

Testing the regionalization of a SVAT model for a region with high observation density

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Helmholtz Alliance:
Remote Sensing and Earth System Dynamics

Introduction

First steps done to assess the potential of assimilating high resolution Soil Moisture data from future Satellite Missions like Tandem-L into a SVAT model (Community Land Model, CLM):

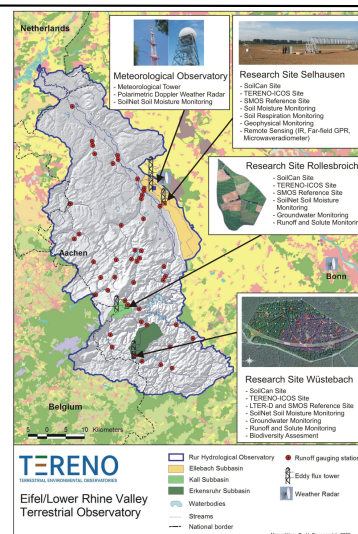
Single Point model runs on the regional scale for 2 test sites in TERENO^a area Eifel/Lower Rhine Valley done with:

- Half-hourly Climate Forcing from EC/climate station
- Best known soil texture
- Vegetation Data updated to compare with reference run

Model output to compare:

Heat Fluxes (sensible, latent, ground)

^aTERrestrial ENVironmental Observatories

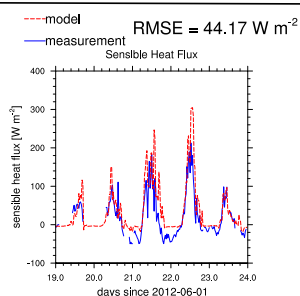
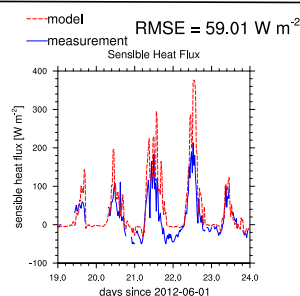


Rollesbroich, June 2012 (grassland)

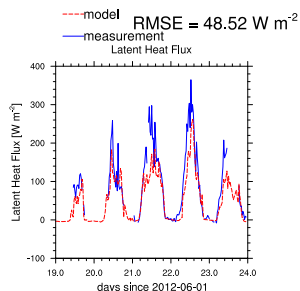
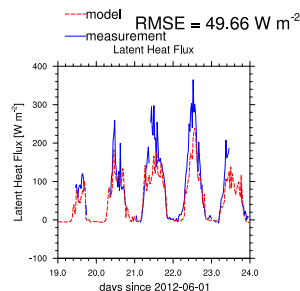
Standard CLM vegetation data

Vegetation data updated

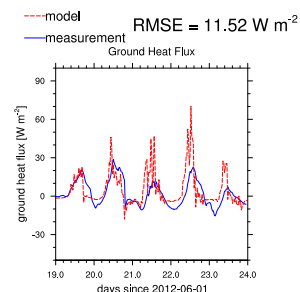
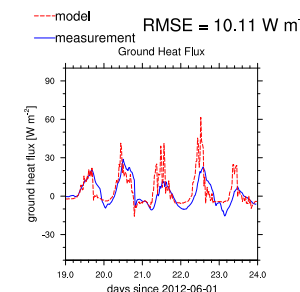
Sensible Heat Flux



Latent Heat Flux



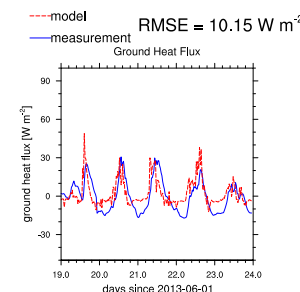
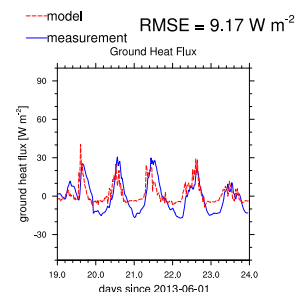
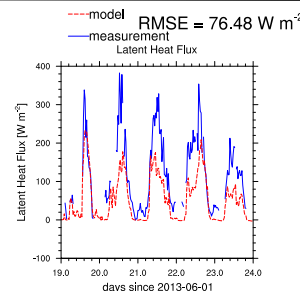
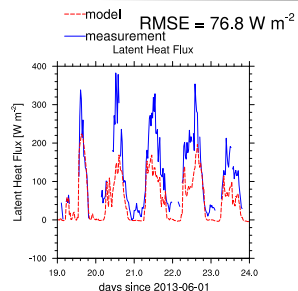
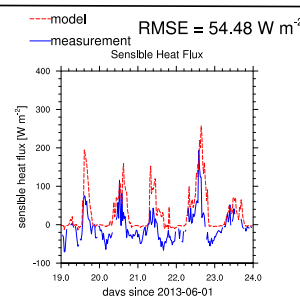
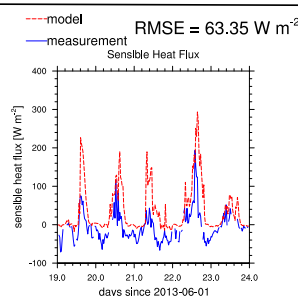
Ground Heat Flux



Selhausen, June 2013 (potato)

Standard CLM vegetation data

Vegetation data updated



Conclusions and Outlook:

- More realistic vegetation data results in significant improvement of modelled sensible heat fluxes
- No/marginal improvement in ground/latent heat fluxes (Reason: Soil Moisture?)
- After some more adjustments the next step is assimilation of Soil Moisture in order to reach further improvements

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