

EO council - Earth Observation activities in the Netherlands



Who are we

Atmosphere

[Prof. dr. ir. S. Houweling](#)
[\(VU Amsterdam / SRON\)](#)



Cryosphere

[Dr. ir. Lu Zhou](#)
[\(Utrecht University\)](#)

Land

[Dr. Nandika Tsendbazar](#)
[\(Wageningen University\)](#)



Ocean

[Dr. ir. Renske Gelderloos](#)
[\(TU Delft\)](#)

Solid Earth

[Dr. Wouter van der Wal](#)
[\(TU Delft, chair\)](#)



Observers

SURF, Netherlands Space Office (NSO), eScience Cente, Dutch Research Council (NWO)
Space Research Organisation Netherlands

Our tasks

- Act as the central point of contact for EO research in the Dutch landscape of earth and environmental science, NWO, and relevant ministries (OCW, EZK, IenW).
- Act as the central point of contact for Dutch EO researchers in the atmosphere, cryosphere, land surface, ocean, solid Earth disciplines.
- Provide input and advice to scientific, government, and policy agencies and organizations, like NLSA (e.g. NLSA's Space Policy Advice to the Dutch government).
- Act as a platform for initiating and fostering discussions on current and future developments in EO and stimulating synergy and cooperation among EO disciplines and the broader scientific and societal community.

Summer school 2025

92 participants



EO SUMMER SCHOOL

2025

1-6 September 2025 |
Wageningen, the Netherlands
WICC



Data Science for Earth Observation:

Hands-on Training in Python, R and
Julia

Netherlands
Space
Office



Open Geo HUB
Connect • Create • Share • Repeat



EO Council

All lectures available online

EO Summer School 2025



Edzer Pebesma: Cloud based ana 37:46



Nico Lang: Learning From Global 26:55



Sander Houweling: Data use in re 42:34



Edzer Pebesma: Raster and vec 1:26:35



Nico Lang: Learning Representati 33:59



Leandro Parente: Monitoring glob 30:43



Yu Feng Ho: Introduction of clo 1:27:09

EO lecturers

- Sander Houweling (Free University Amsterdam)
- Ralf Kohlhaas (SRON)
- Jochen Landgraf (SRON)
- Deborah Stein Zweers (KNMI)
- Paco Lopez Dekker (TU Delft)
- Meiert Grootes (eScience Center)
- Lu Zhou (Utrecht)

MSc Programme	Faculty / Department	University
Geo-Information Science and Earth Observation	Faculty of Geo-Information Science and Earth Observation	University of Twente
Geo-Information Science	Environmental Sciences Department - GRS	Wageningen University & Research
Earth Observation (discipline under Earth, Climate & Technology MSc)	Faculty of Civil Engineering and Geosciences	Delft University of Technology
Earth Surface and Water	Faculty of Geosciences	Utrecht University
Climate Physics	Institution of Marine and Atmosphere Utrecht	Utrecht University
Earth Science, Earth and Climate; Geographical Information Systems	Faculty of Beta Sciences / Earth Science	VU Amsterdam
Earth Sciences - Earth System Science		Univ of Amsterdam

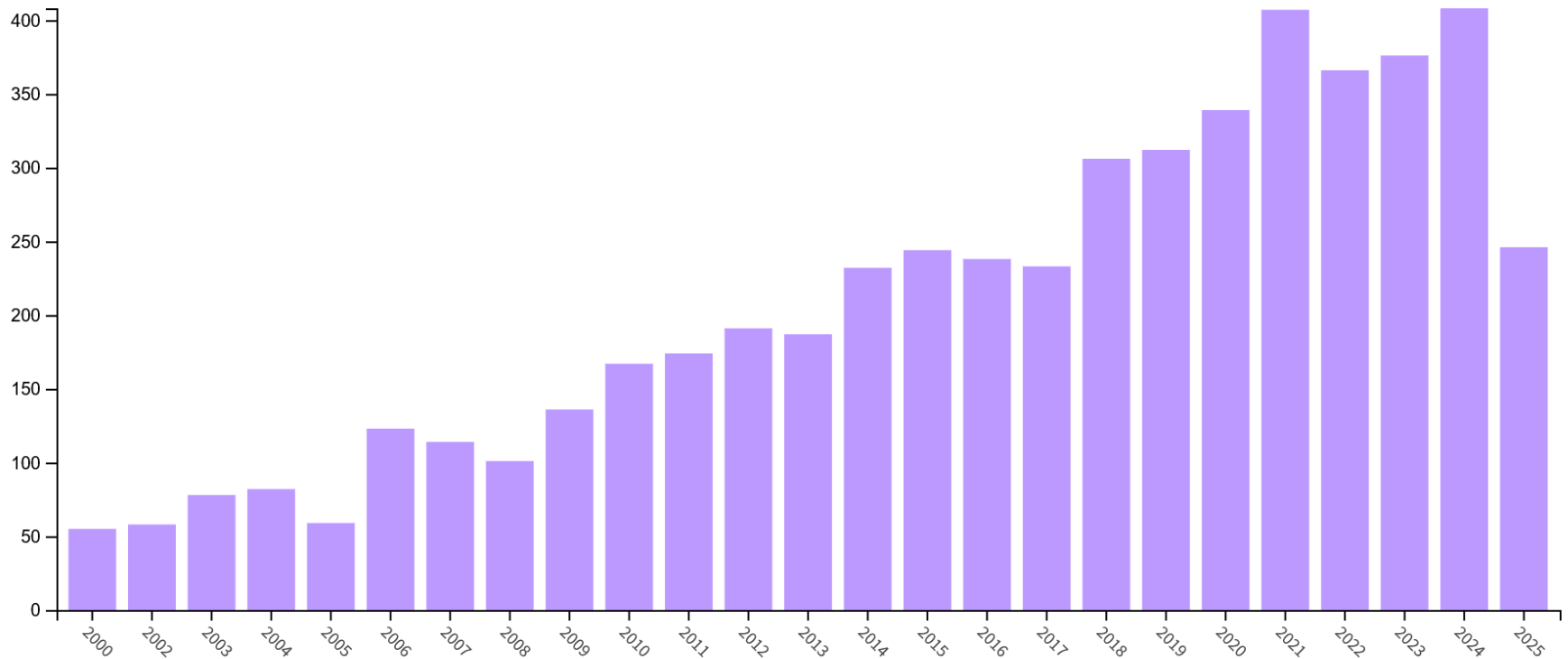


Institutes

Satelliet 2026-05-26 21:30UTC KNMI

Institute	Research topics (keywords)
Deltares	Water research
KNMI	Atmospheric composition, ocean surface vector winds, wind profiles and upper air winds, clouds, radiation, precipitation
NIOZ	Physical and Biological Oceanography
NLR	Spatial data infrastructure, surveillance
SRON	Instrument development, Atmospheric composition
TNO	Instrument development, Atmospheric composition
RIVM	e.g. nitrogen, light pollution, food production
Geonovum	Advices ministries on geo-information

