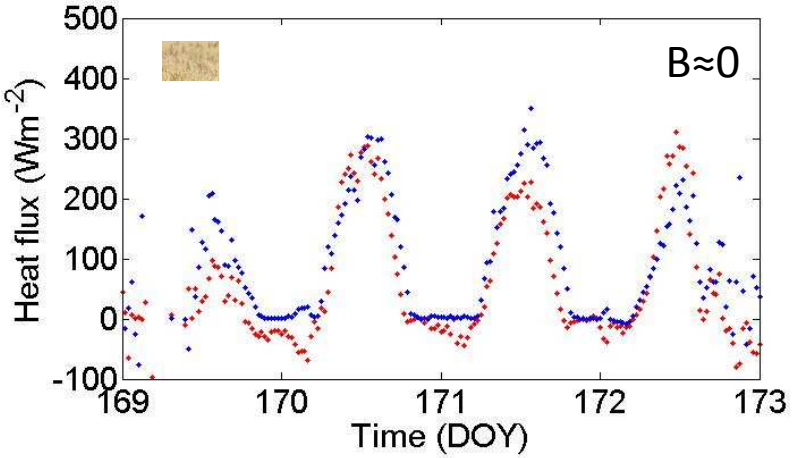
AFTER

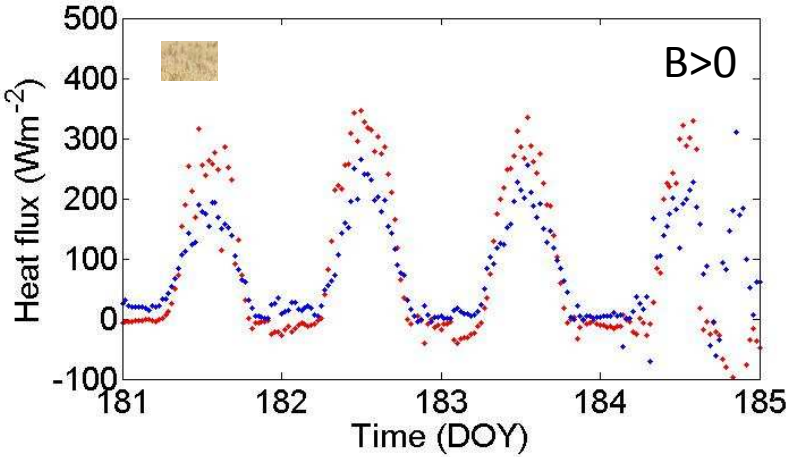
Sensible (red) & Latent (blue) Heat

START **2 WEEKS LATER**









