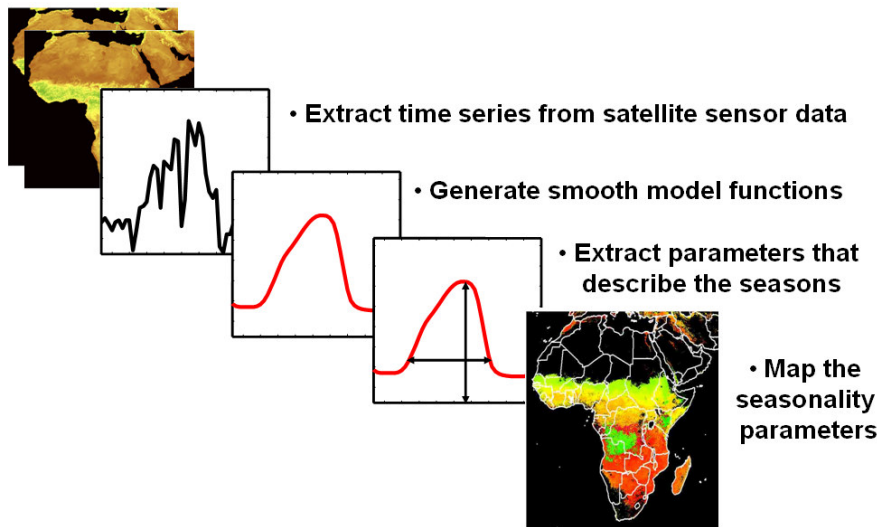


## TIMESAT - a tool for smoothing of time-series data and extraction of seasonality

TIMESAT has been developed for fitting smooth functions to noisy time-series of satellite sensor data and for extracting seasonality parameters. It has been used for a number of applications including improvement of data quality for satellite-driven carbon models, for studying environmental changes over time, for aiding data classification, and for extraction of phenological data from satellites. It is used in the North American Carbon Programme for data smoothing and extraction of phenology data from MODIS products. The general principle of TIMESAT is shown in the graph.



Main references for the program are:

Jönsson, P. and Eklundh, L., 2002, Seasonality extraction by function fitting to time-series of satellite sensor data, *IEEE Transactions on Geoscience and Remote Sensing*, **40**, 1824-1832.

Jönsson, P. and Eklundh, L., 2004, TIMESAT - a program for analysing time-series of satellite sensor data, *Computers and Geosciences*, **30**, 833-845.

Also see the web page and the latest software manual that describes the functionality of the updated version.

The program is freely available for the academic community. For more information and registration as a user, see:

<http://www.nateko.lu.se/personal/Lars.Eklundh/TIMESAT/timesat.html>