Remote sensing publications in Netherlands



Funding specific to EO

ESA Support to Science Element (GOCE and SWARM missions)

Netherlands Research council (NWO) user support for space research (stopped from 2028 onwards)

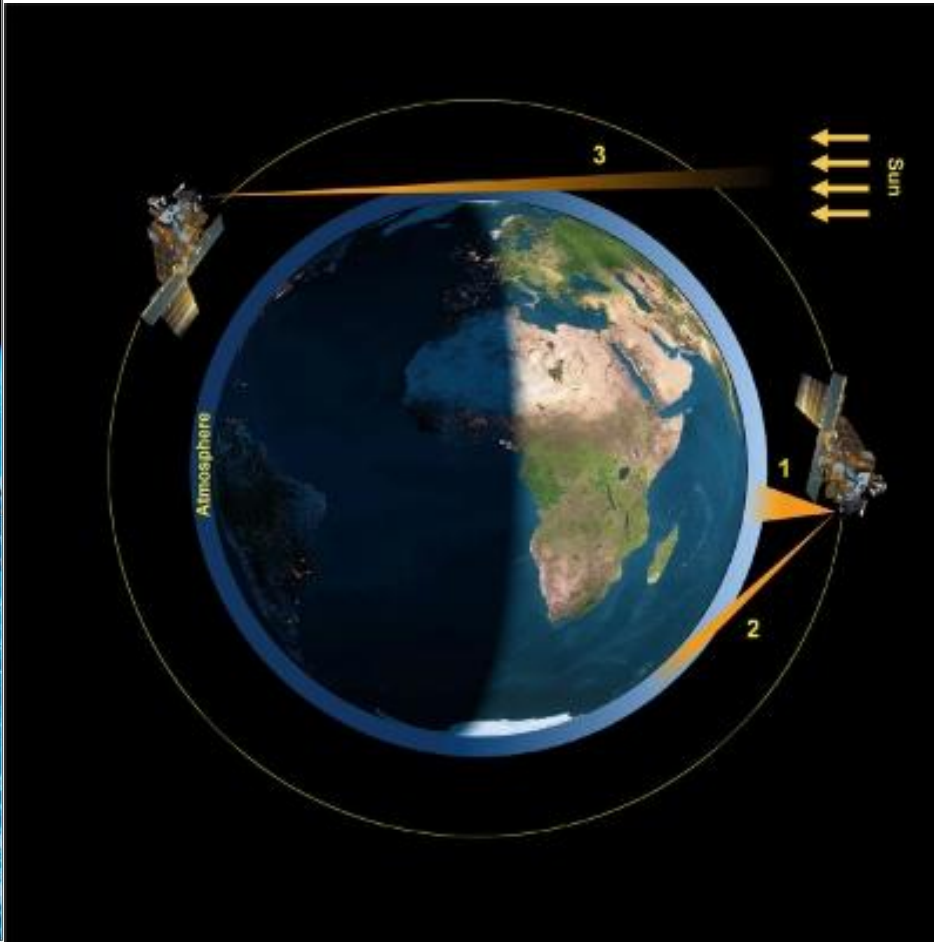
Weave proposal: proposal submitted at FNR or FWO and one submitted at NWO

<https://www.nwo.nl/en/calls/weave-with-nwo-as-partner-agency-2026/2027>

- Earth Observation Activities

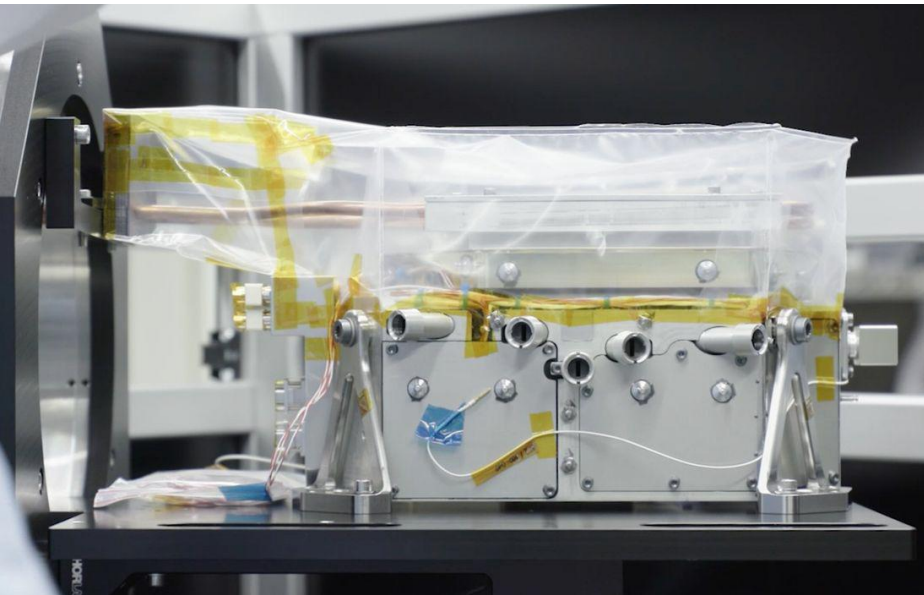
Instruments: Envisat (2002-2012)

