

# living planet symposium | BONN

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TAKING THE PULSE  
OF OUR PLANET FROM SPACE



EUMETSAT



ECMWF



EUSPA

## High quality food for AI - Sentinel-1 analysis-ready data (ARD) with interferometric coherence



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- The problem with SAR data
- What is KappaOne?
- Supported data layers and ways to access
- Examples and use cases

# The problem with SAR data



- How many Earth Observation companies use SAR data?
- How many Earth Observation companies use SLC SAR data and the interferometric derivatives?
- How many GIS and ICT companies use SAR data?
- SAR pre-processing is too complex for a large group of users.
- As a result, the users cannot feel the benefits and SAR data is under-used.



# What is KappaOne?



Ready to use Sentinel-1 SAR data layers:

1. Backscatter in VH and VV polarization as sigma0 or gamma0.
2. Repeat pass coherence in VH and VV polarization.
3. AI modelled Sentinel-1-based NDVI-compatible biomass estimate.
4. False color composites (with coherence and backscatter only).

Time series statistics about pre-defined parcel geometries.

# What is KappaOne?



- KappaOne – ideally one click (or one API command) integration and use.
- “Professional” calibration, thermal noise correction and speckle suppression.



# What is KappaOne?



- Try it out! 😊
- [https://kappaone.eu/ard\\_landing/](https://kappaone.eu/ard_landing/)



- Webmap
- WMS/WCS rasters to your desktop or web GIS
- Parcel level statistics as CSV files or JSON over API
- Query the time periods, areas and layers you need over API



Input for machine learning models and for human interpretation.

- For farm management software.
- Common Agricultural Policy subsidy checks.
- Situational awareness and landscape passability analysis for military use.
- Forestry and environmental services.
- Marine monitoring services.
- Various research use.
- ...wherever people benefit from SAR data, but don't want to do the processing by themselves.



- Let's try it:
- [https://map.kappaone.eu/ard\\_demo/](https://map.kappaone.eu/ard_demo/)
- QGIS import example



Thank you for listening!

Try it out: [https://kappaone.eu/ard\\_landing/](https://kappaone.eu/ard_landing/)

To order your area of interest, contact:  
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# VV coherence (VH coherence)



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Gray scale image for detection of landscape changes.





# VV backscatter (VH backscatter)



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Gray scale image for detection of the amount of vegetation and buildings.