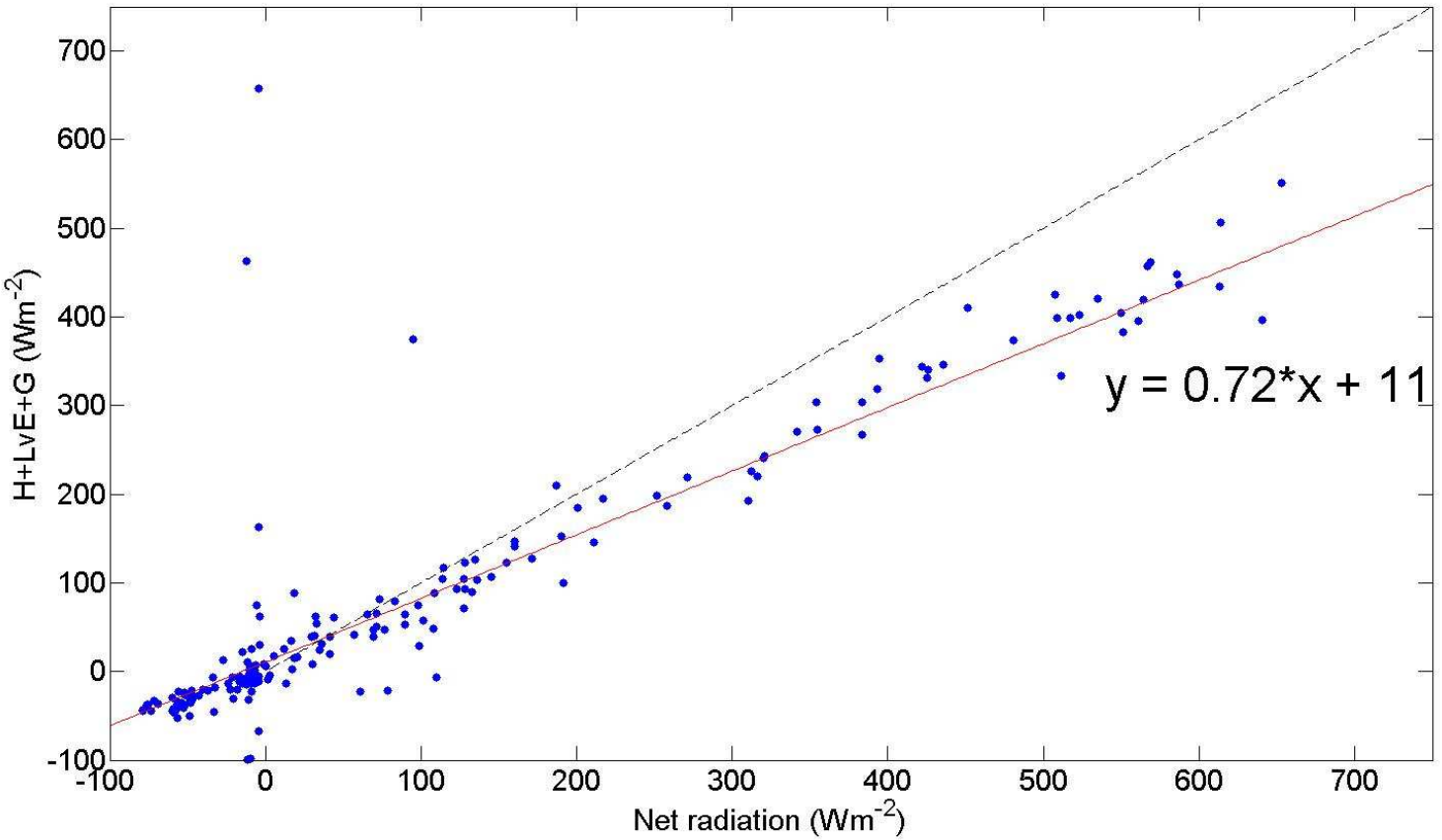
Data quality check

Energy balance closure

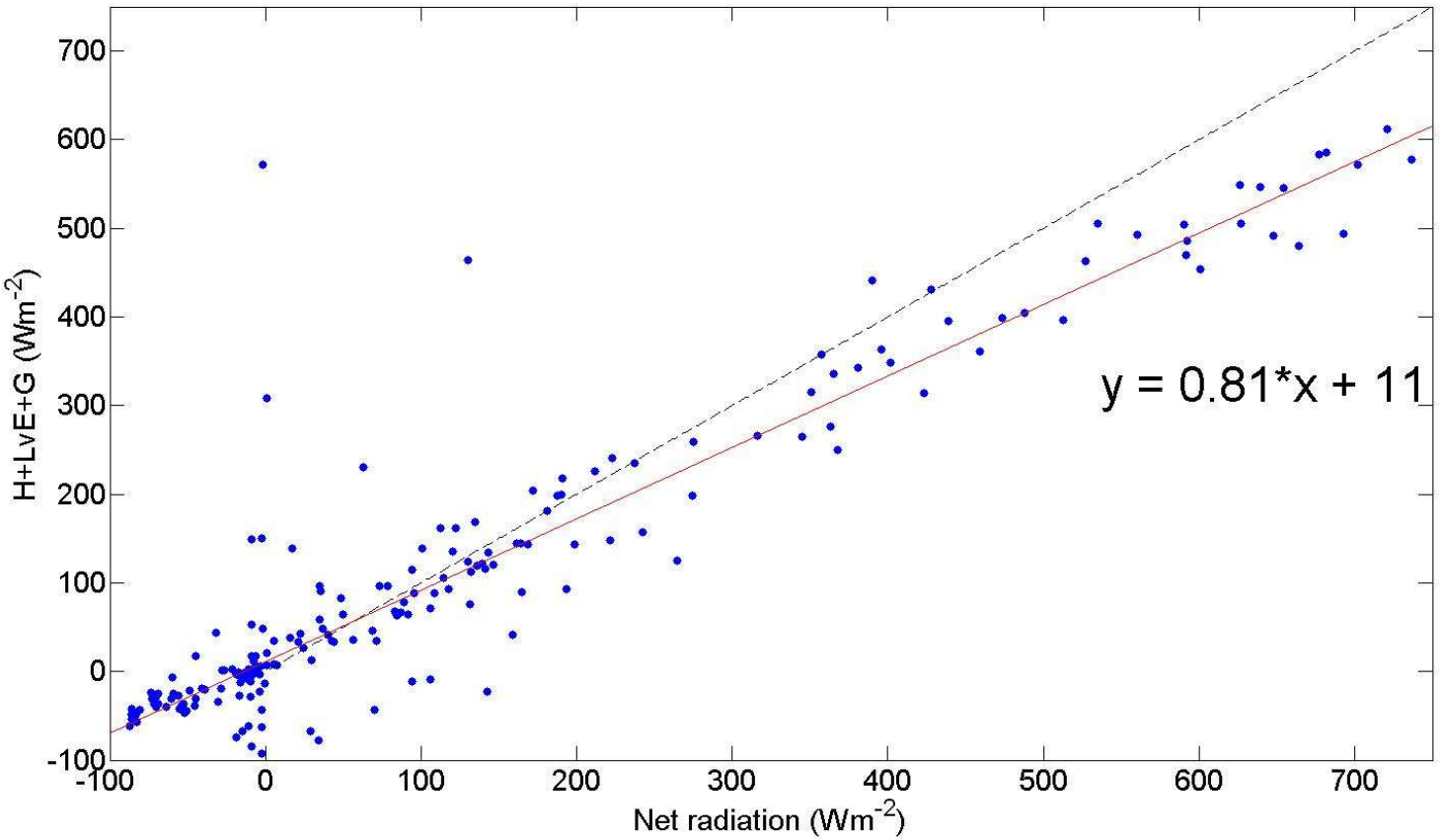
$$R_{net} = H + LvE + G$$

(Only taking IOP-days into account)