Sciamachy 240 nm - 2380 nm

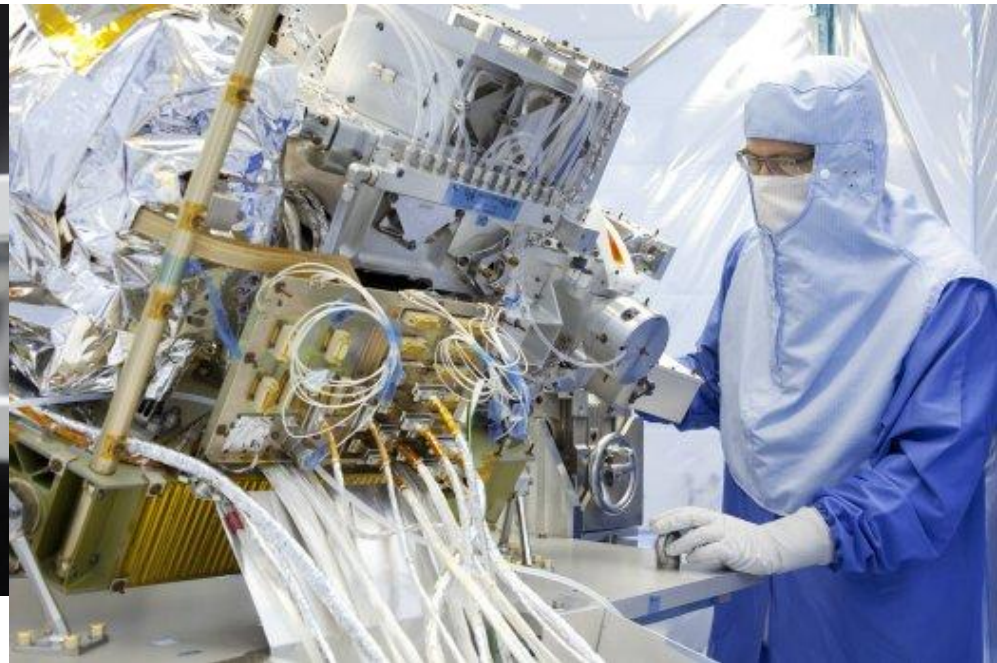


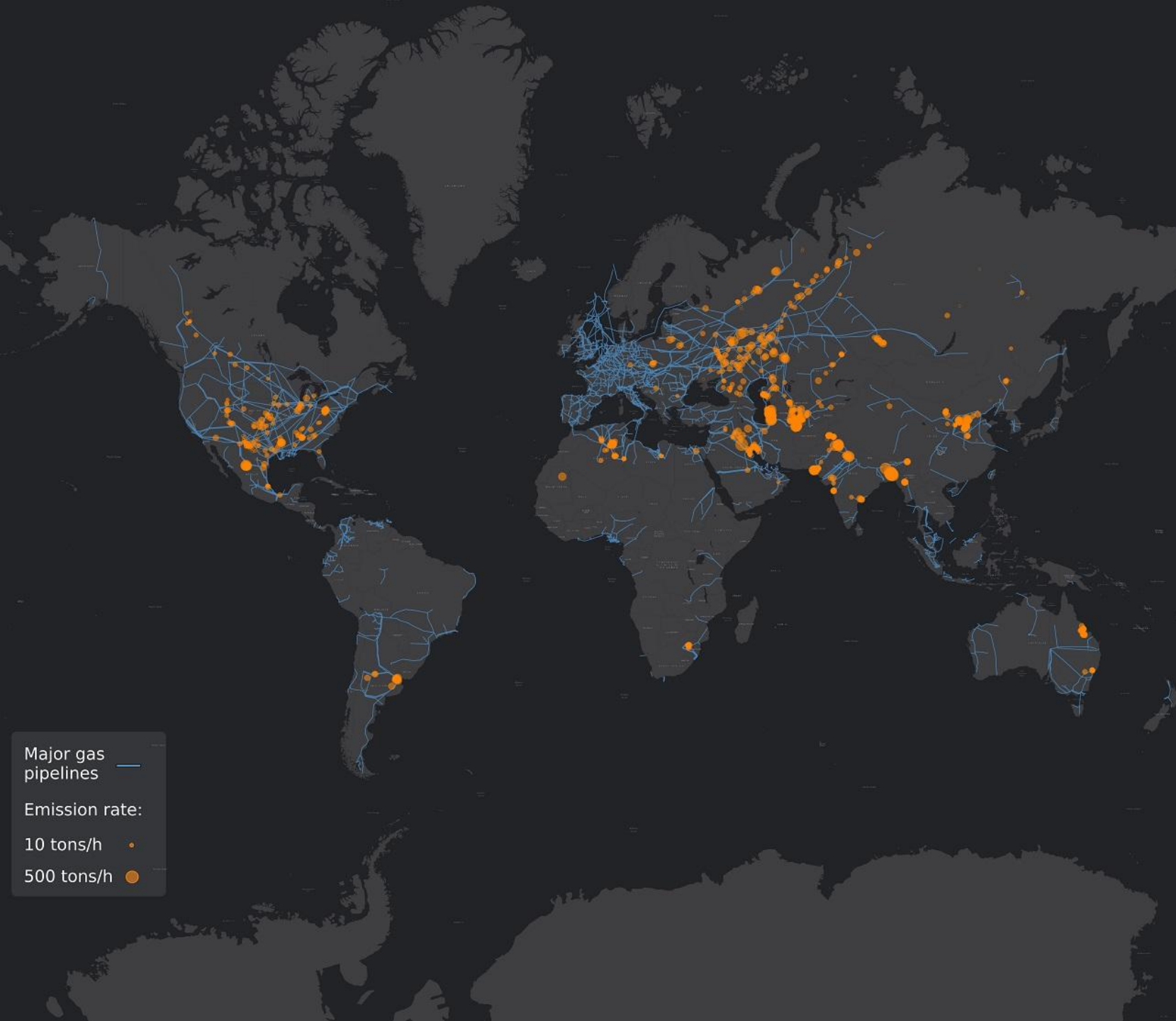
Instruments

SPEXone multi-angle polarimeter
PACE satellite



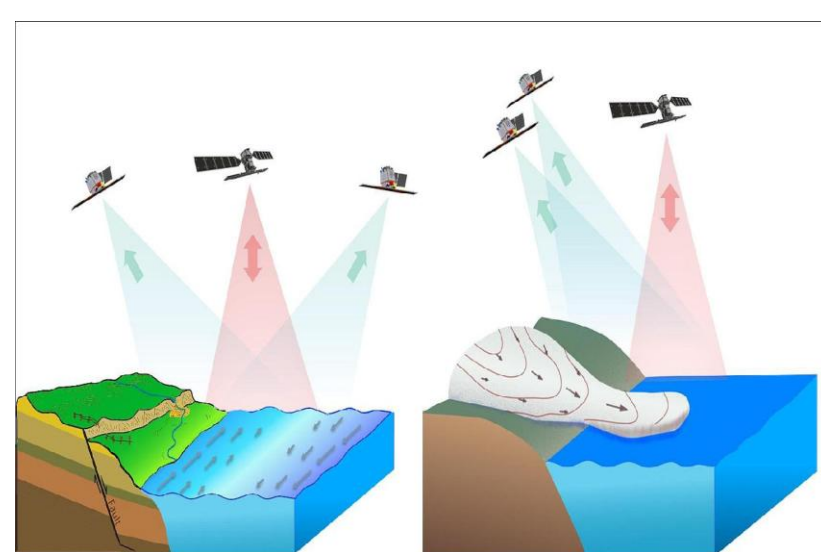
Tropomi imaging spectrometer
Sentinel-5P satellite





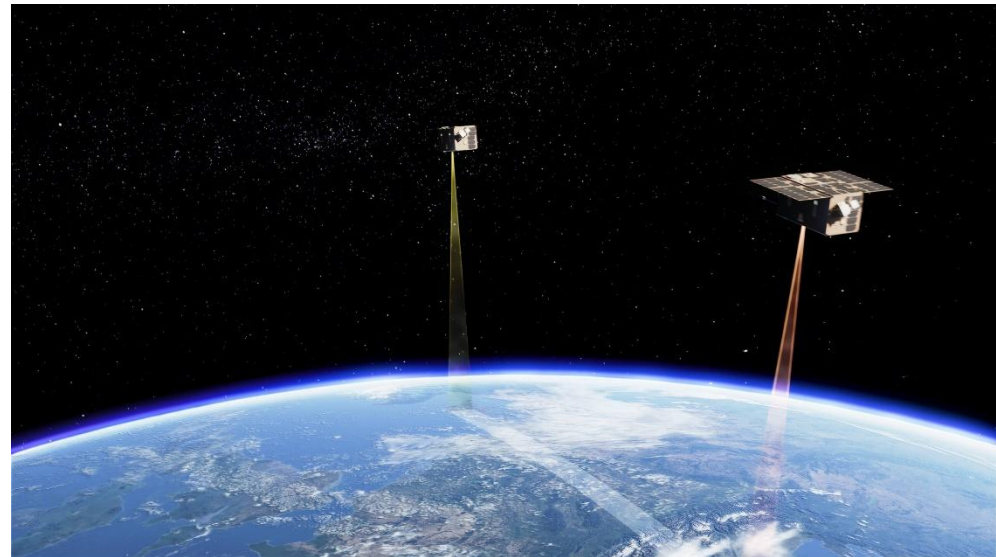
Harmony Mission (2029-)

ESA Earth Explorer mission.
Synthetic Aperture Radar, Thermal
Infrared
Scientific lead: TU Delft



TANGO mission (2028-)

Two satellites, CO₂ and methane
emissions of individual facilities (300×300
meter)
Scientific lead: SRON, KNMI.



