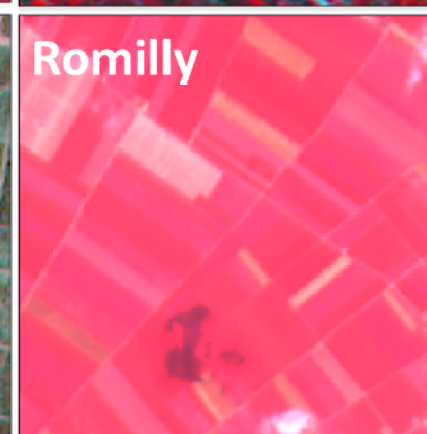
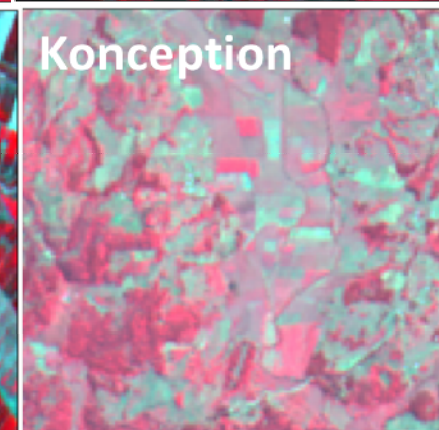
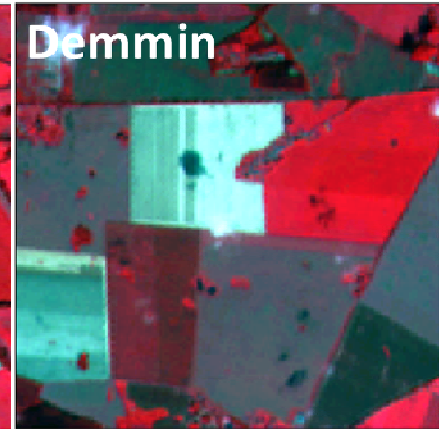
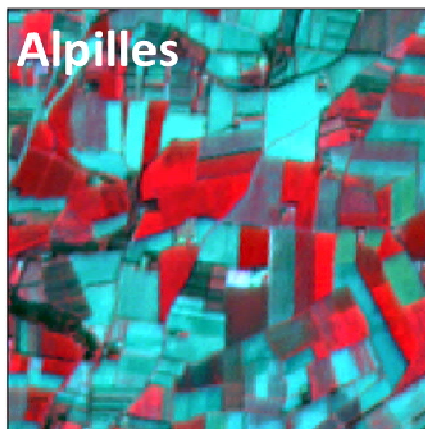


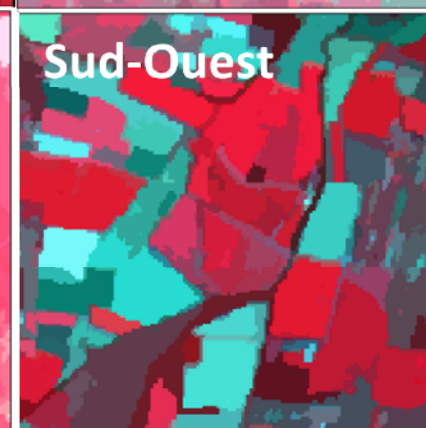
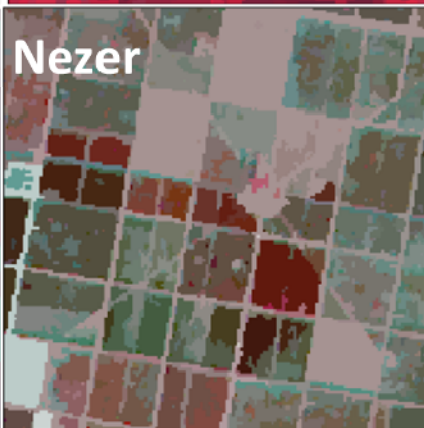
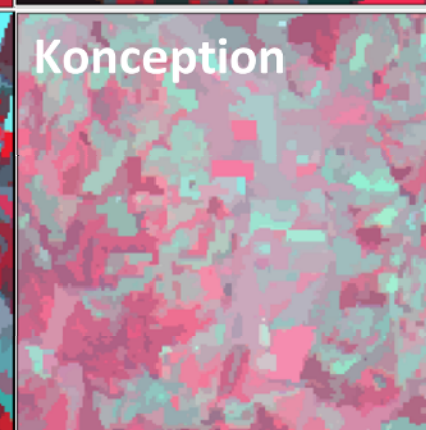
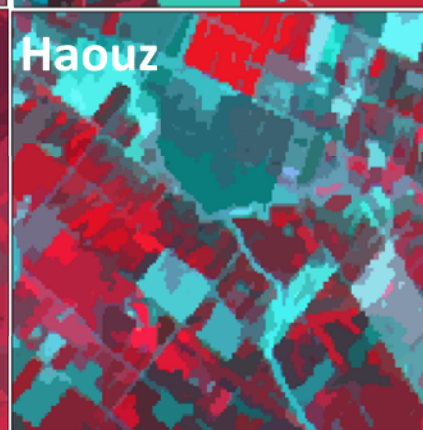
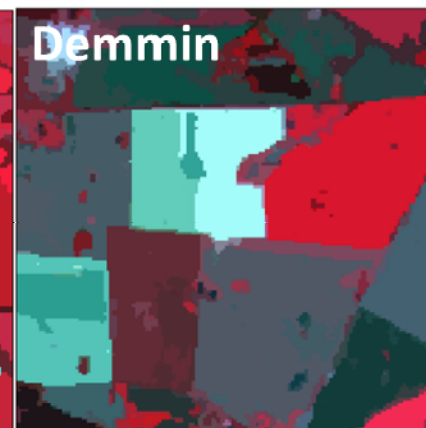
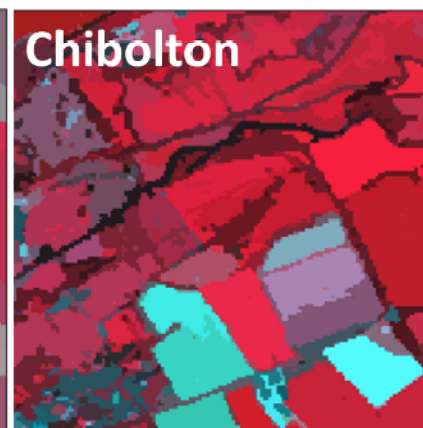
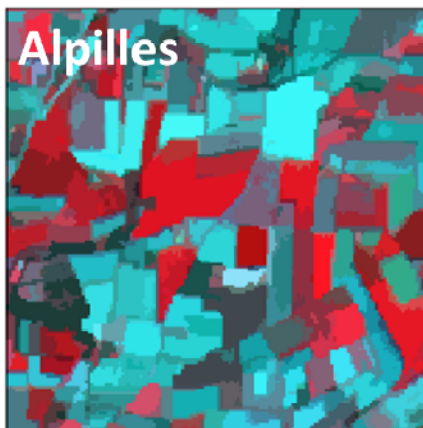
Development of biophysical products for PROBA-V Interest of 300m resolution

