

# Earth Observation Monitor

## Features

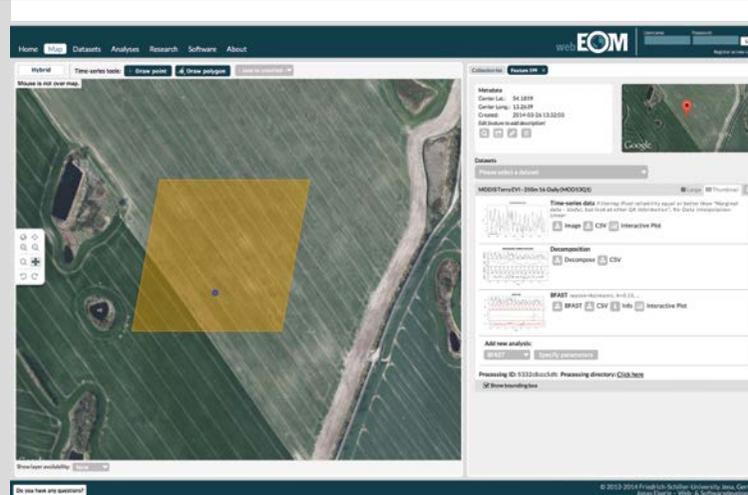
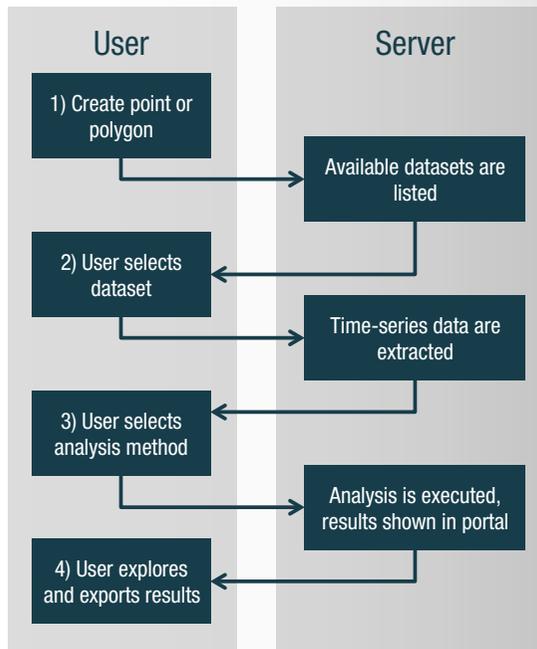
- Individual time-series filtering based on quality flags
- Time-series analysis for breakpoints, trends, and phenological parameters with individual parameterization
- Export of processed data for offline usage
- Sharing of analyses with other users

## Software

- **pyEOM:** Multi-Source Data Processing Middleware based on OGC web services
- **webEOM:** Web-based Geoportal
- **mobileEOM:** iOS/Android App

## Web-based Data Analysis

Time-series data is provided for an easy access and analysis with web-based technologies. Just go to the Earth Observation Monitor webportal and try it for your area of interest.



