•Ammonia EC measurements

•Damping problem at Dronten

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•EGU Vienna

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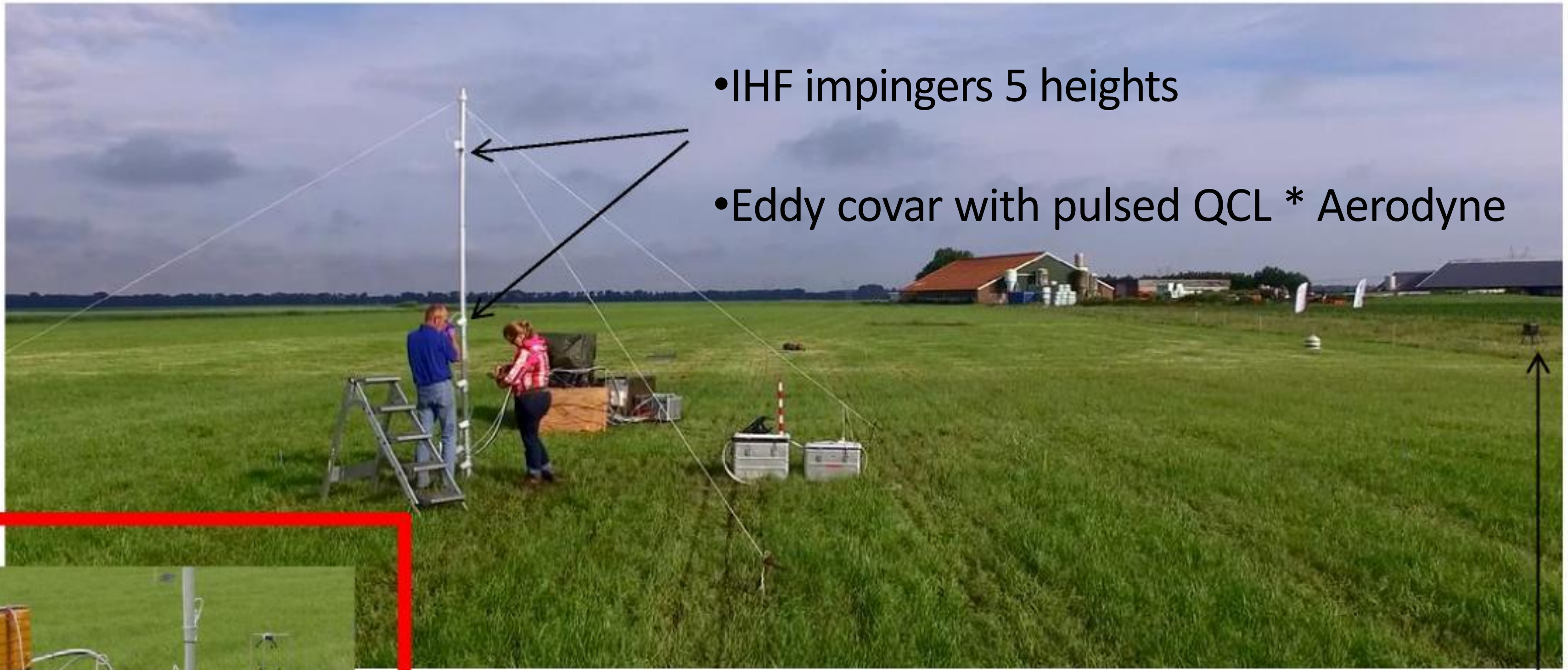
•www.ecn.nl