F. Baret, M. Weiss & L. Suarez

Interest of 300m resolution for Agriculture

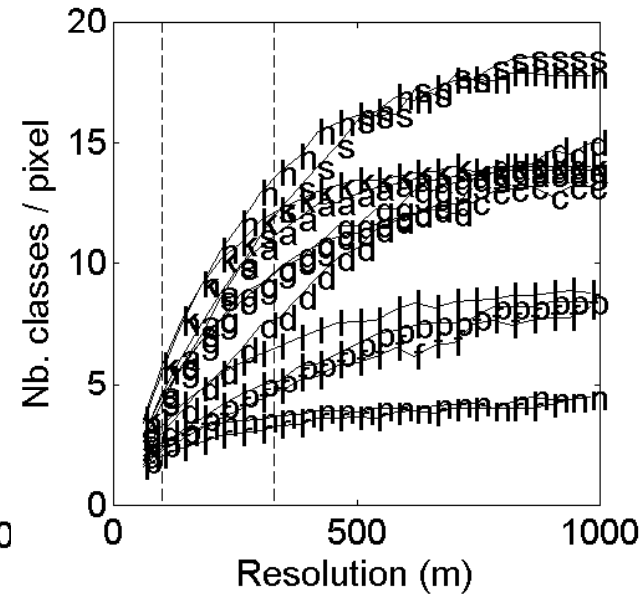
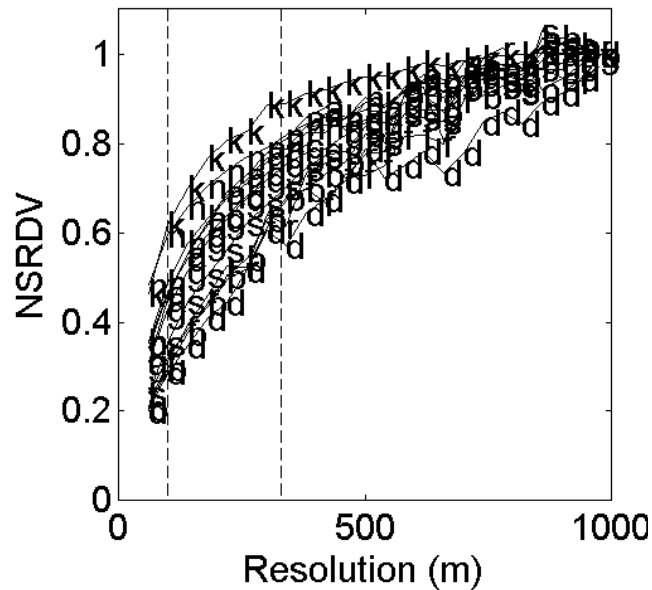


Patch/object identification



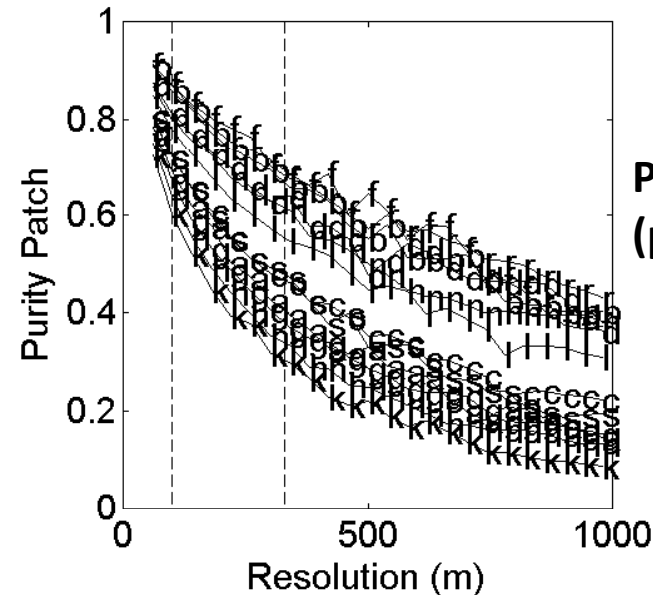
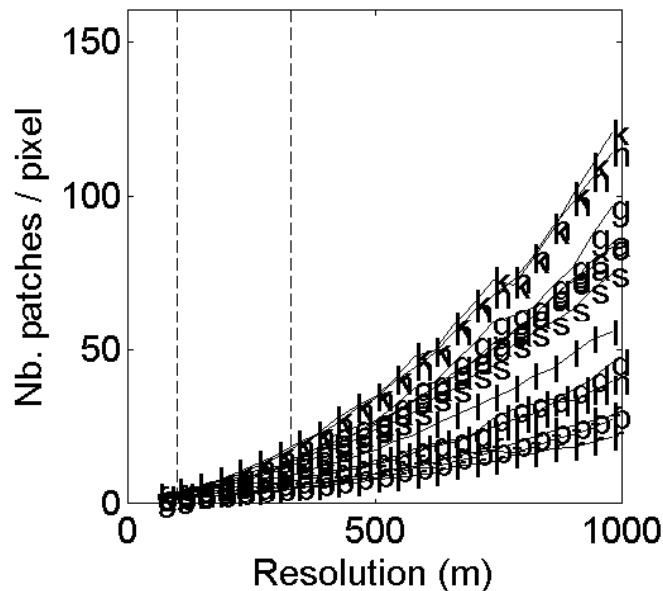
Impact of the spatial resolution

Variability
within
pixels:
Normalized
Standard
Deviation
(NSRDV)



Number of
classes per
pixel

Number of
patches per
pixel



Purity
(patches/classes)

Conclusion (obvious)

- **High spatial resolution is mandatory for agriculture applications (field/species level)**
 - Large differences between 1km and 300m resolution
 - **But large difference also between 300m and 100m!**
- **Impact on:**
 - classification
 - disaggregation
 - LAI estimates (non linearity)