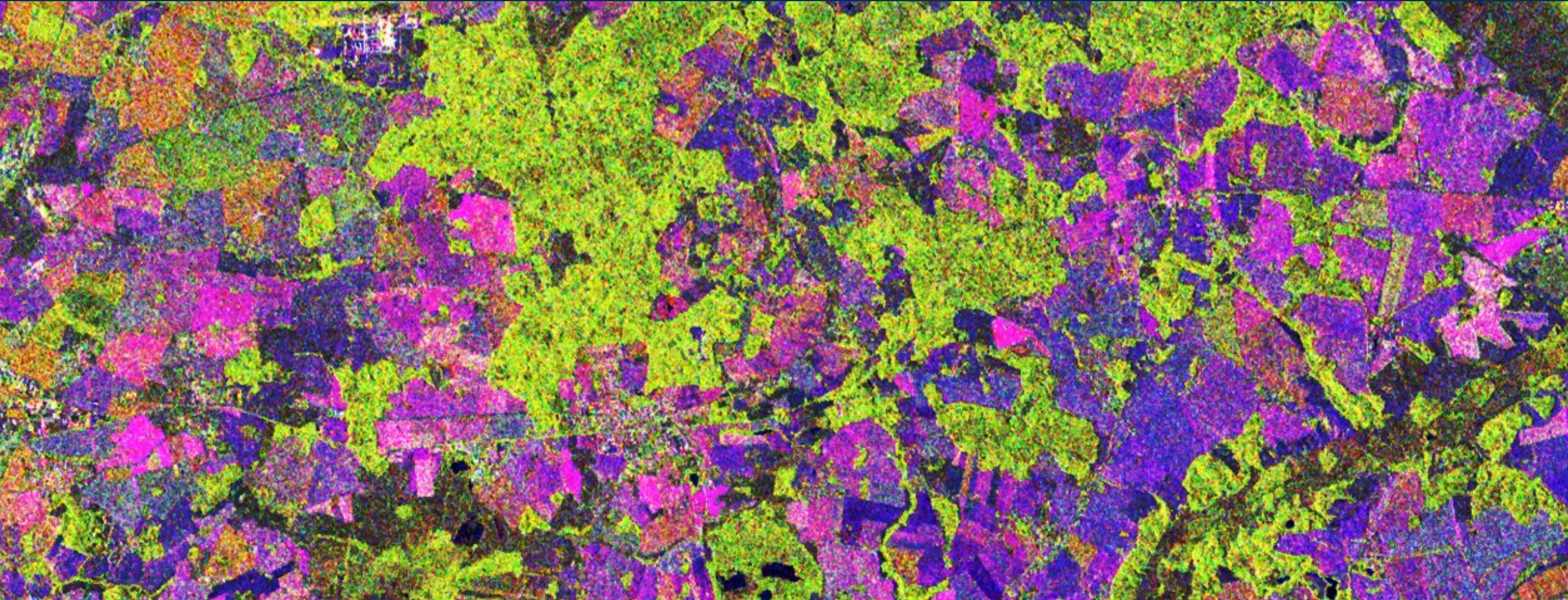
# VV coherence composite



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RGB image, where red is VV backscatter, green is VH backscatter and blue is VV coherence.