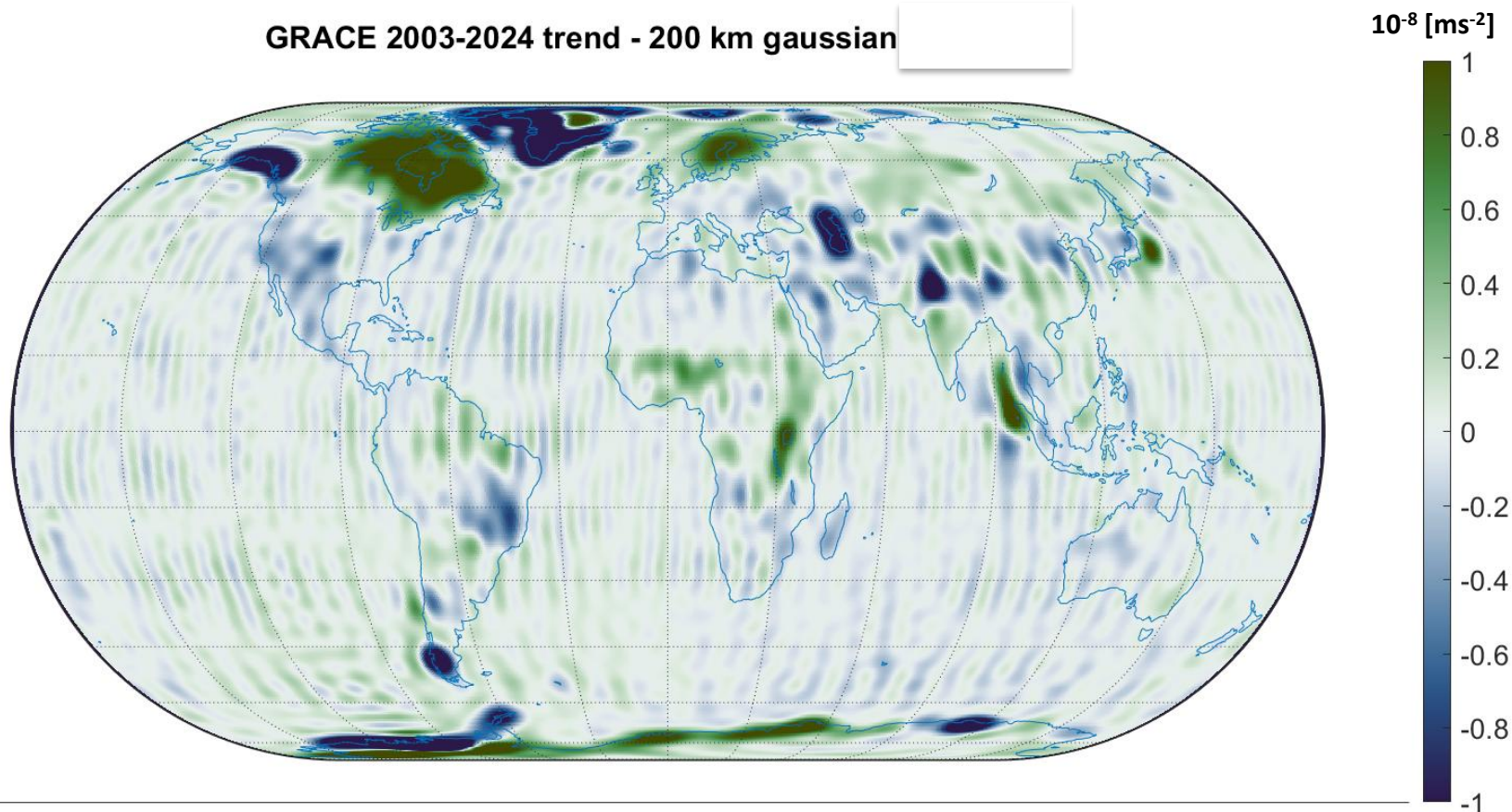
Spin-off: Isis Space



Supported launch of almost 400 satellites

Gravity – mass change

GRACE 2003-2024 trend - 200 km gaussian

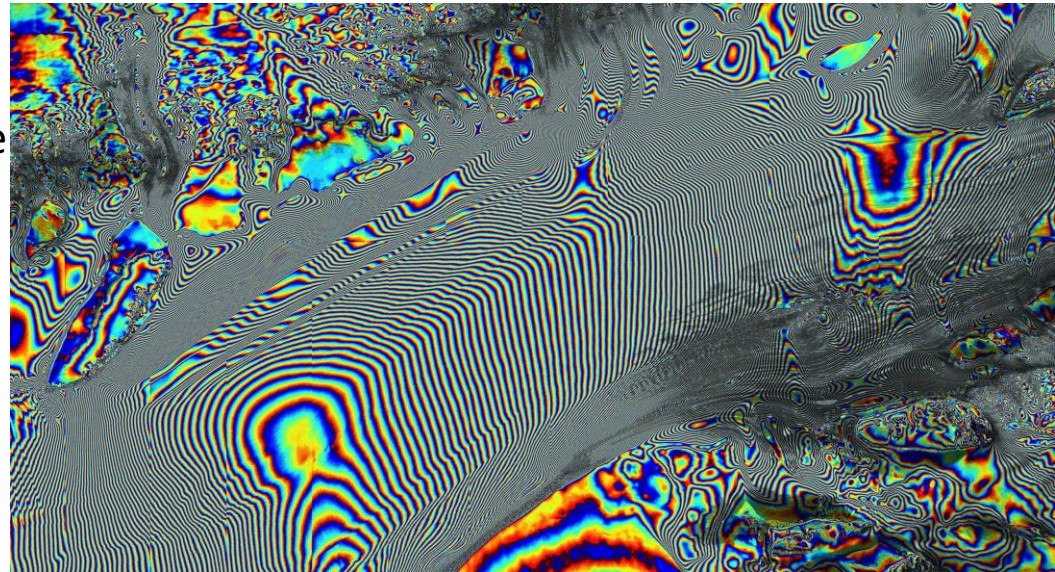