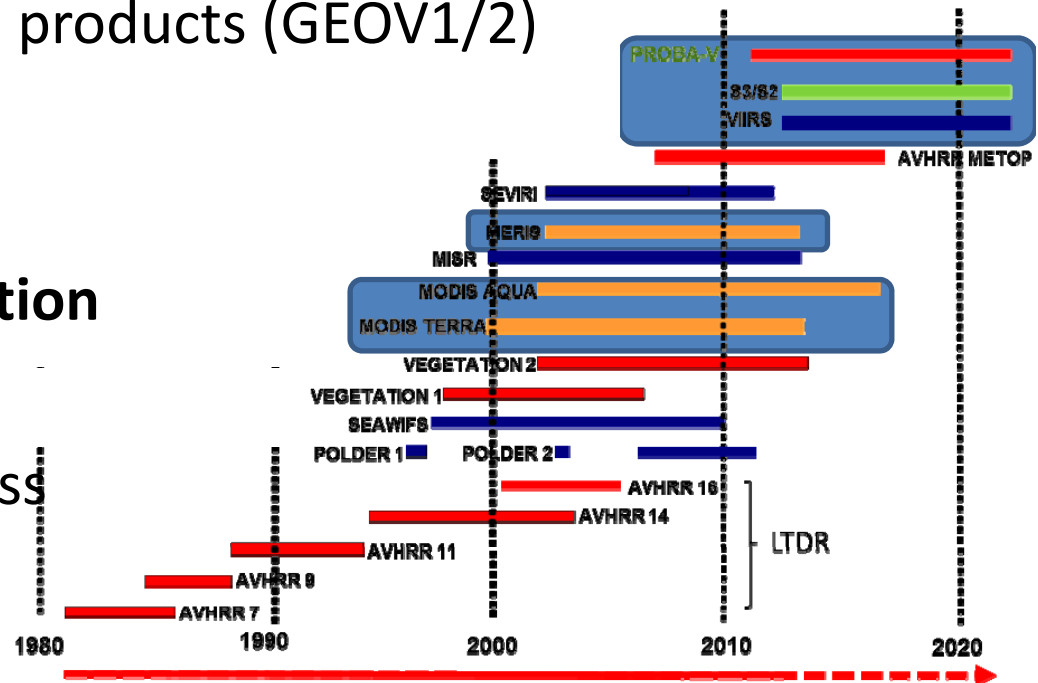
Development of LAI, FAPAR, FCOVER near real time products from PROBA-V

Objective: Develop biophysical products for PROBA-V

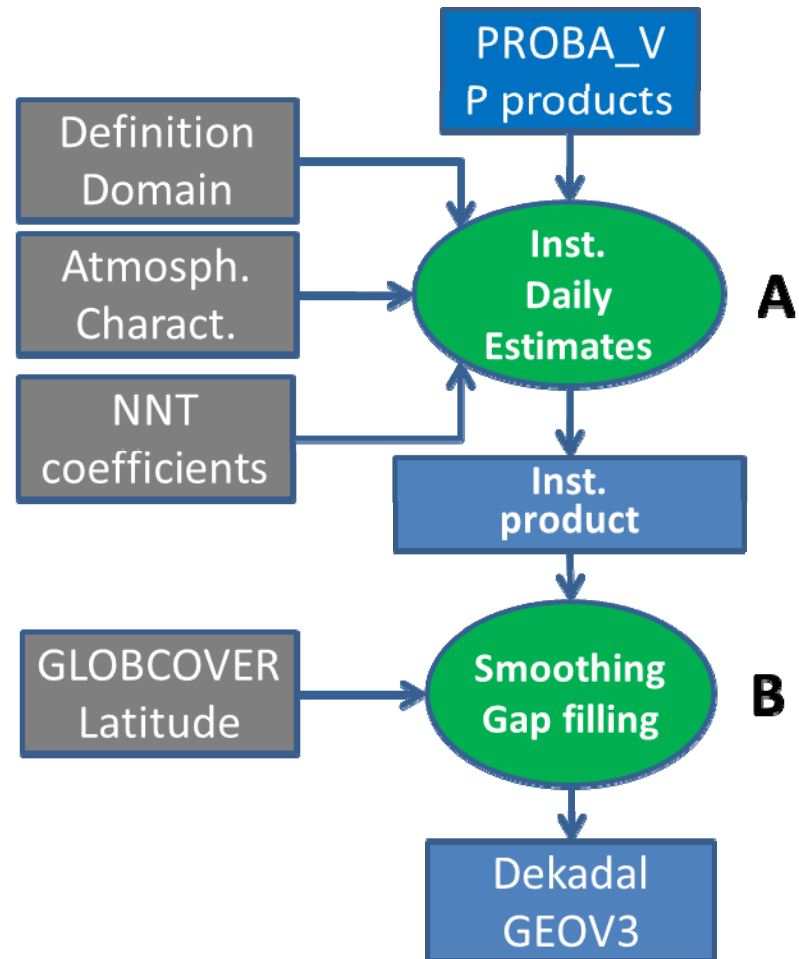
- LAI, FAPAR, FCOVER
- 10 days frequency
- Near real time
- Consistent with VEGETATION products (GEOV1/2)
- 300m resolution

Impact of higher spatial resolution

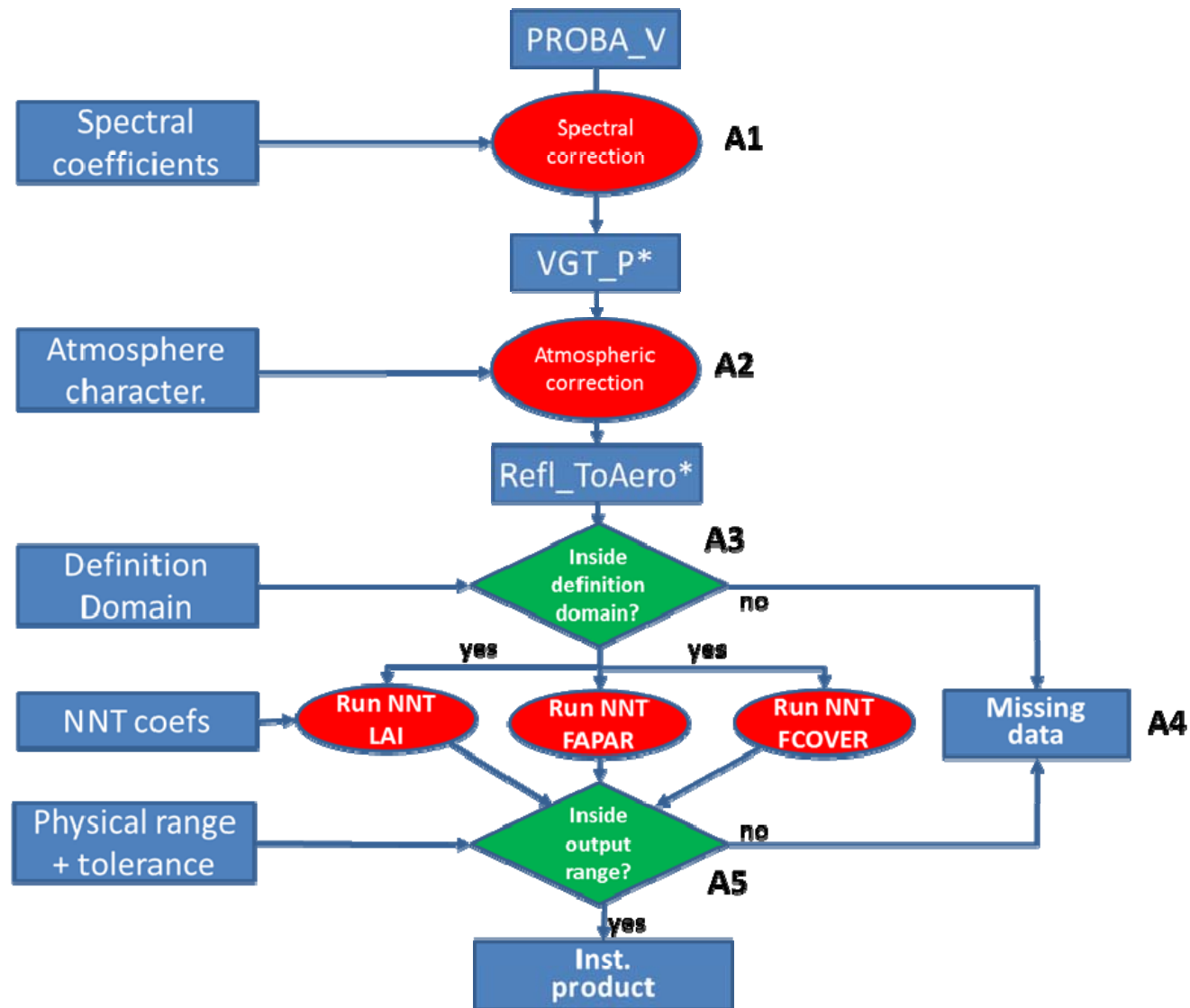
- No climatology available
- Climatology/pixel meaningless
- No use of SWIR