•Gill
•WMPro
•+ virtual
•impactor inlet

•4 m inlet
•heated & at
•0.1 barr

•Aerodyne CH4-N2O-H20-NH3 QCL

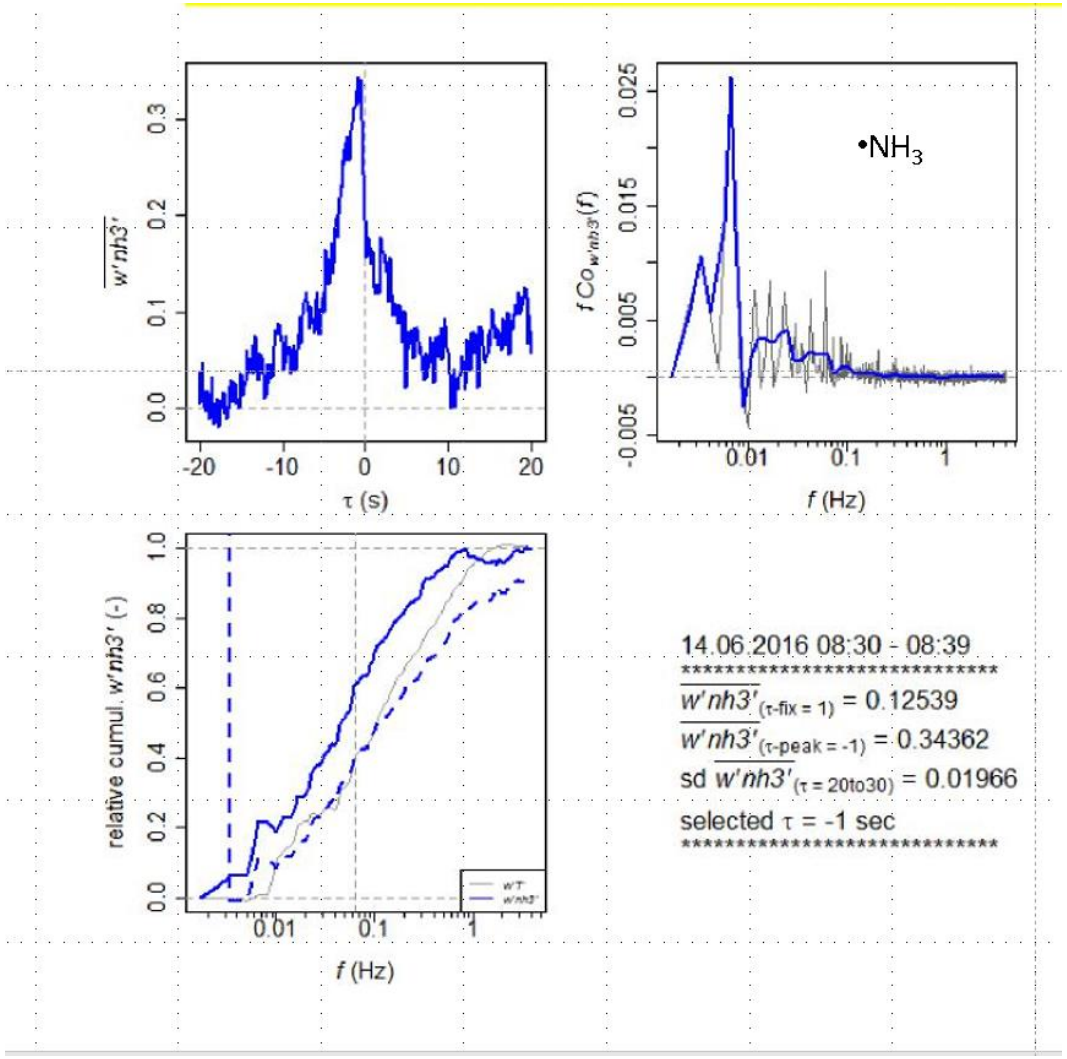
•Plot North: Injected