You need something heavy, or spread out over a large region, and something that moves..

Interferometric SAR

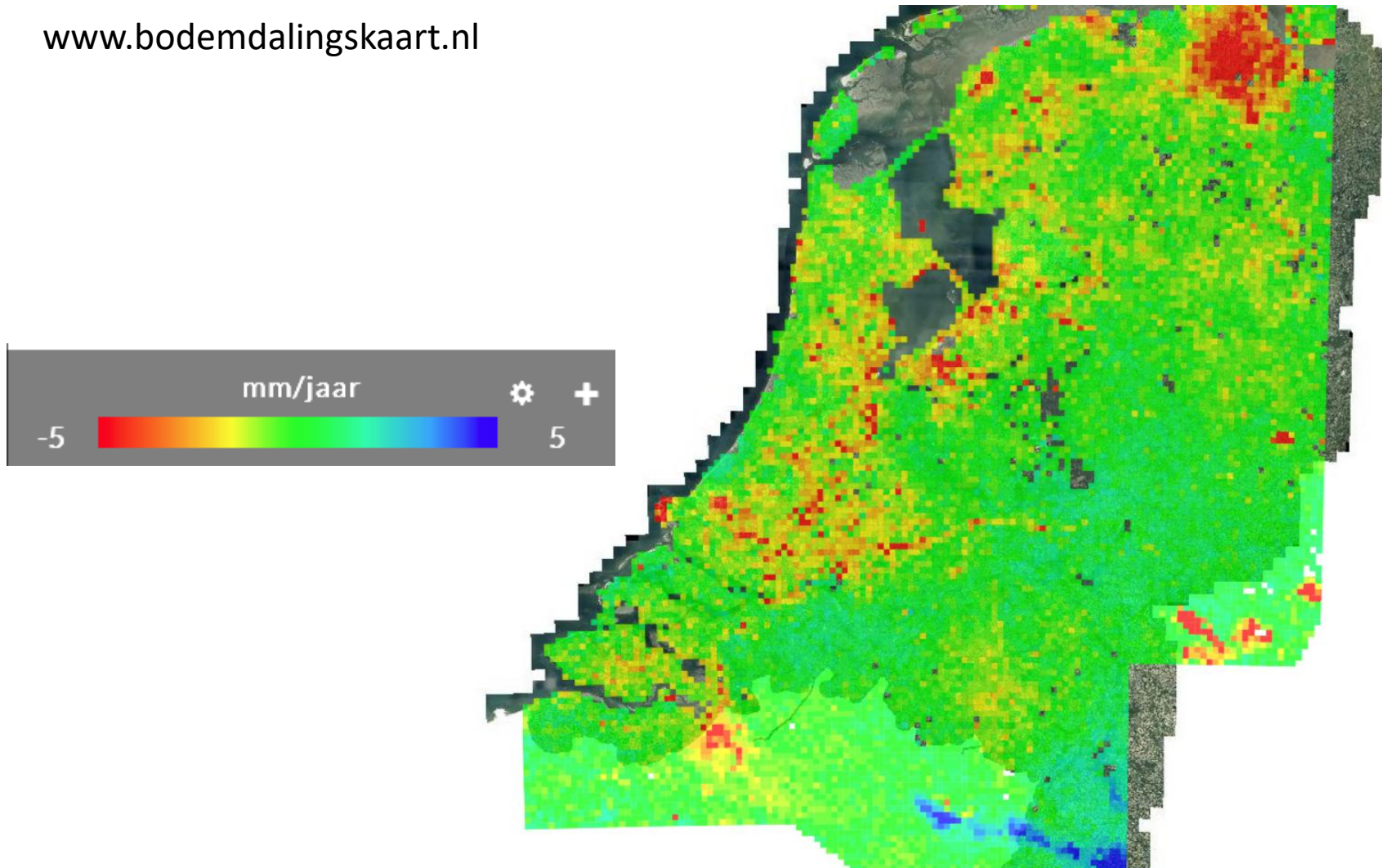


DORIS (Delft Object-oriented Radar Interferometric Software) is an open-source **InSAR processor**