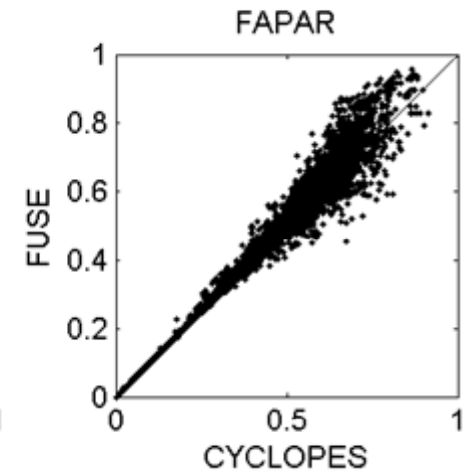
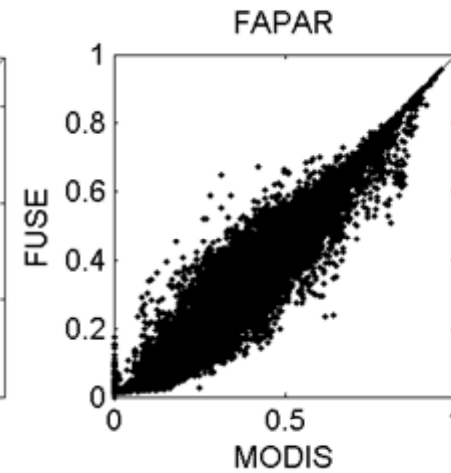
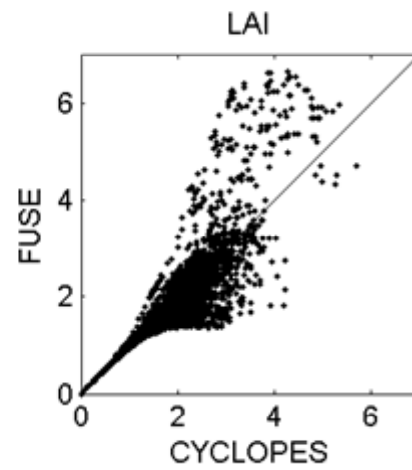
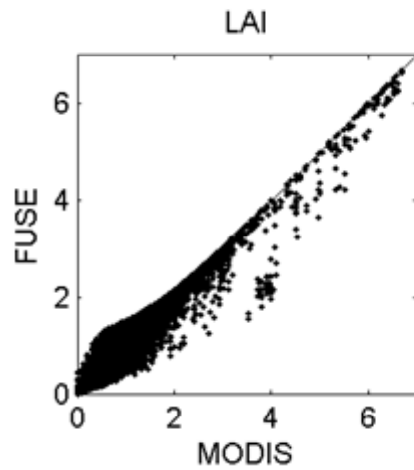
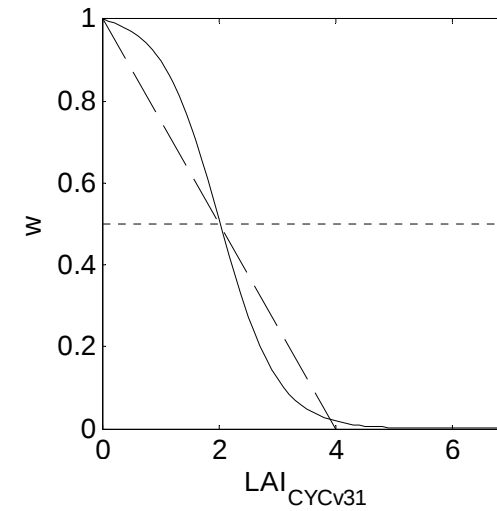
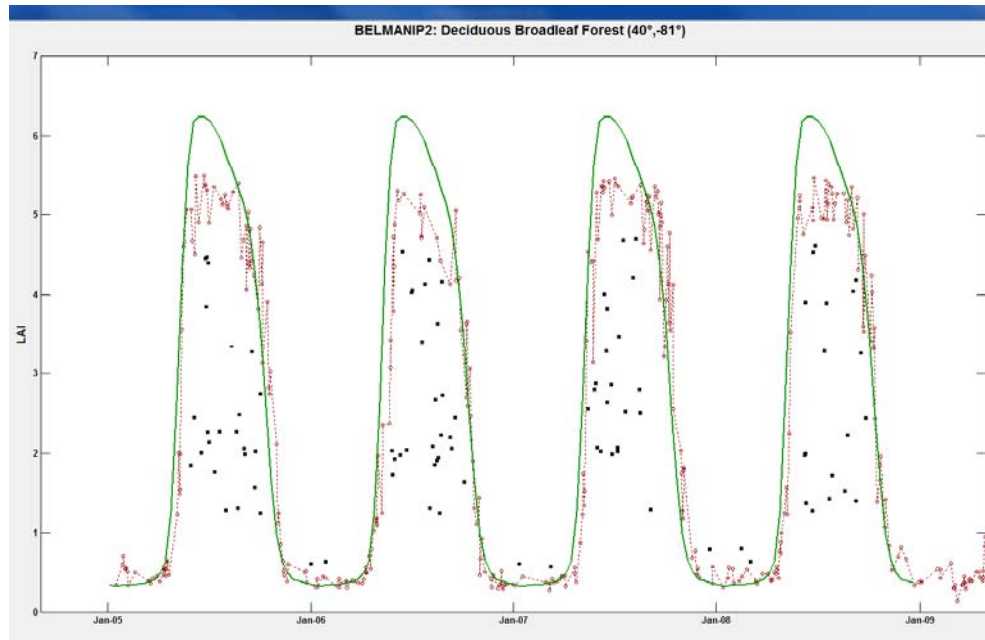
General principles