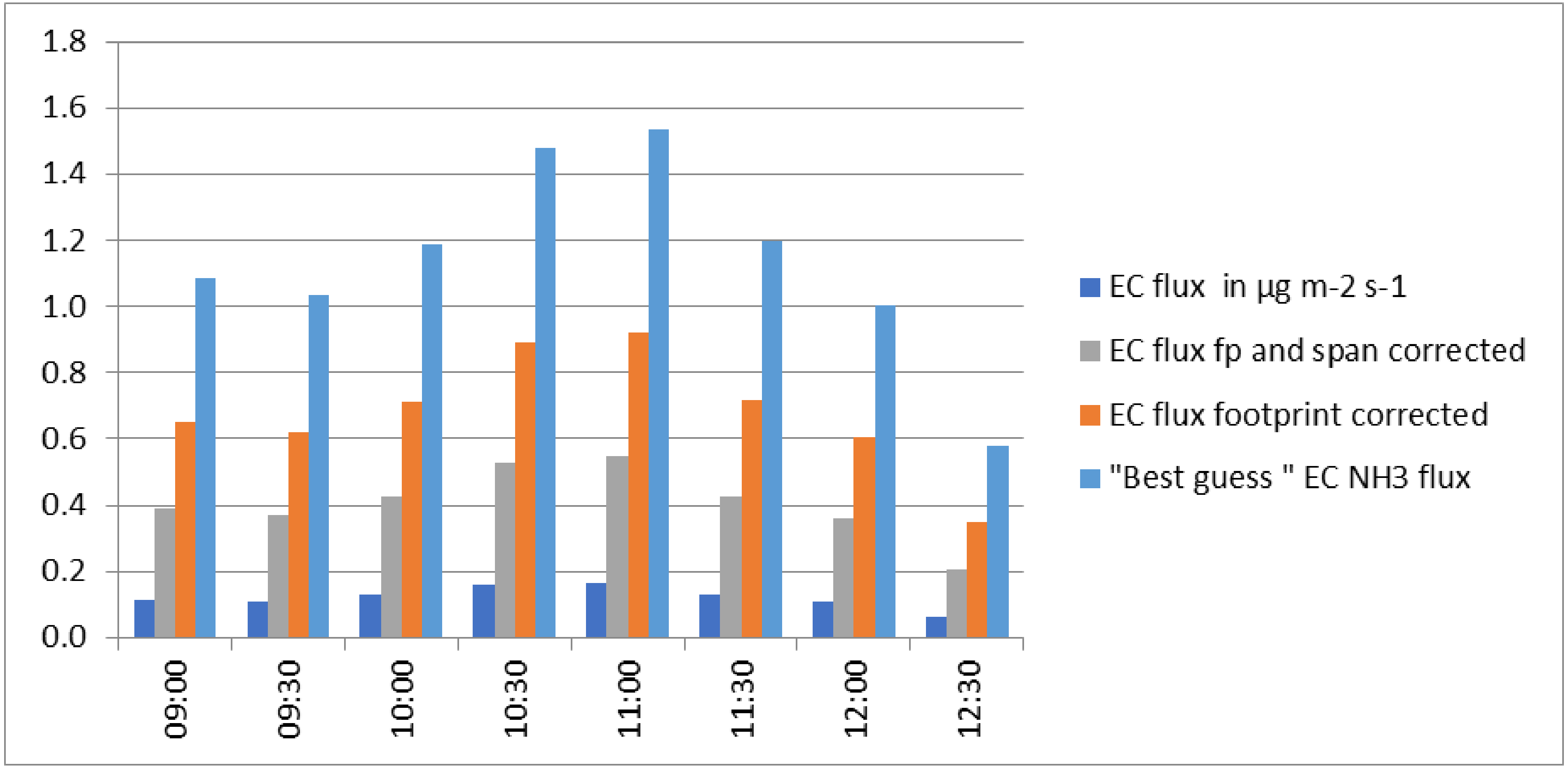
•Downwind mini doas

•Amanda wet chemical

NH3 eddy vertical flux: An example of a covariance function

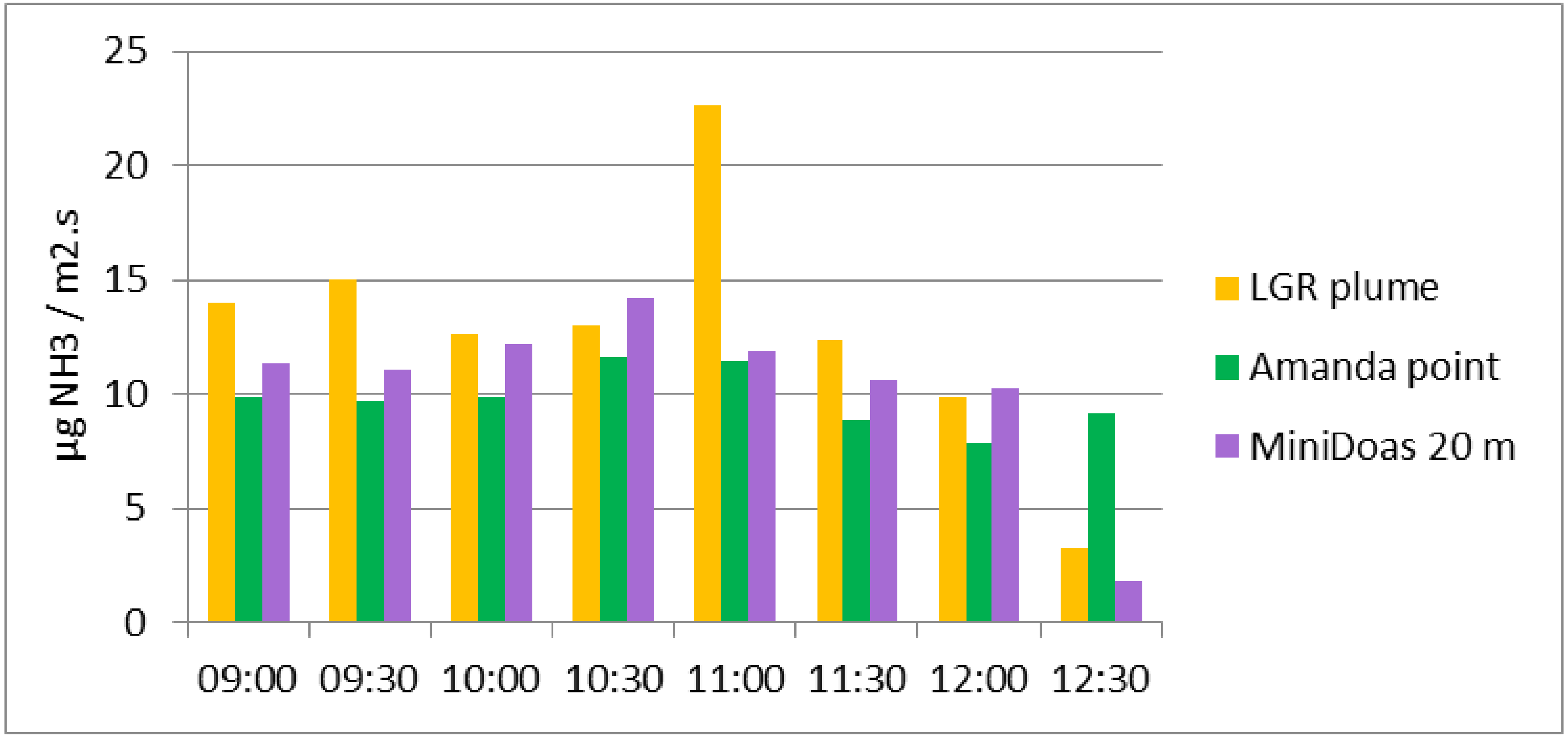