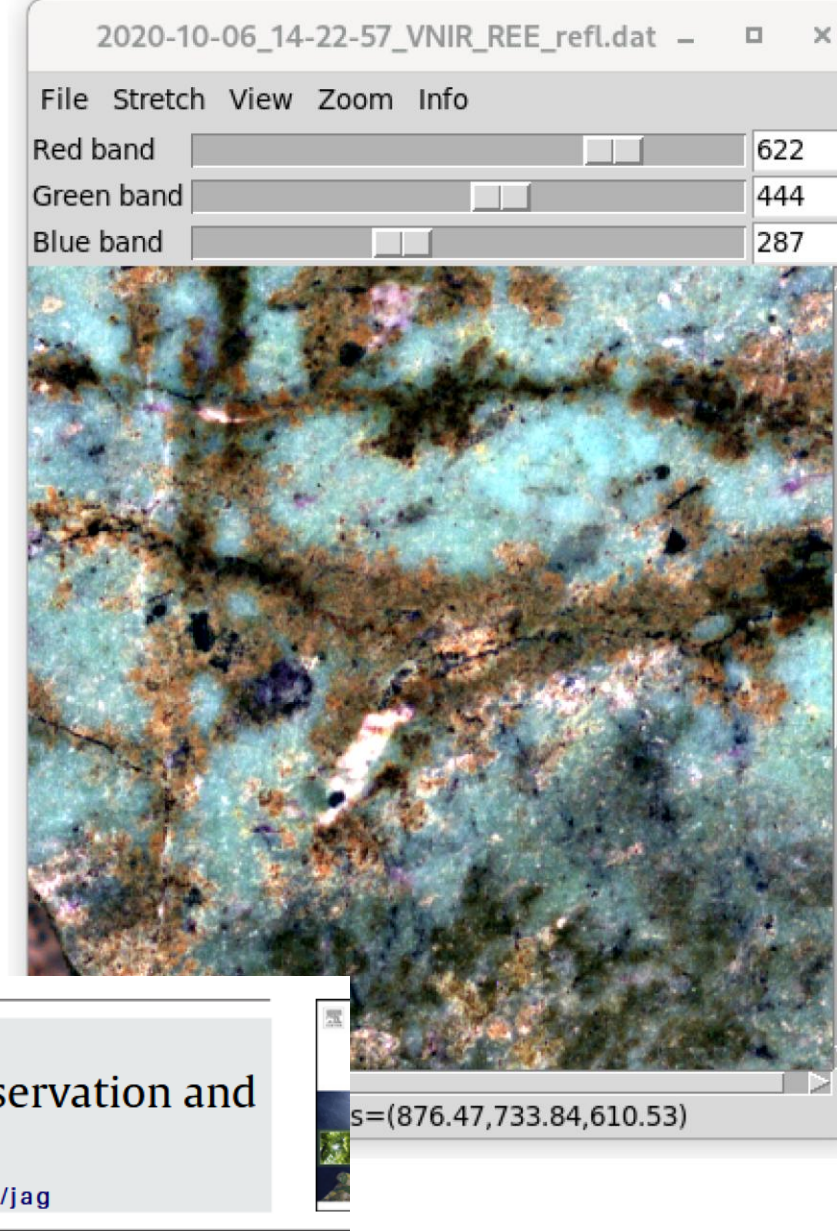
Subsidence map

www.bodemdalingskaart.nl



ITC Twente

<https://github.com/wimhbakker/hyppy>



Contents lists available at [SciVerse ScienceDirect](#)

International Journal of Applied Earth Observation and Geoinformation

journal homepage: www.elsevier.com/locate/jag

Review

Multi- and hyperspectral geologic remote sensing: A review

Freek D. van der Meer*, Harald M.A. van der Werff, Frank J.A. van Ruitenbeek, Chris A. Hecker,