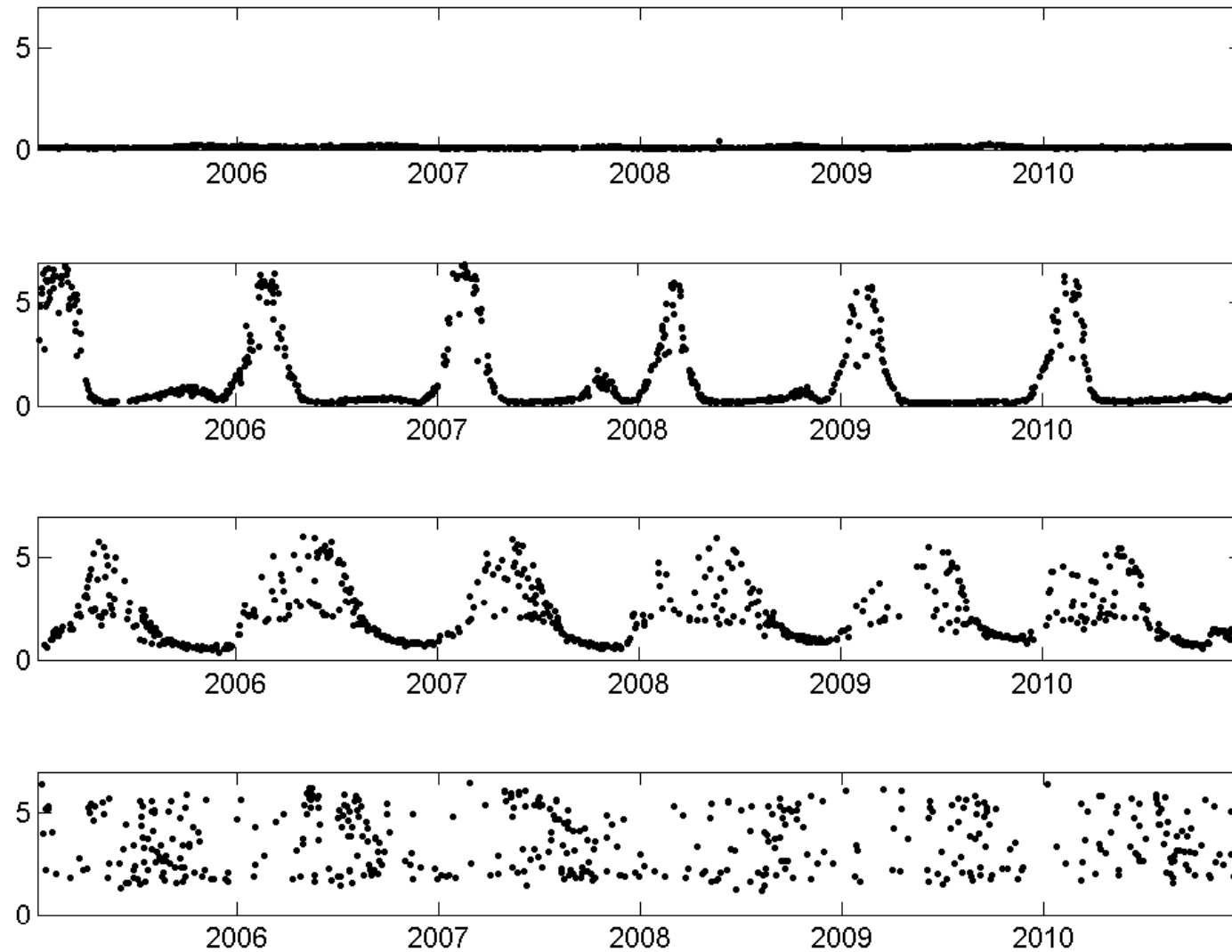
Step A: Instantaneous estimates



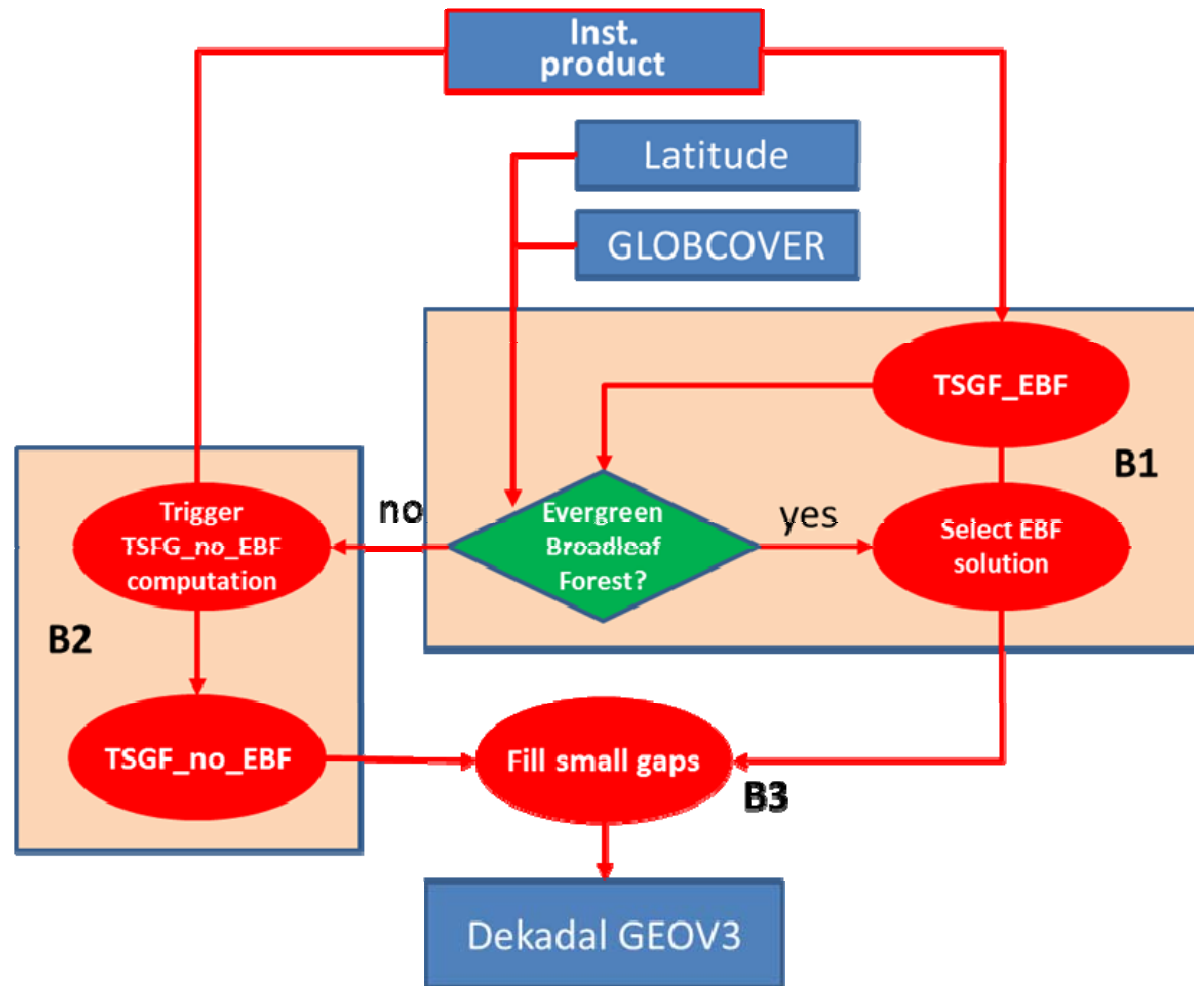
Learning from CYCLOPES and MODIS



Instantaneous estimates

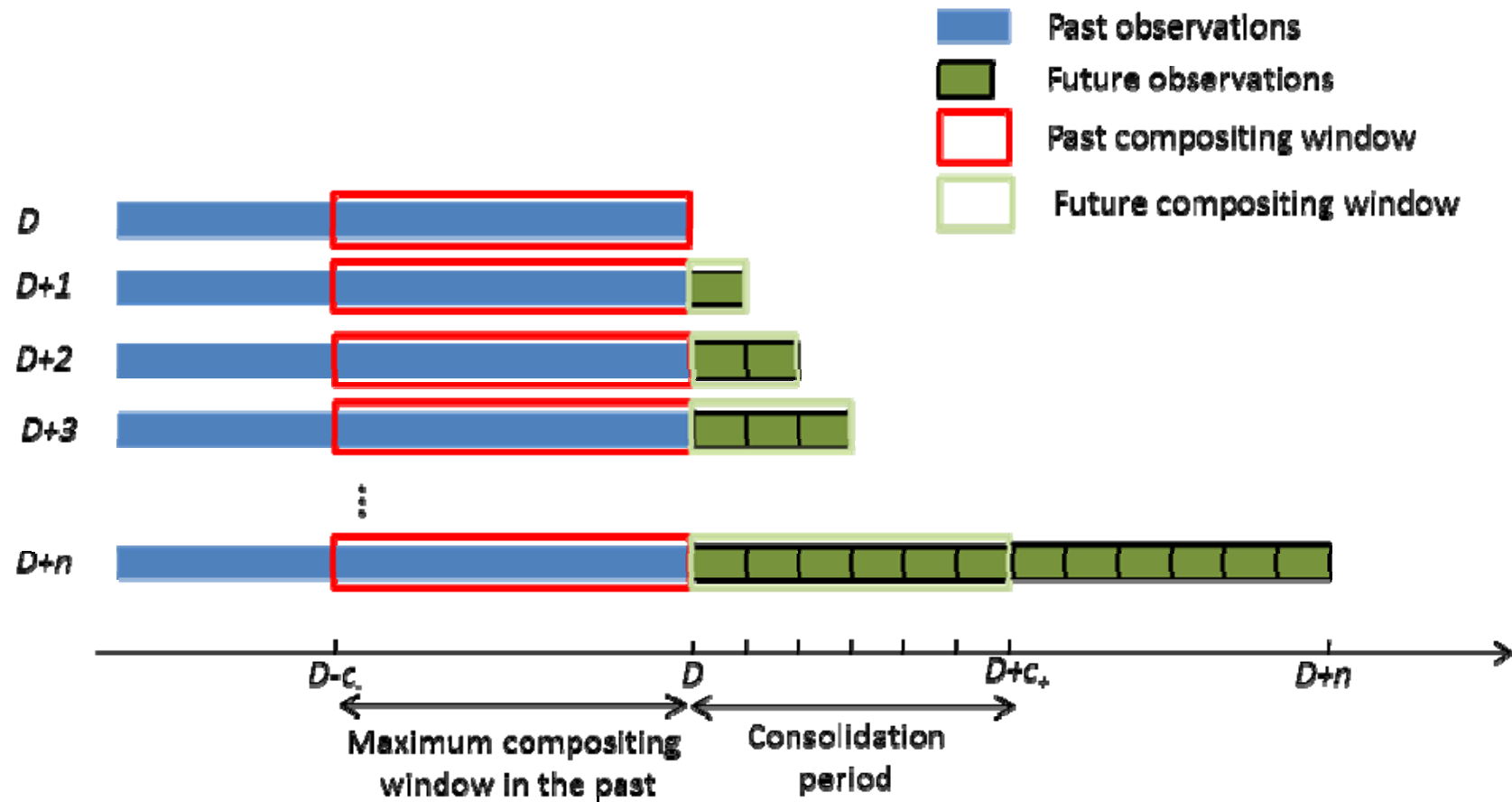


Step B: Compositing

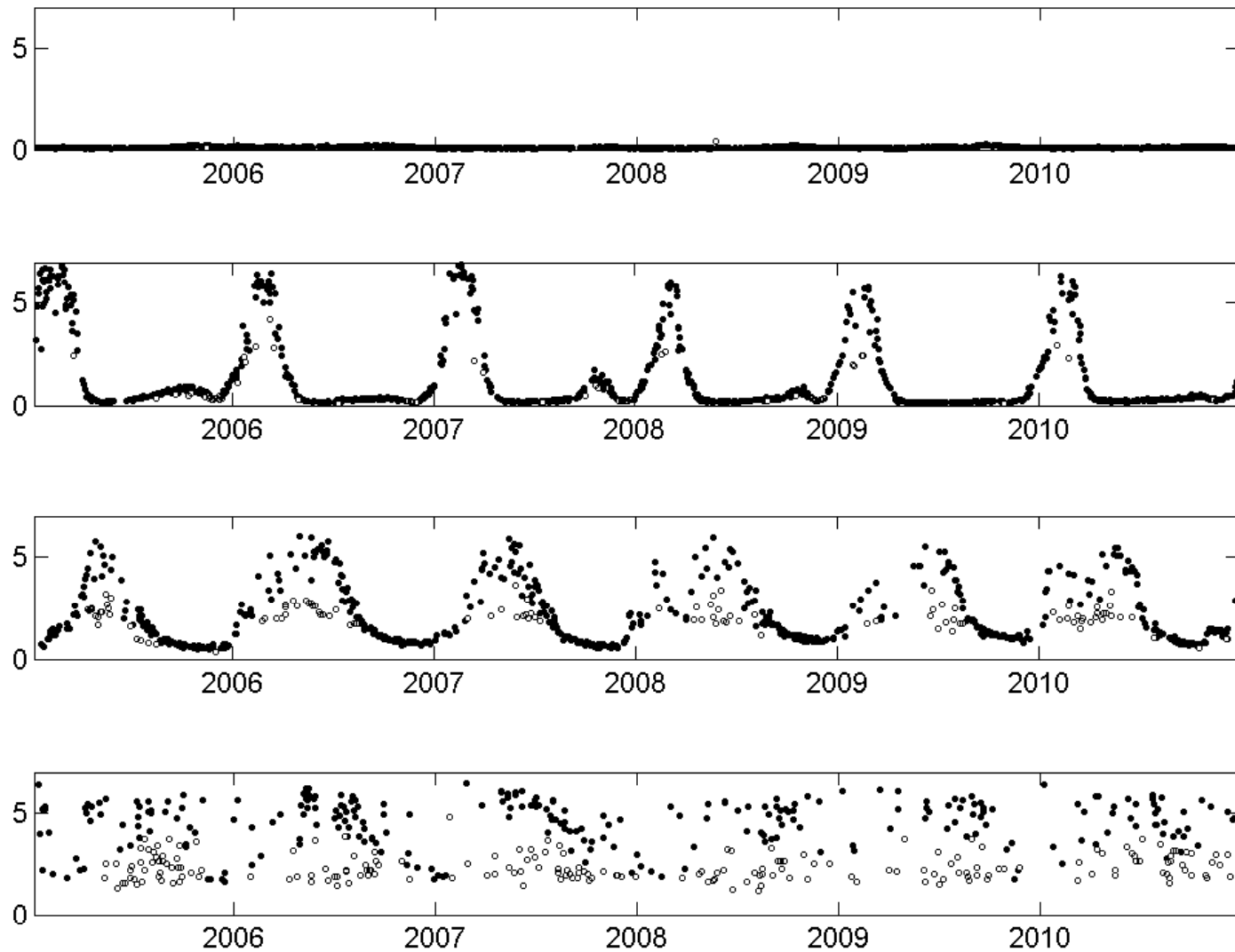


25 parameters to control step B