Eddy data in 30 minute blocks

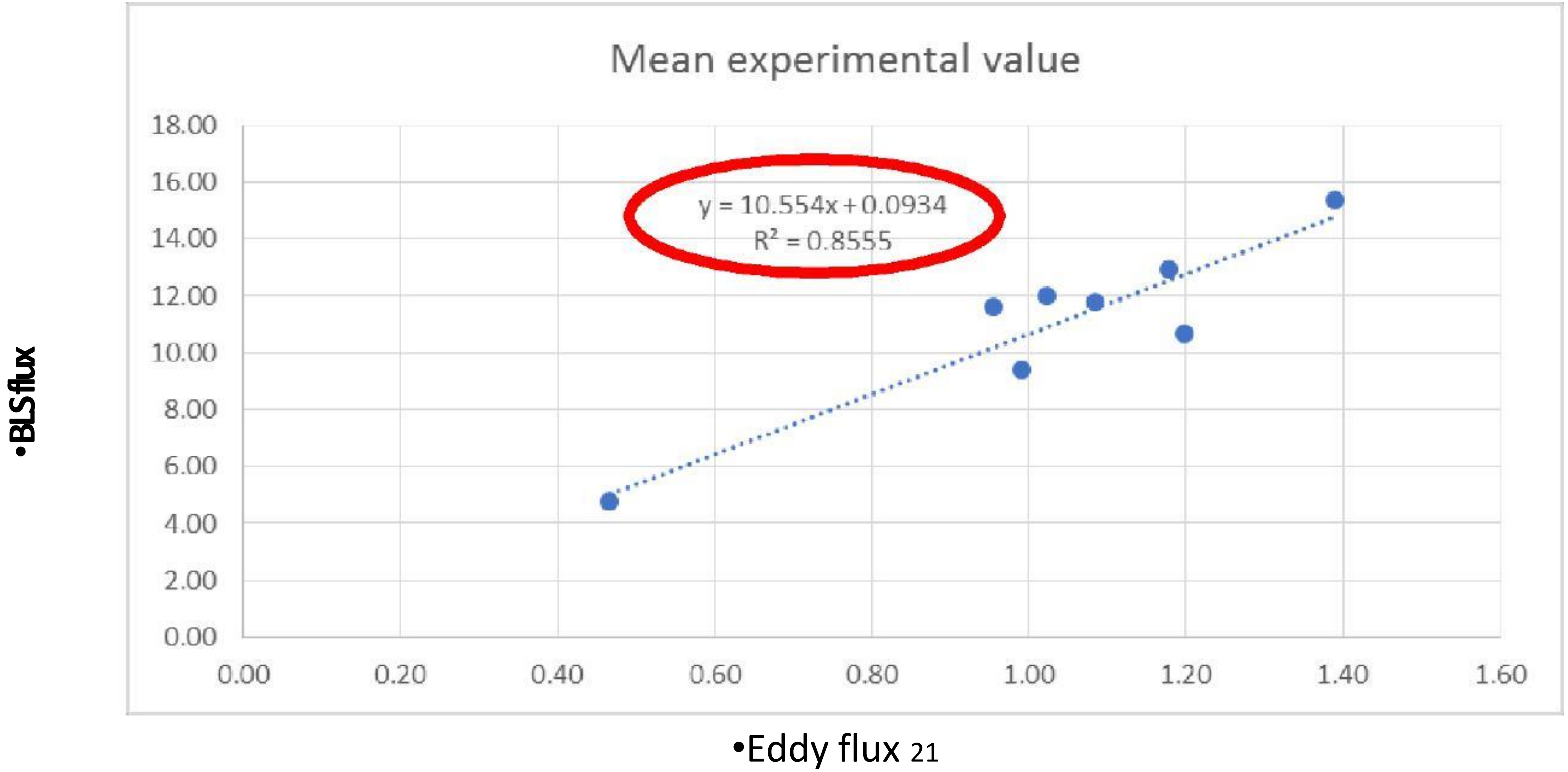


Compare Eddy and other flux:It shows roughly one order of magnitude too low EC fluxes