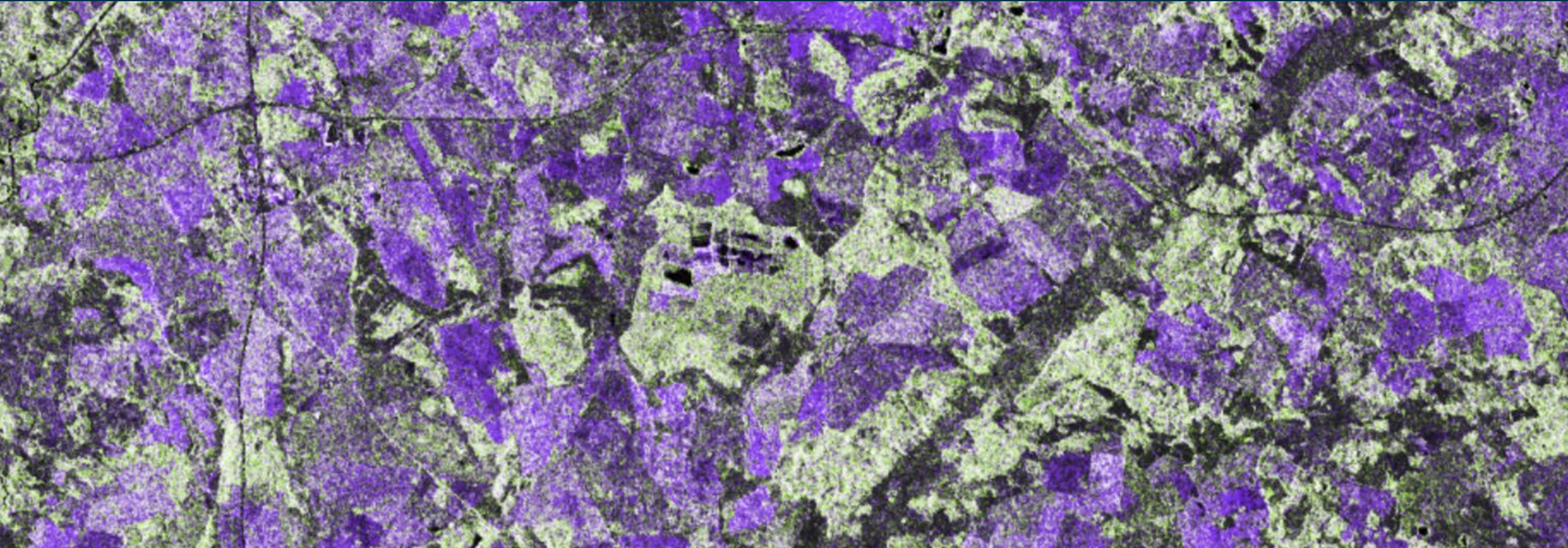
# S0 VH+VV/VH/VV composite



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RGB image, where red is the sum of VH+VV backscatter, green is VH backscatter and blue is VV backscatter.

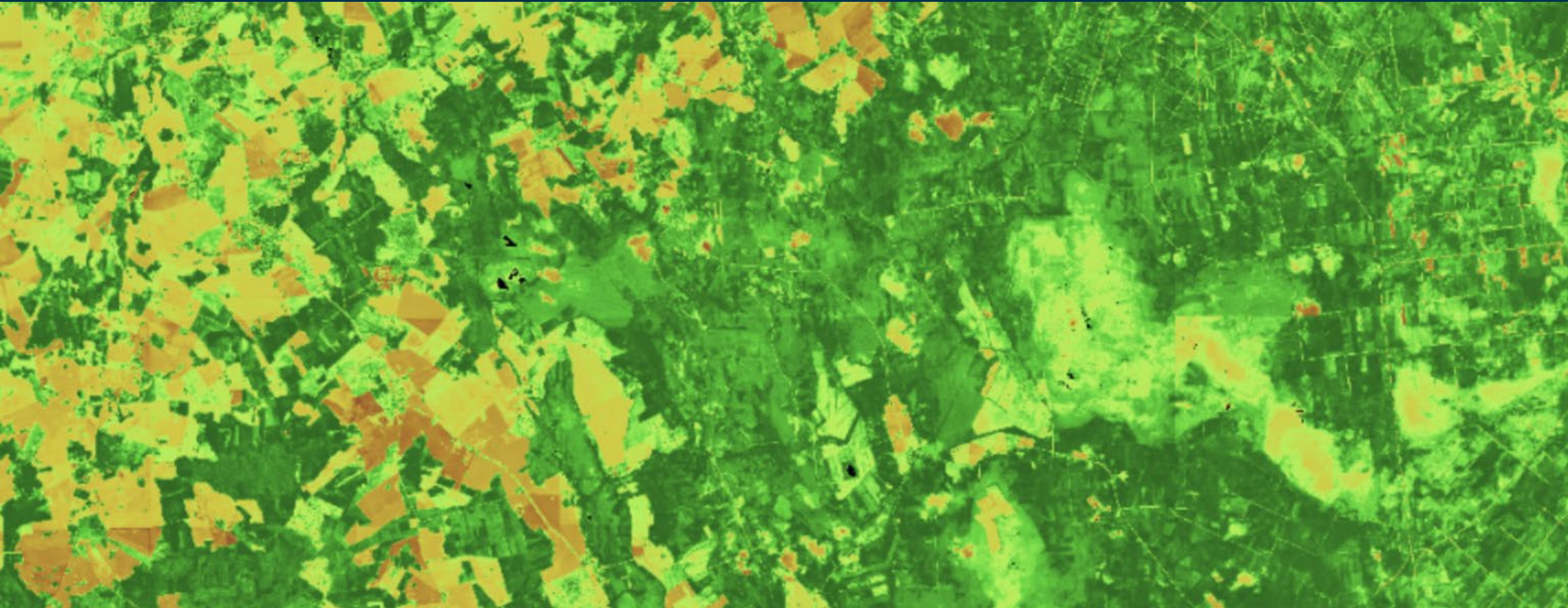




# Synthetic NDVI



NDVI-like raster image based on Sentinel-1 and Sentinel-2 time series.





# Parcel statistics



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For selected fields we provide statistical information, which can be viewed either in the web map or accessed directly via an API.