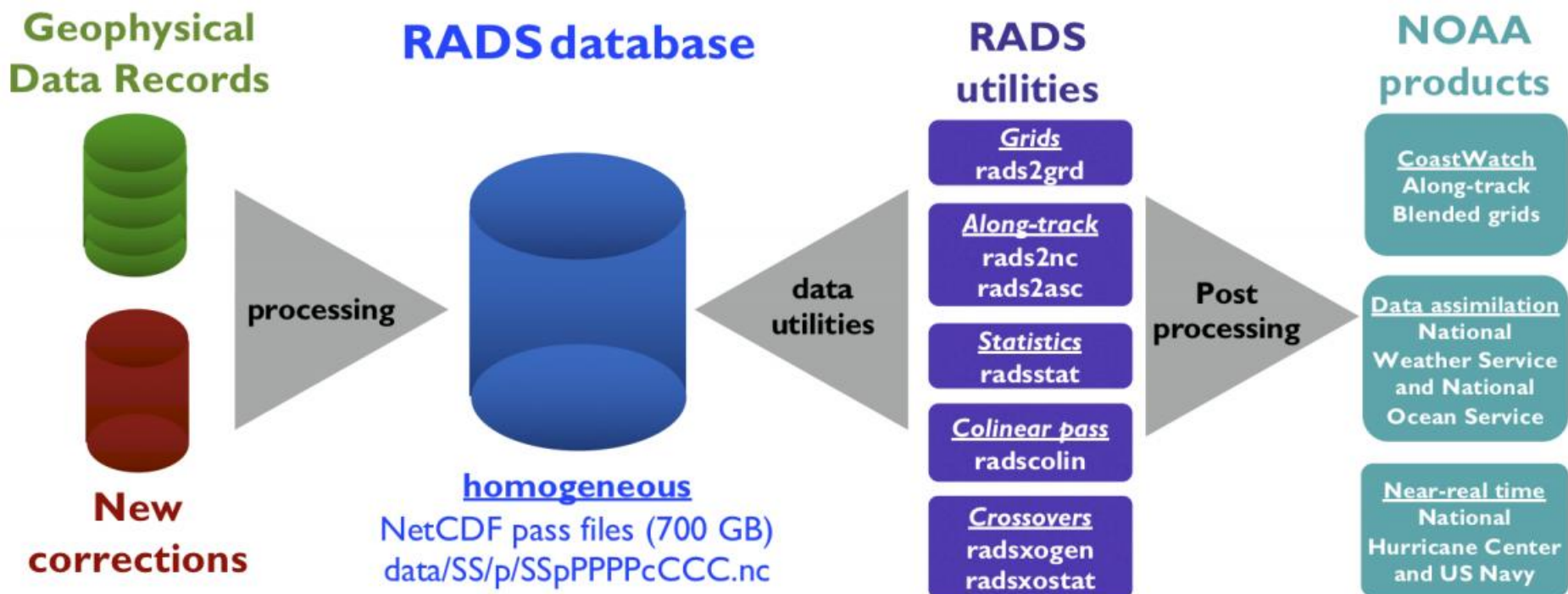
Radar altimetry database

Different sea surface products

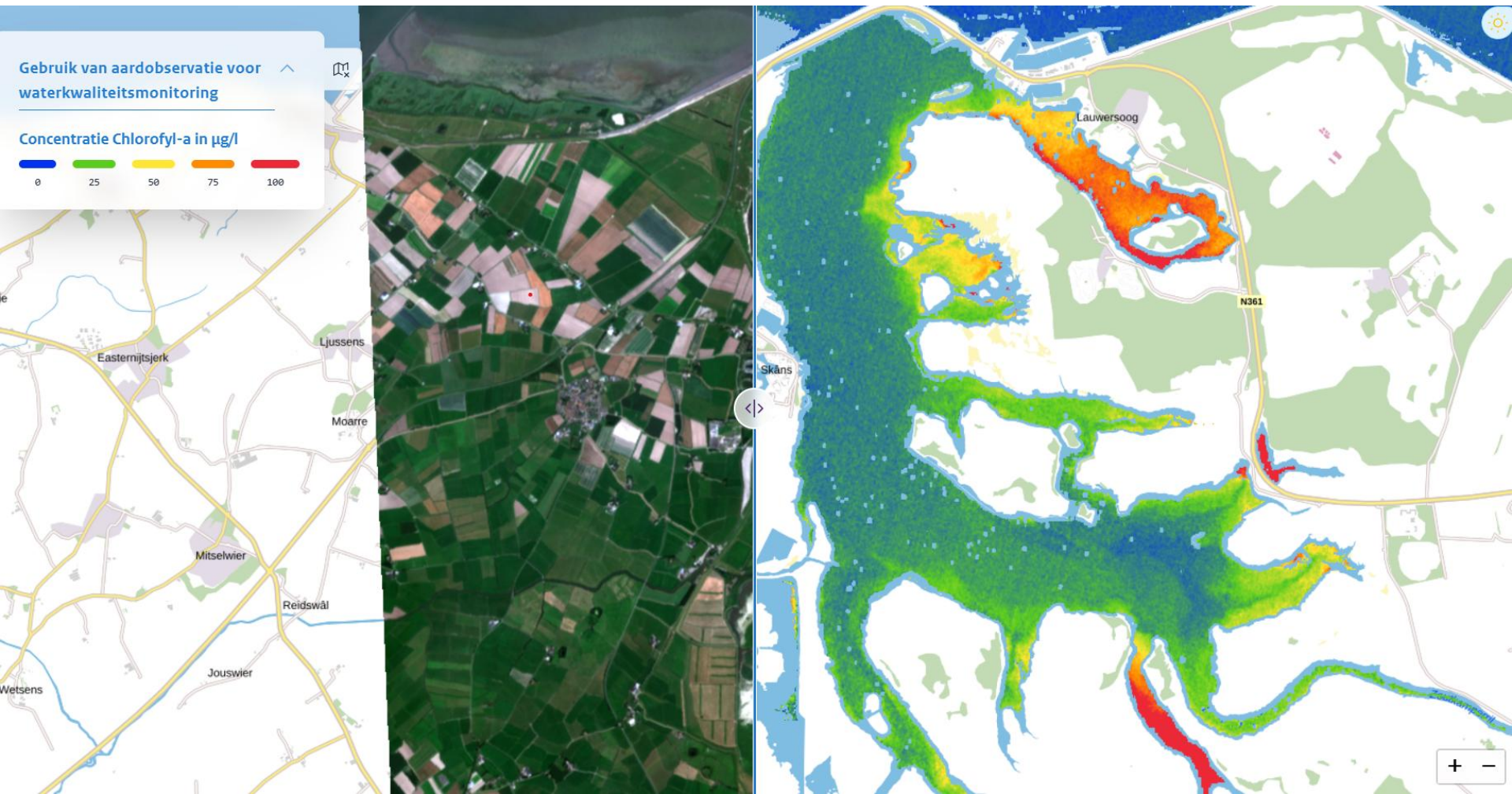
Near real-time processing

Corrections for atmosphere, tides, etc.

Software: fortran, netcdf library, GMT



Satellite data portal



Ruisdael Observatory



#ExploreICOS: Cabauw station, the Netherlands

Climate change • Climate change refers to long-term shifts in temperatures and...