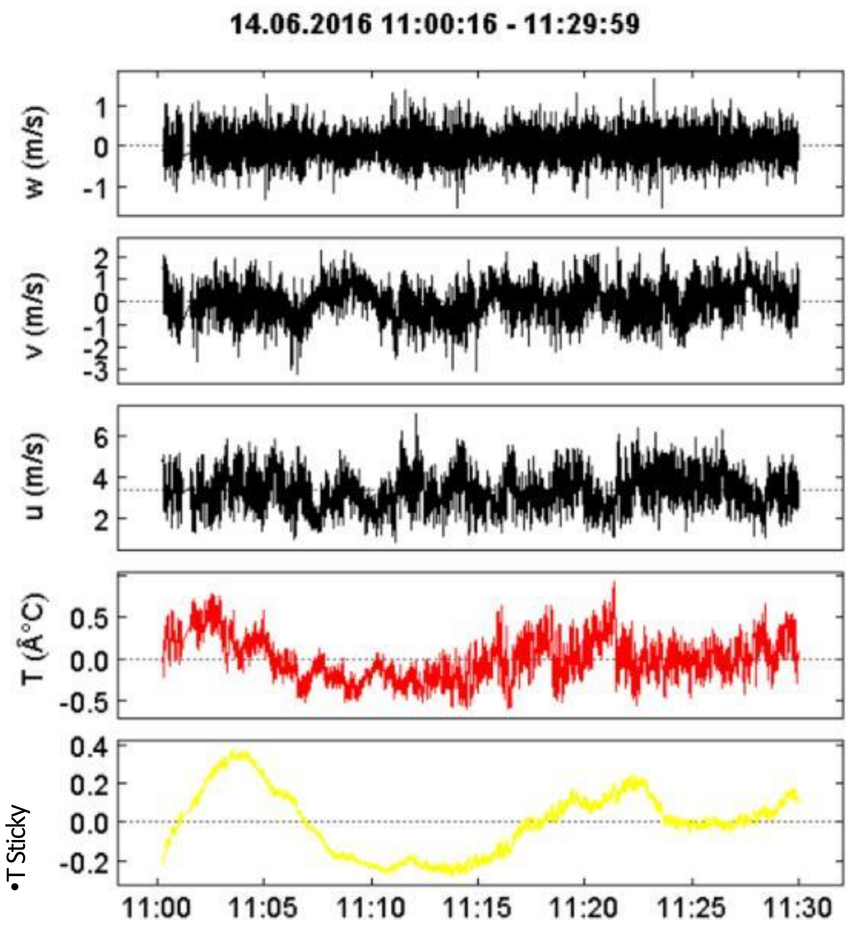
- The three bls based estimates



•Or in an x-y graph



Hypothesis:
decoupling effect at the inlet

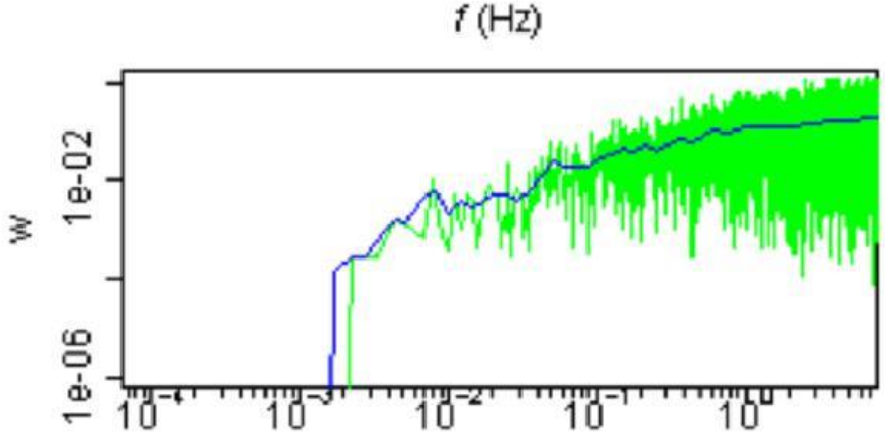


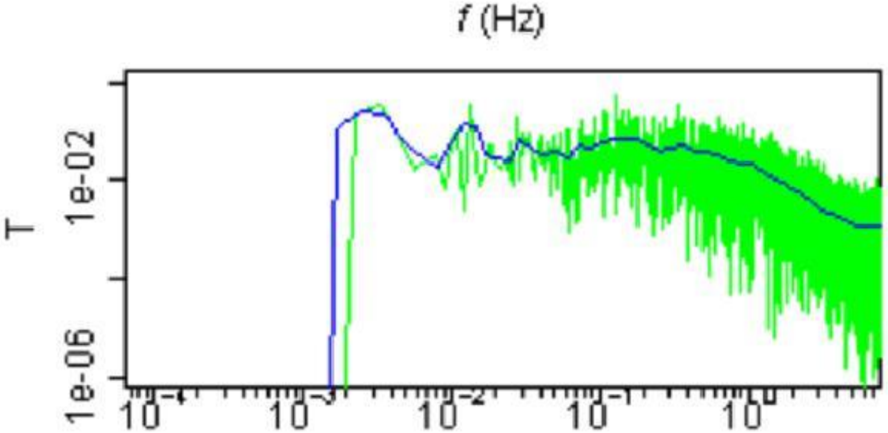
•Assume „Sticky“ or decoupled signal:

•10% of the signal passes undamped
•90% of the signal is damped with a
•recursive filter (low pass) and shifted

•R-code:data_int<-rawdata$T
•tempfraction<-0.1*
•data_int+0.9*recursive.filter(vector.s
•hift(data_int,750),700)
•rawdata$T<-tempfraction