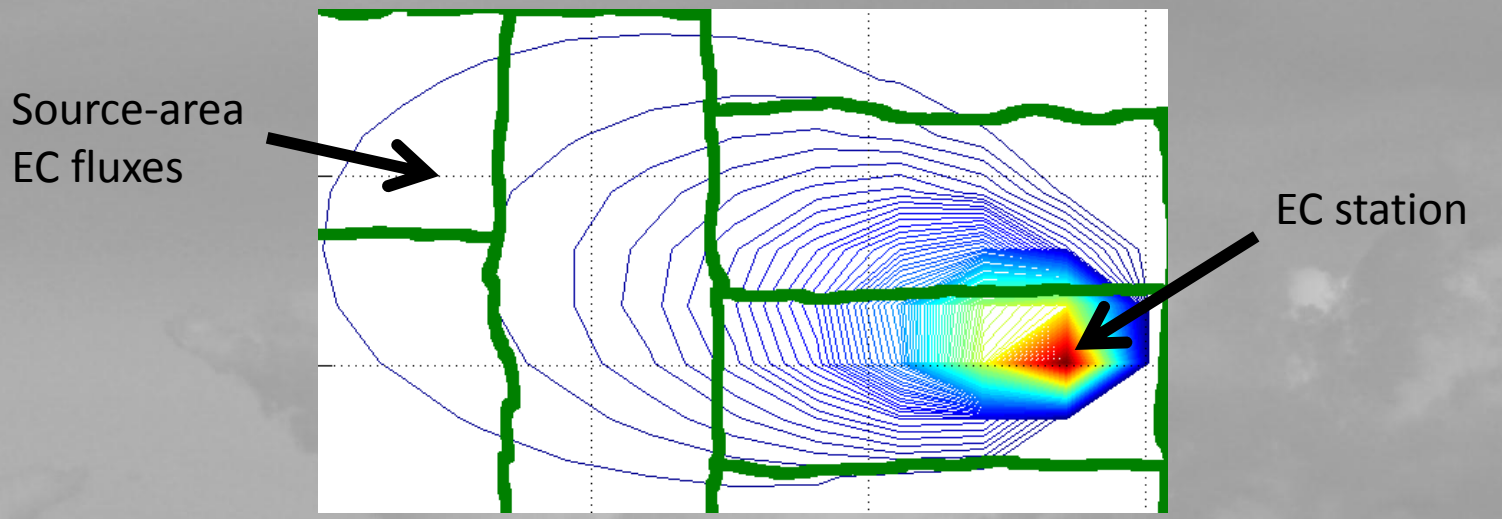
Grass: 72%


y = 0.72*x + 11
H+LvE+G (Wm-2)
Net radiation (Wm-2)
700
600
500
400
300
200
100
0
-100
-100
0
100
200
300
400
500
600
700