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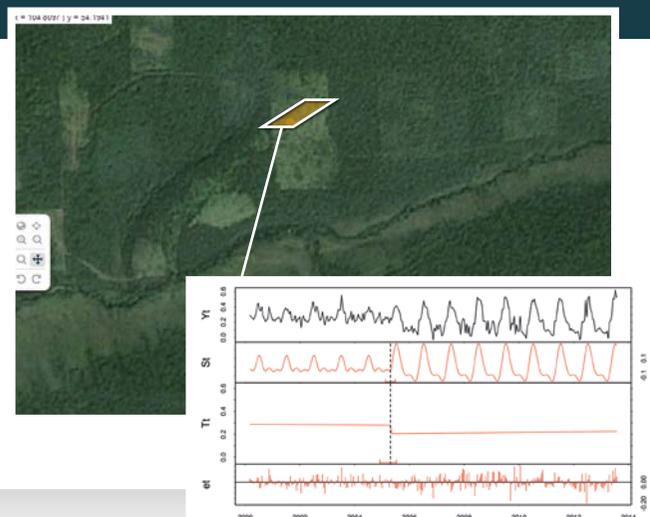
Mail: [jonas.eberle@uni-jena.de](mailto:jonas.eberle@uni-jena.de)  
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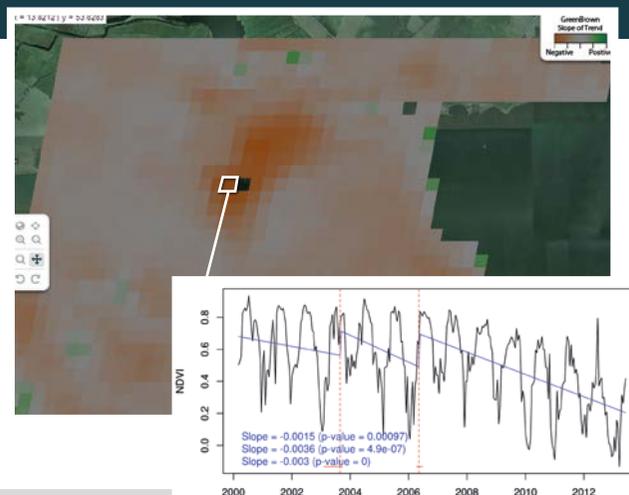


## Breakpoint detection: Detection of forest disturbance events



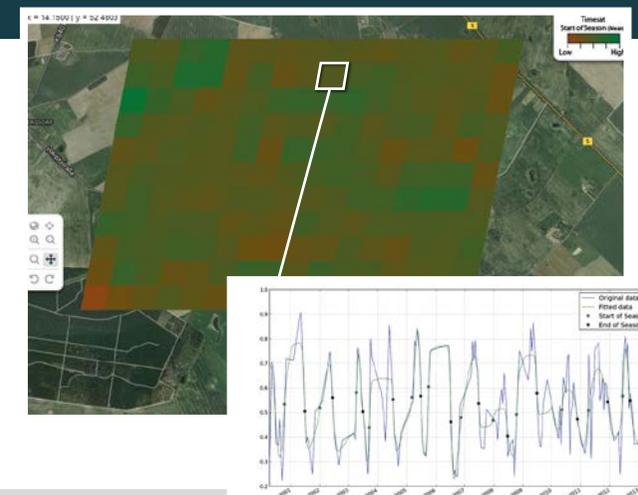
Bfast detects breakpoints in remote sensing time-series and enables the detection of points in time. The example shows logging activities detected in 2005 in the Taiga of Central Siberia followed by changing phenological cycling due to reforestation.

## Trend analysis: Nature conservation monitoring - Renaturation of marshlands



Decreasing vegetation trends were detected using the GreenBrown analyses function, indicating different magnitudes and periods of shrubland and forest degradation due to increasing ground water level (Anklamer Stadtbruch, Germany).

## Phenological parameters: Monitoring of net primary productivity



Phenological metrics from satellite time-series allow for the tracking of date-related (e.g. start of season) and biomass-related information of the vegetation (e.g. integral of growing season). The example shows the potential for monitoring agricultural productivity and bioenergy production.

### About

The Earth Observation Monitor (EOM) is a product based on the Siberian Earth System Science Cluster established at the Department of Earth Observation at the Friedrich-Schiller University Jena.

Time-series data from NASA MODIS sensor is provided for an easy access and analysis with web-based technologies. The analysis of time-series data is focused on the detection of breakpoints, trends and phenological parameters. With an automated data access and analysis process the user does not need to process the data.

In addition to the web portal a mobile application is provided for time-series analysis in the field based on the local GPS position.

### Available Data

#### MODIS Vegetation Indices (NDVI / EVI)

MOD13Q1	250m	16-day	selected regions*
MOD13C1	0.05deg	16-day	global

#### MODIS Land Surface Temperature (Day/Night)

MOD11A1	1km	daily	selected regions*
MOD11C2	1km	8-day	global

#### Landsat (in development)

NDVI	30m	yearly	global
EVI	30m	yearly	global

\*Only specific tiles are available at the moment. We are working on providing global availability. If you need specific tiles, please contact us.

### Technical Concept