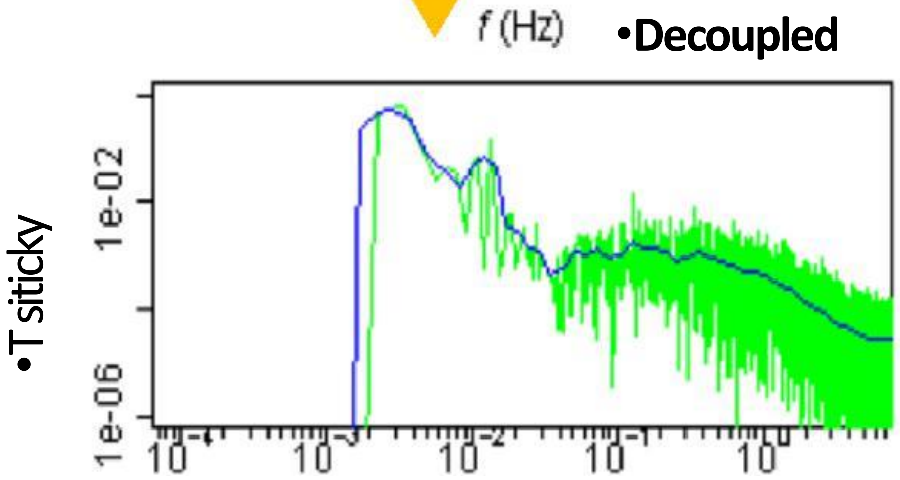
•Decouple effect on power spectra:





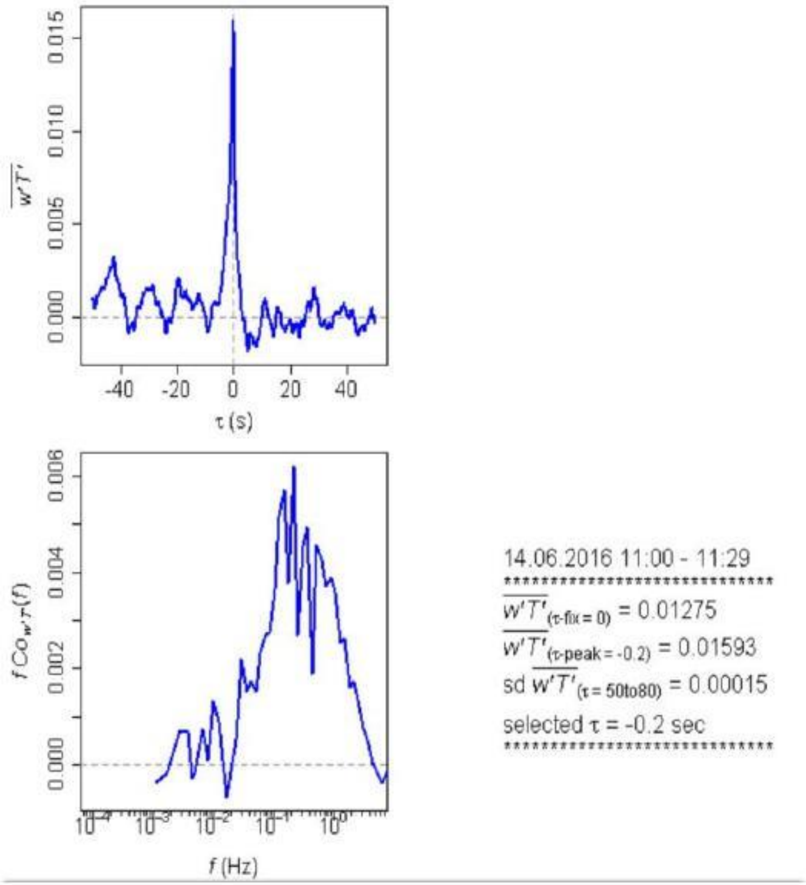
•Original

•Decoupled

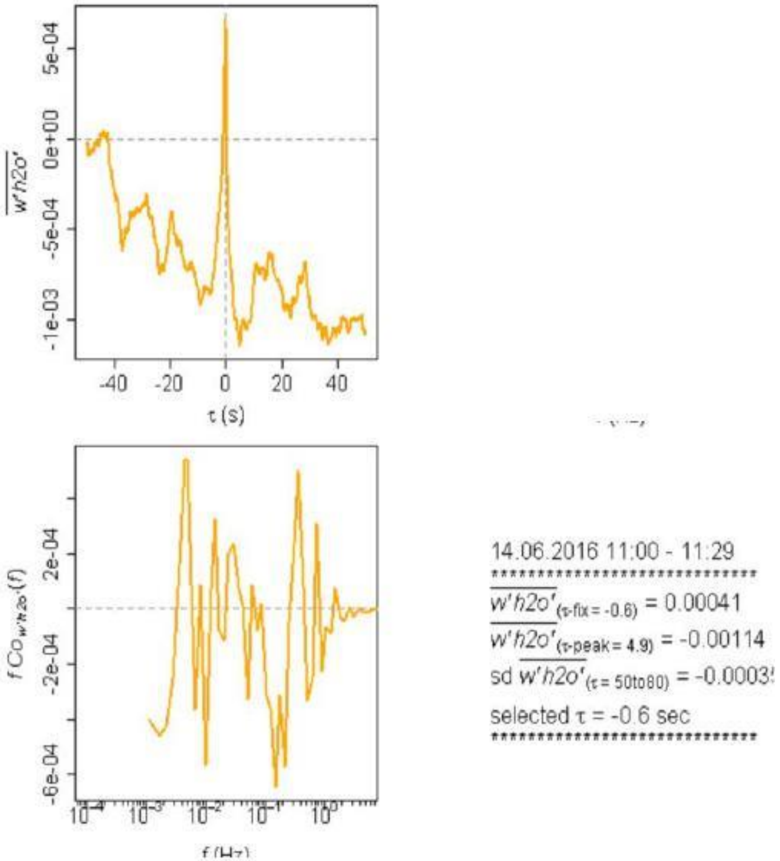


Effect on covariance functions

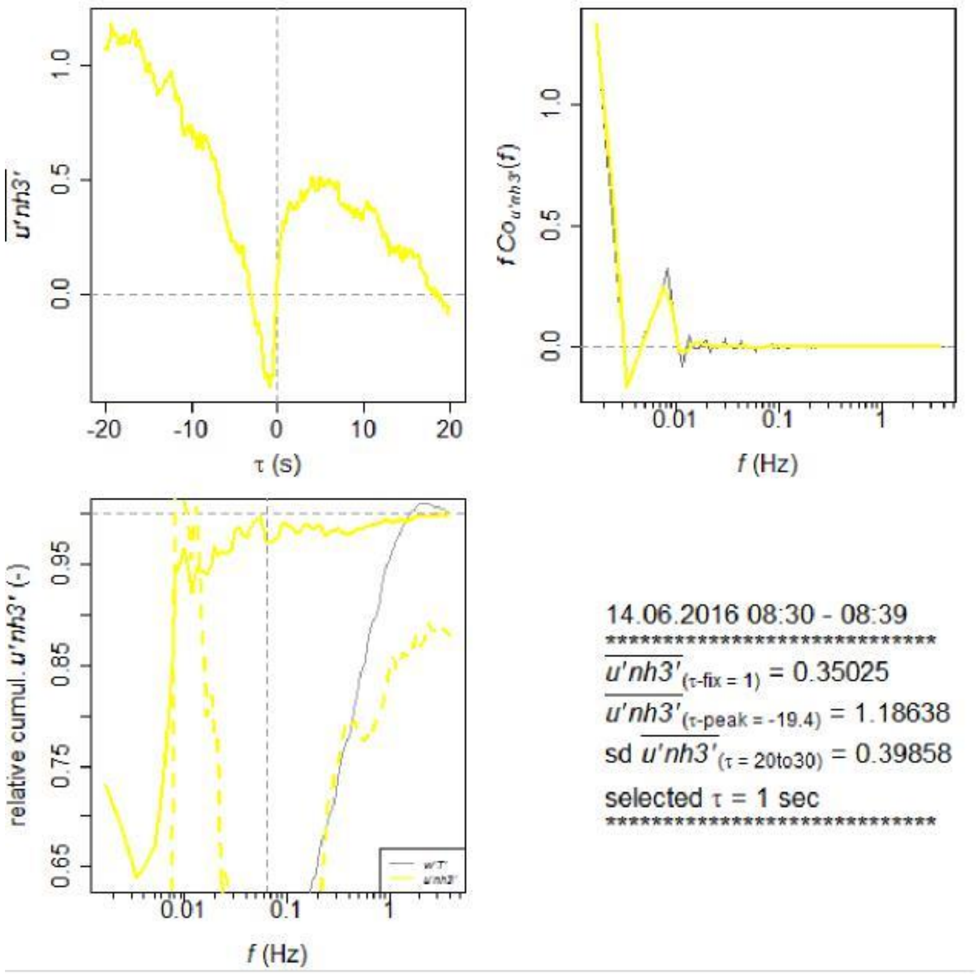
- **Original Heathflux**



Decoupled Heathflux (replaced in the program the water flux)