Wheat: 81%


y = 0.81*x + 11
H+LvE+G (Wm-2)
Net radiation (Wm-2)
700
600
500
400
300
200
100
0
-100
-100
0
100
200
300
400
500
600
700

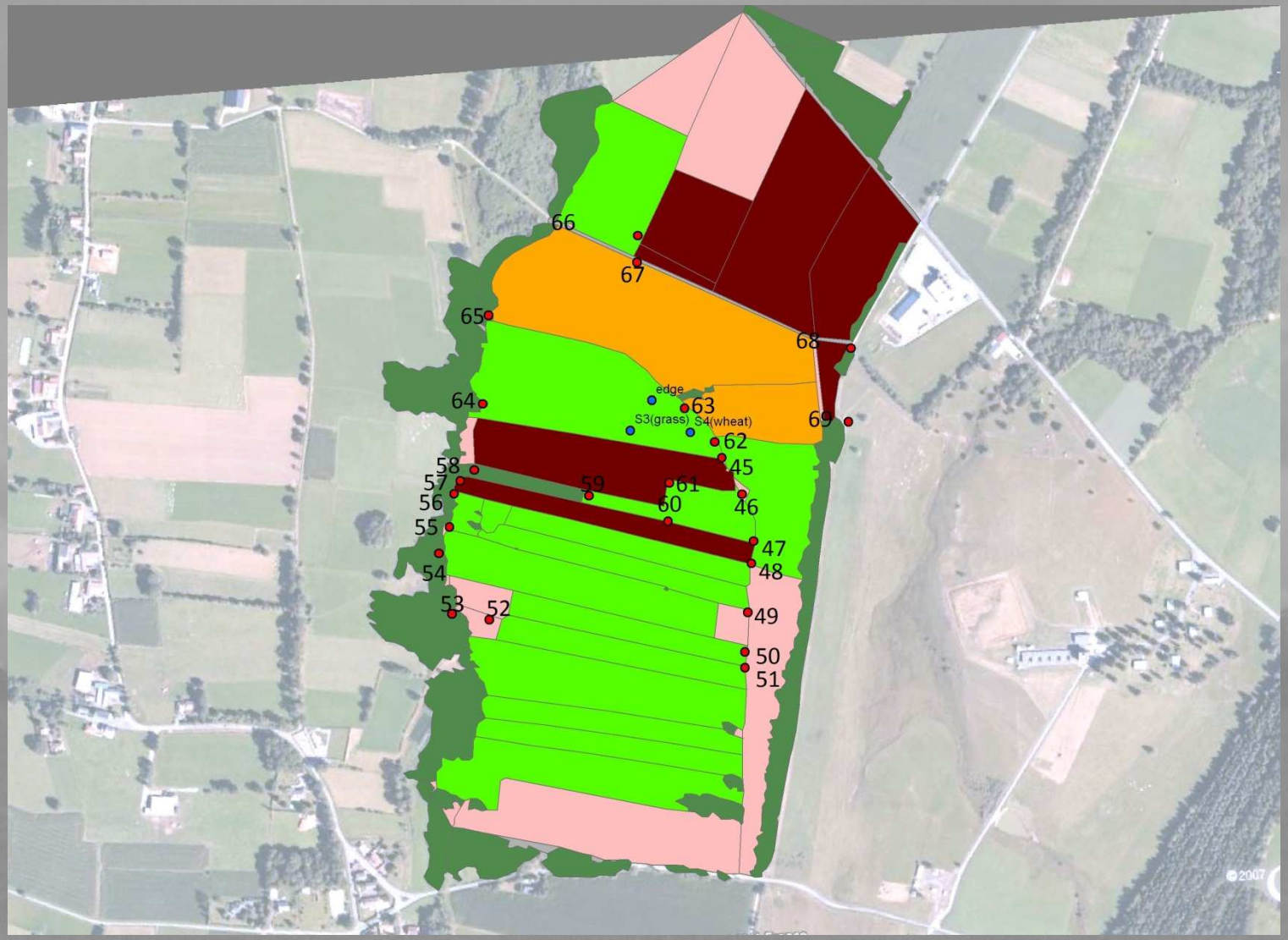
My use of EC-data



Scalar fluctuations originating from

- grass
- and/or from wheat field

Land us map Edge Site



EC-data + Boundary layer data

Scalar fluctuations influenced by:

- Surface heterogeneity
- Entrainment

→Quantify deviations of similarity functions (MOST) caused by heterogeneity and entrainment

Footprint model validation

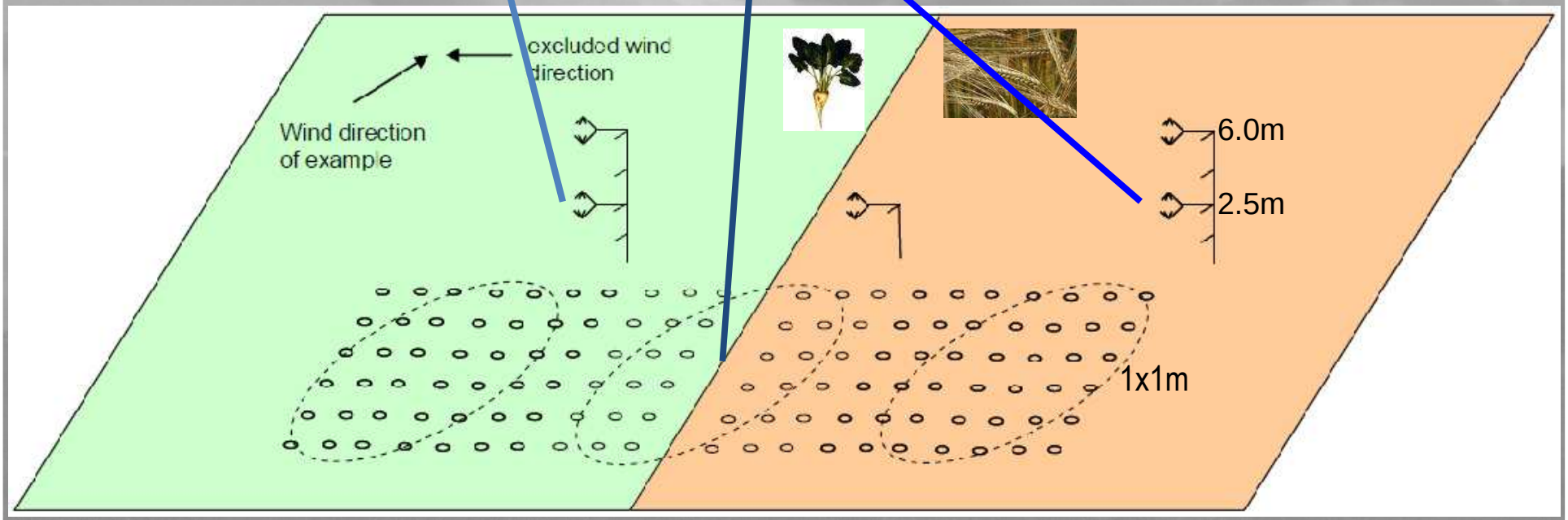
Measure sugar beet and barley flux with sufficiently homogeneous footprint