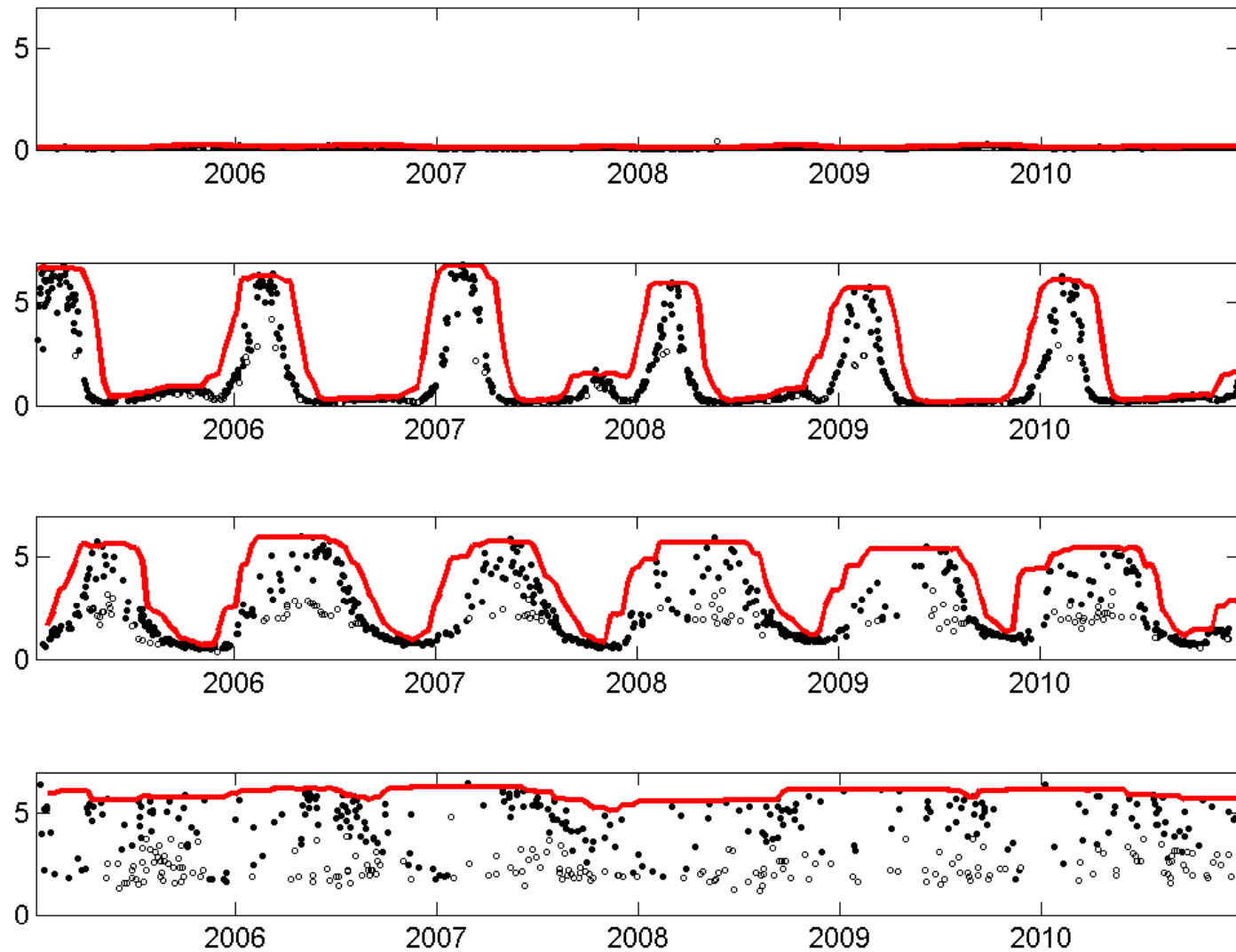
Near real time



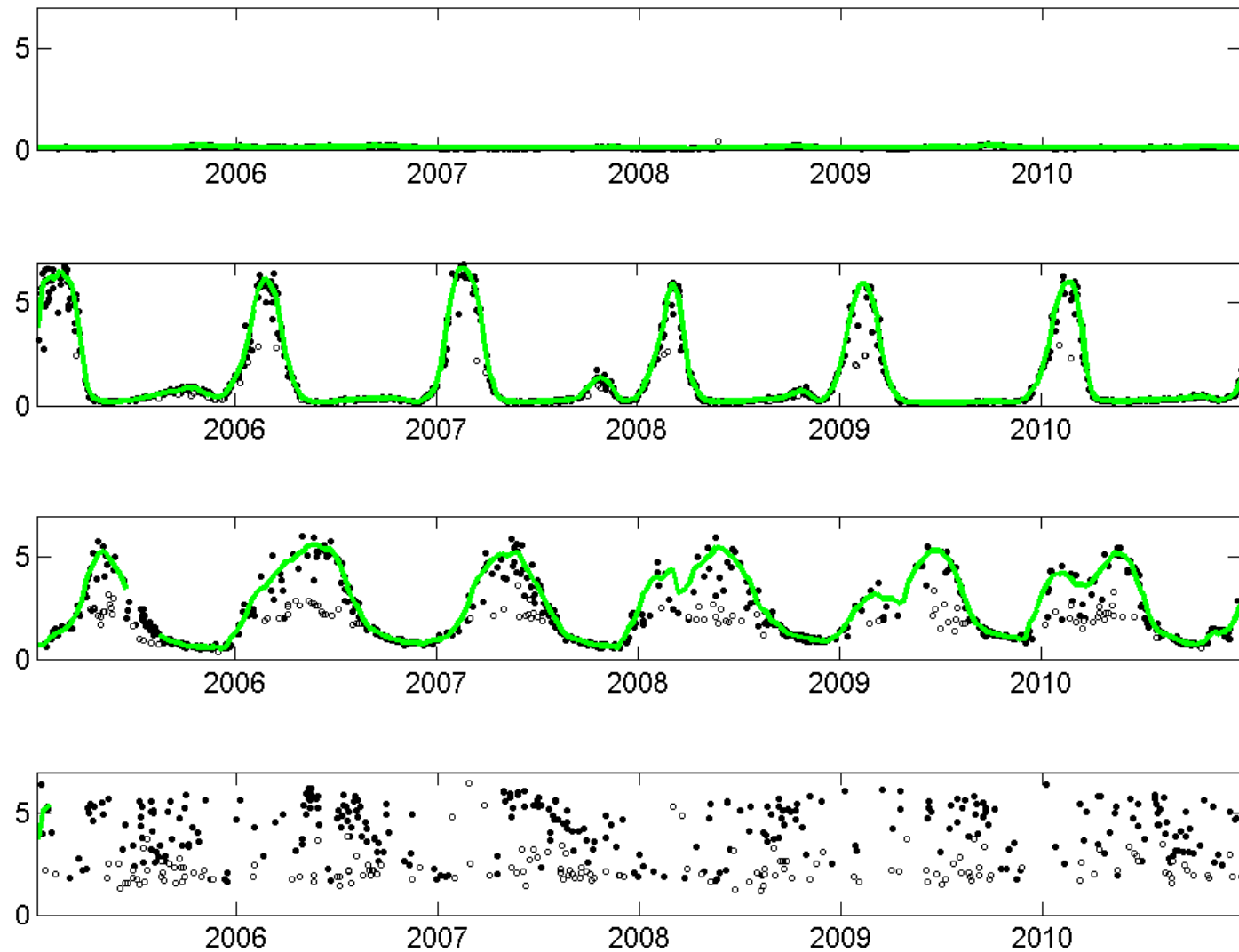
Compositing: eliminating outliers



Compositing: EBF case



Compositing: no_EBF case

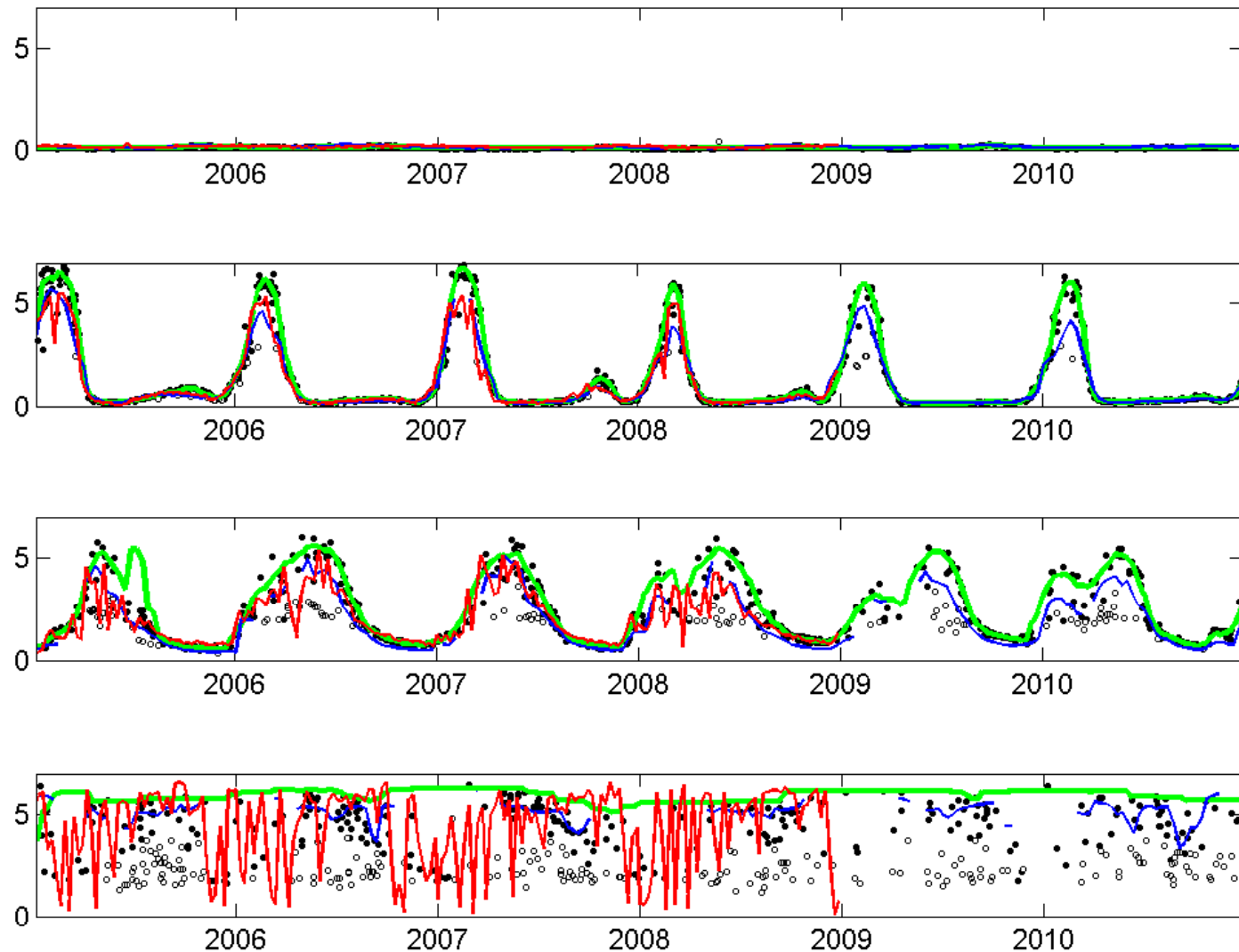


Compositing: Filling small gaps

GEOV3

GEOV1

MODIS



Conclusion

- **Associated quality indicators**
 - Flag
 - RMSE
 - Confidence interval from polynomial fit
- **Consistency between variables**
 - Same selection of observations used (mostly based on LAI)
- **Importance of the compositing step**
 - Without climatology
 - For short term projection
- **Needs to be done:**
 - Implementation of the algorithm
 - Verification/Validation
 - Checking consistency with GEOV2 (aggregation at 1km)
- **Updating the algorithm** when enough actual PROBA-V data will be available
- **Building a longer time series:** process back the MERIS archive?
- **Combination with S2** -> 20m observations every day?