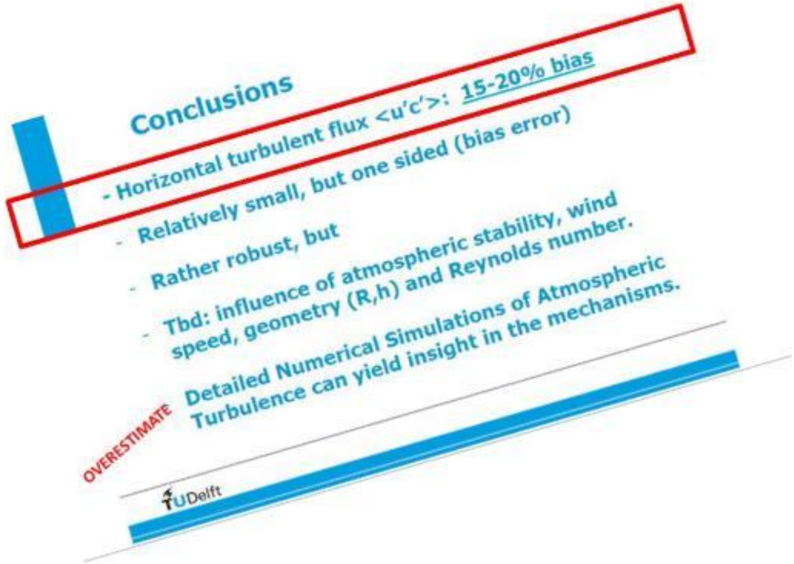


•horizontal….. u’c’ turbulent

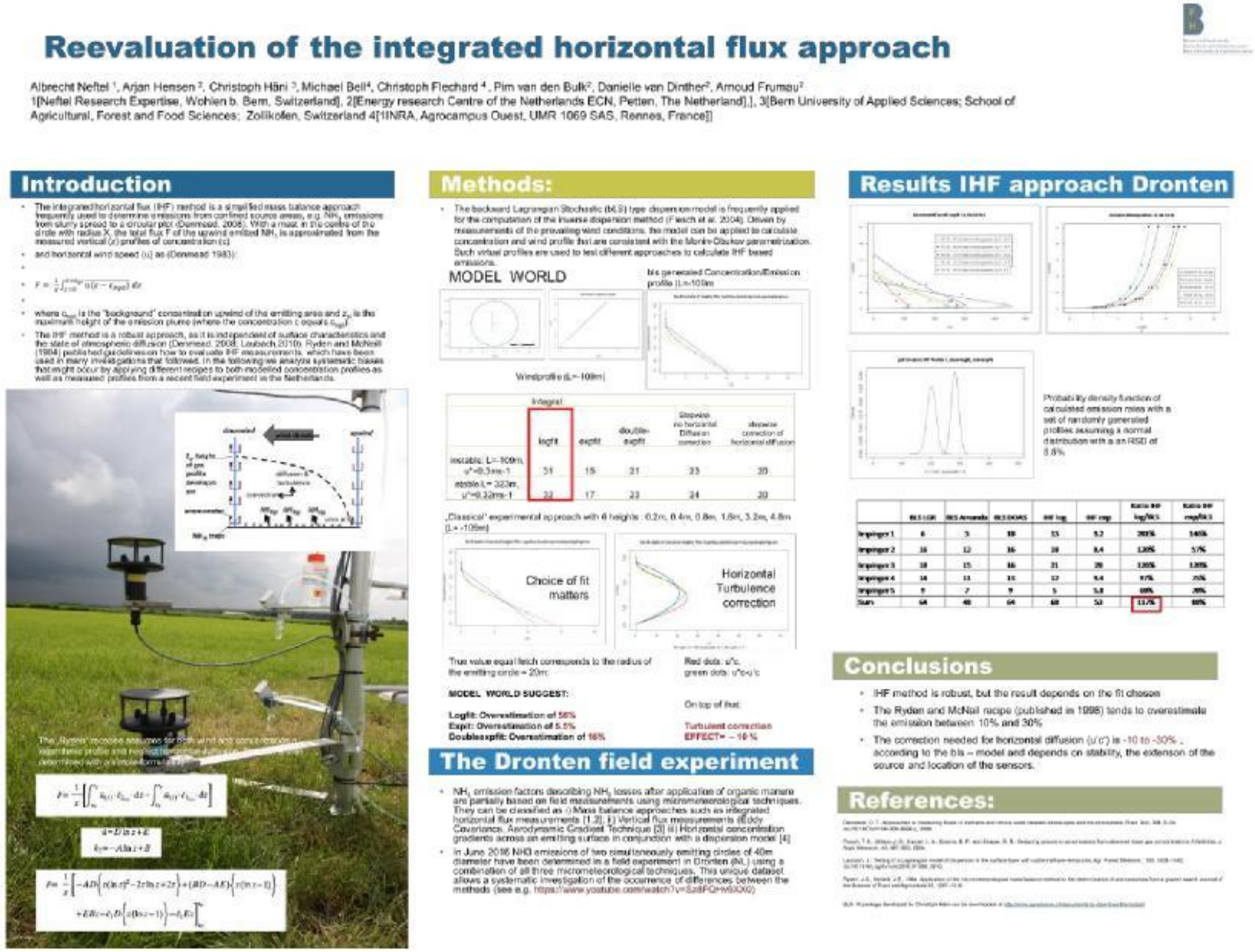


- Damping correction needed
- if vertical eddy flux = IHF flux
  - (use footprint)

•Then u’c’/uavgCavgg: about 10%



•Check poster for more!



- Poster in Session
- AS2.2/SSS9.26 - Air-Land
- Interactions (General Session)
- (co-sponsored by iLEAPS) (co-
- organized):

- EGU2017-4929
- 1 Reevaluation of the
- integrated horizontal flux
- approach by Albrecht Neftel
- et al.