+

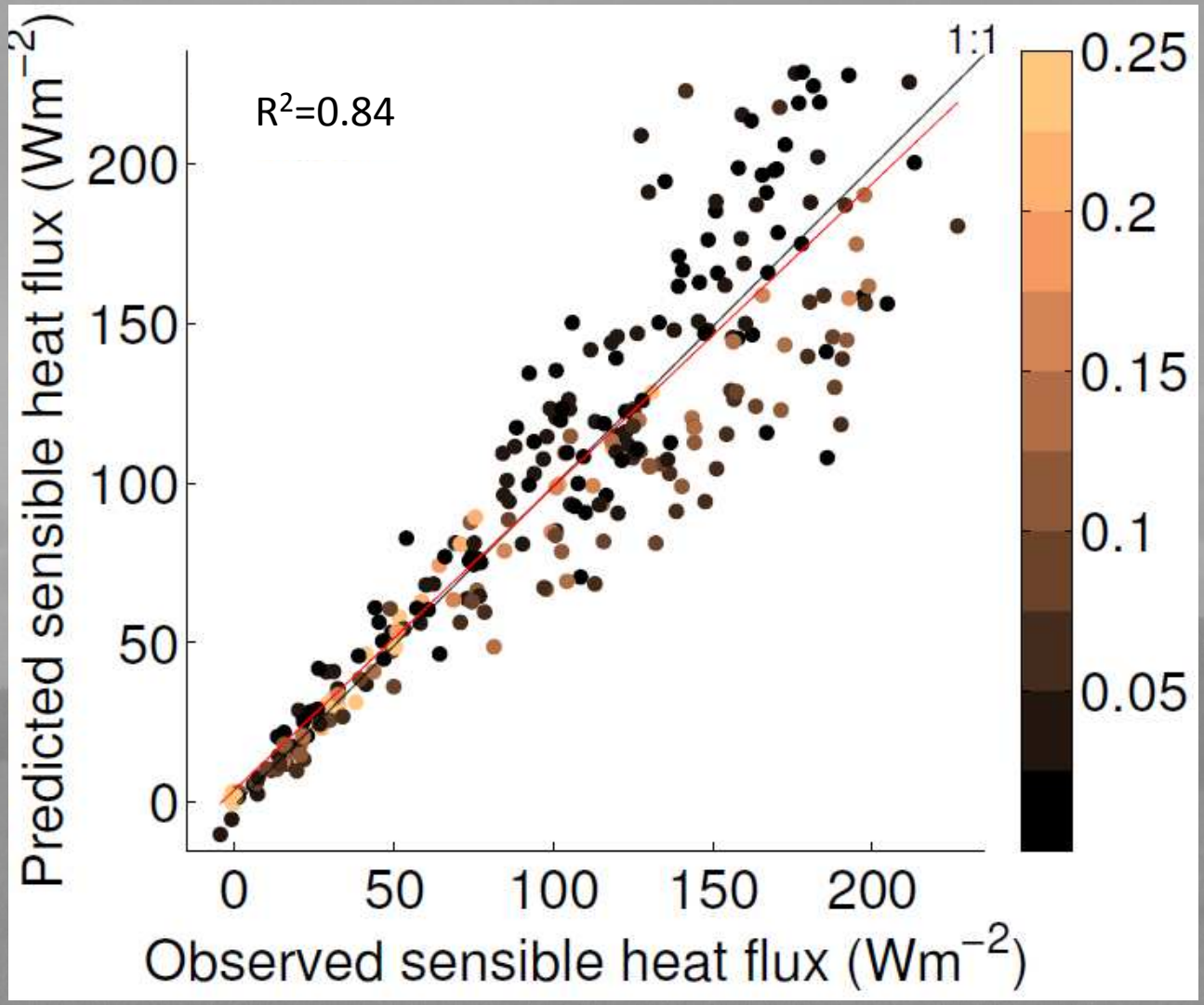
Fractions from footprint at mixed station

=

Predict mixed flux



Validation results other dataset



Note on this validation

- ‘Edge’ station was located 15m from border

  →footprint not always really heterogeneous

    →look at data from footprints with highest sugar beet contribution

      →underestimation of H

Between EC and small chamber

EC:

Requires homogeneous fetch of ~100 m

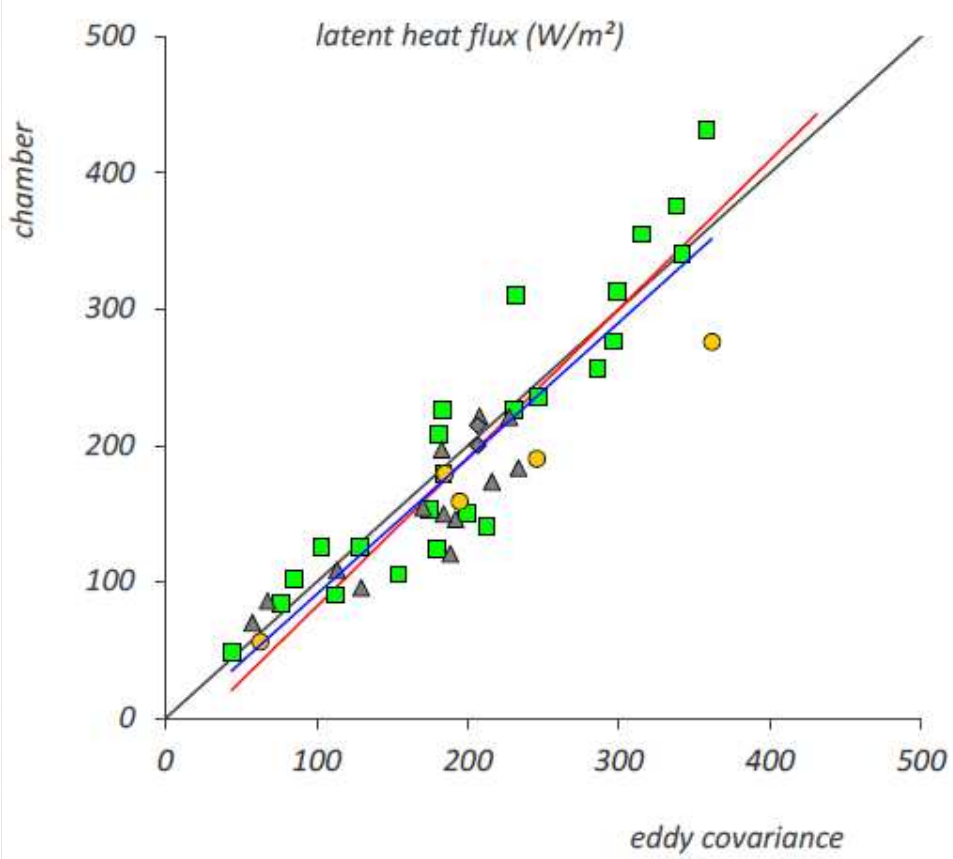
Small chamber:

Measures locally

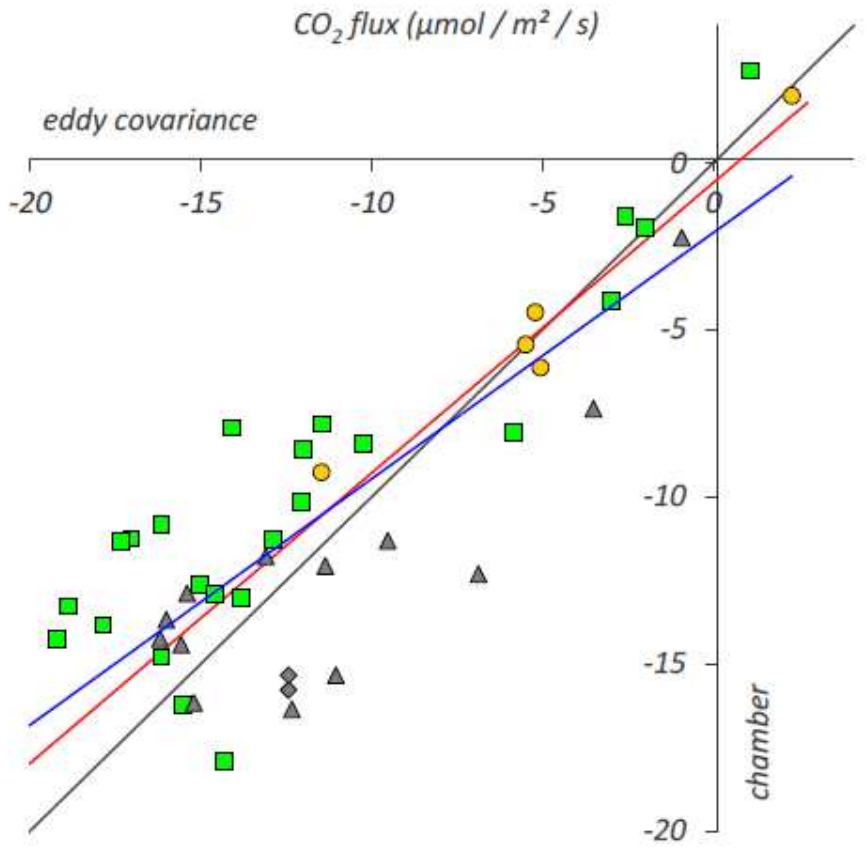
Large-chamber results

EC vs Chamber

LvE



CO_2



grass (Lannemezan) | fodder mixture (Lannemezan) | wheat (Merzenhausen) | wheat (Merzenh., frame/film collar)

1:1 | RMA | linear regression

EC-station Wageningen


Questions / Suggestions?