Watch later

Amsterdam

• Cabauw

The Netherlands

MORE VIDEOS

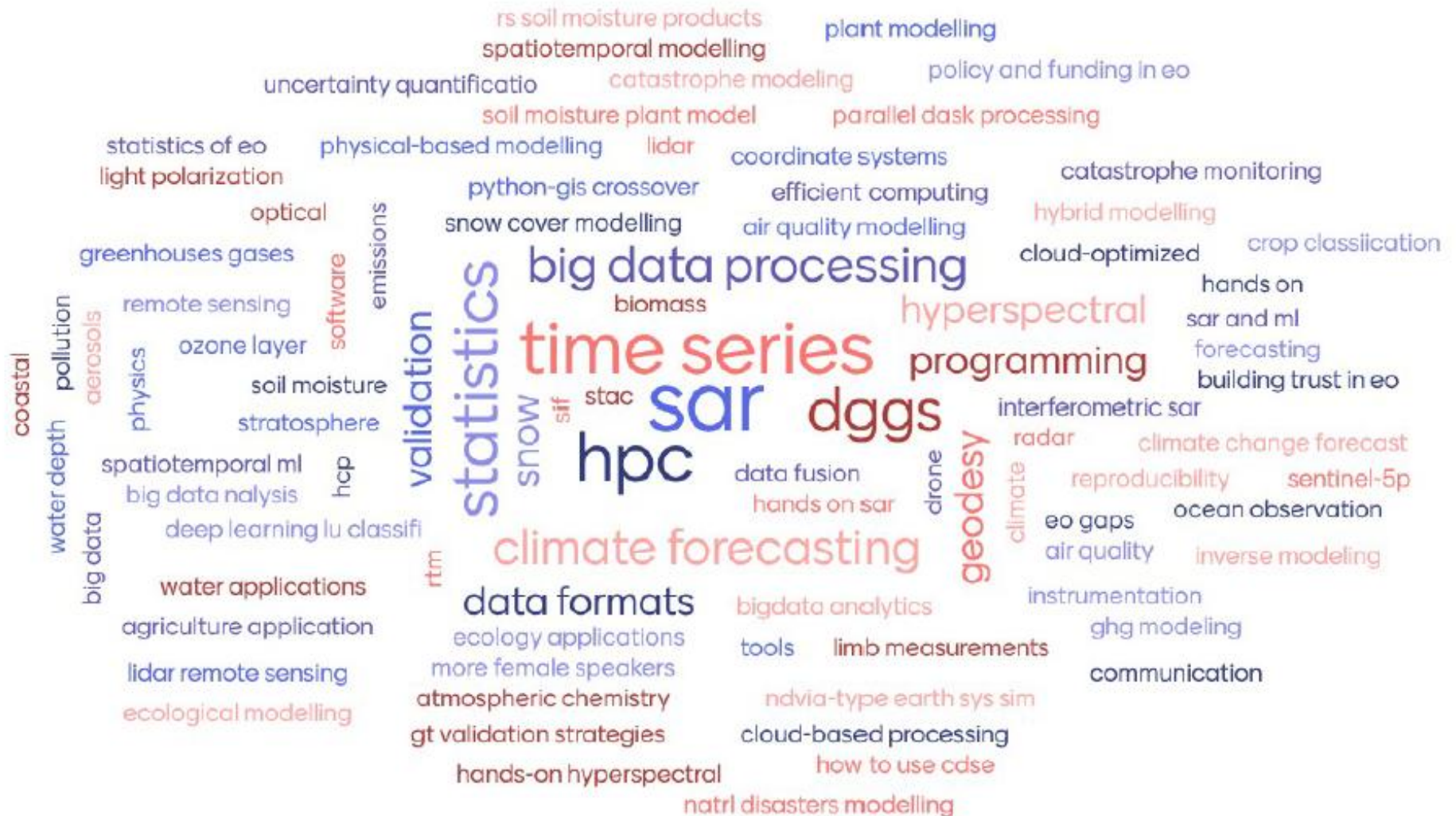


Ruisdael data sets

Search:	Show 20 entries					
Dataset	Type	owner	served by	at location	geographic coordinates	start date
ACTRIS-EARLINET aerosol optical property profiles over CBW Cabauw - Netherlands	Remote Sensing Observation	KNMI	ACTRIS-ARES Data Portal	Cabauw	51.970001 N, 4.93 E	7 June 2024
KNMI Air quality - NO2, HCHO and aerosol measured with MAXDOAS in Cabauw-NL	Remote Sensing Observation	KNMI	KNMI Data Platform		51.968 N, 4.927 E	15 February 2018
KNMI Air quality - NO2, HCHO and aerosol measured with MAXDOAS in De Bilt-NL	Remote Sensing Observation	KNMI	KNMI Data Platform		52.101 N, 5.178 E	21 February 2018
KNMI Air quality – NO2 and O3 measured with Pandora in Cabauw-NL	Remote Sensing Observation	KNMI	KNMI Data Platform		51.968 N, 4.927 E	18 August 2016
KNMI Caeli multiwavelength Raman lidar uncalibrated attenuated backscatter at Cabauw	Remote Sensing Observation	KNMI		Cabauw	51.967865 N, 4.929518 E	1 May 2008
KNMI Clouds - 2D cloudmask from infrared measurements at 10 minute intervals at Cabauw	Remote Sensing Observation	KNMI	KNMI Data Platform	Cabauw	51.97 N, 4.93 E	13 May 2008

- Earth Observation Fall School

Preferred topics at future school



Earth Observation School

TU Delft, NL
2-7. November 2026



Earth
Observation
Applications



Instrument
Design



Geo-Data
Computing



Calibration



Draft program

Lectures

- Passive optical instruments for Earth Observation
- Synthetic Aperture Radar: system specifications and performance trade off
- The Radiative Transfer Theory
- Data use in remote sensing of the atmosphere
- Observing earth system dynamics on weather and climate scales
- What does high resolution mean? Space-based spectrometry for air quality & climate
- Satellite design (Airbus), Calibration/validation (VITO), Ammonia (Brussels)

Tutorials

- Processing PACE data with Python: get a polarized hyperspectral view of the Earth
- Greenhouse Gas Remote Sensing using Absorption Spectroscopy: Hands-on experience
- Cryosphere Tutorial in Python
- High performance computing with Python/RS-DAT (EScience centre)

CMEMS Coastal Monitoring Event

➤ Thursday 2 July 2026
09:00- 18:00 uur
Meeting Tuesday, Rotterdam

 **REGISTER NOW**



Discover how satellite data, operational marine services, and digital twins can support coastal monitoring in practice.

- Bringing together **experts and users** from Belgium and the Netherlands
- Interactive day dedicated to exploring the Copernicus Marine Service (CMEMS) with a strong focus **on coastal monitoring**
- Plenty of opportunities for **knowledge sharing, matchmaking, and dialogue**
- Confirmed speakers include representatives from Mercator Océan, the Dutch Ministry of Infrastructure and Water Management, RBINS, Deltares, VITO, Fugro, and Rijkswaterstaat.