Earth Observation based Plant Phenology in Europe

- Comparison of methods

Background

Plant phenology is important in the context of climatic change as it responds to changes in climate and human induced activities. Recently have Plant Phenology Index (PPI, see Jin 2015) been developed and it have been shown to be superior to NDVI in areas with higher LAI and in areas with snow cover. Changes in phenology derived from Earth Observation data can assist mapping ecosystem responses to climatic change and hence contribute

Aim

To compare phenology and trends in phenology for Europe derived from PPI (from MODIS) and TIMESAT versus phenology derived from NDVI and Harmonic Analysis of Time Series (HANTS).

Methodology

Seasonality parameters (start of seasons, end of season, length of season, small and large integrals, etc.) will be calculated for selected sites, regions and land cover classes in Europe. This will be compared versus each other and versus data from FLUXNET and other available ground based data sets.

Requirement: Skills in Remote sensing and GIS and an interest for phenology.

When: Spring 2017

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Links and references

Jin H., 2015. *Remote sensing penology at European northern latitudes*., PhD Thesis, Department of Physical Geography and Ecosystem Science, Lund University. (http://www.nateko.lu.se/sv/hongxiao-jin/publication/85831574-d517-41c1-99ab-bef8dd66b24f)

http://www.wur.nl/en/Publication-details.htm?publicationId=publication-way-343334323737
http://onlinelibrary.wiley.com/doi/10.1111/gcb.13168/abstract
https://github.com/ajwdewit/idl_adewit/tree/master/hants

http://web.nateko.lu.se/timesat/timesat.asp

TIMESAT for Processing Time-Series Data from Satellite Sensors for Land Surface Monitoring
(L Eklundh, P Jönsson - Multitemporal Remote Sensing, 2016)