



UNOOSA-ESA-ISRO-NASA

Earth Observation Training for Agriculture

# ESA contribution

in collaboration with  
RUS/COPERNICUS and with Univ. of Louvain

---

FRANCESCO SARTI, ESPEN VOLDEN (ESA)

MAGDALENA FITRZYK, AMALIA CASTRO GOMEZ  
(RSAC@ESA)

FABRIZIO RAMOINO (SERCO@ESA)

GEORGIA KARADIMOU (SERCO)

7 October 2021, 10:00-12:30 (English) or  
13:00-15:30 (Spanish) EDT (UTC-4)

---

## **Part 2: Optical Remote Sensing Refresher and Introduction to SNAP**

Instructors: Magdalena Fitrzyk & Fabrizio Ramoino (ESA)

- Basic physics, concepts and theory of optical remote sensing, and its applications for agriculture
- Optical imagery pre-processing using SNAP
- Q&A

# Our speakers

---



FABRIZIO RAMOINO (SERCO C/O ESA)  
EARTH OBSERVATION DATA EXPLOITATION AND  
APPLICATION EXPERT



MAGDALENA FITRZYK (RSAC C/O ESA)  
REMOTE SENSING PROJECT SCIENTIST WITH  
EMPHASIS ON SAR



AMALIA CASTRO GOMEZ (RSAC C/O ESA)  
REMOTE SENSING PROJECT SCIENTIST  
(SPANISH VERSION)

# More about our work

---

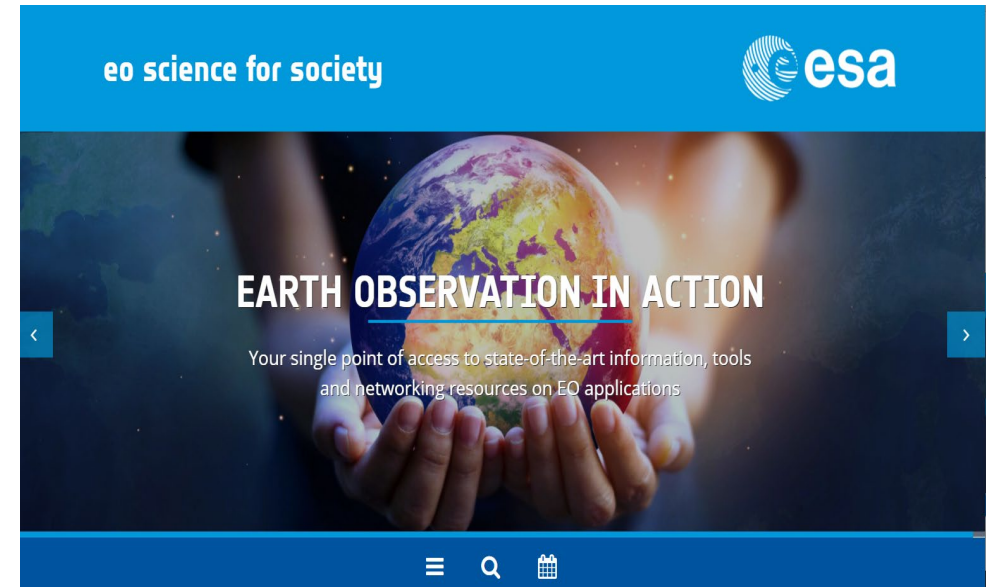
ESA'S CENTRE FOR EARTH OBSERVATION: ESRIN (ROME, ITALY)

[HTTPS://WWW.ESA.INT/ABOUT\\_US/ESRIN](https://www.esa.int/About_US/ESRIN)



EO4SOCIETY: ACCESS FOR OUR ACTIVITIES AND TRAINING EVENTS

[HTTPS://EO4SOCIETY.ESA.INT/](https://eo4society.esa.int/)



19 October 2021, 10:00-12:30 (English) or  
13:00-15:30 (Spanish) EDT (UTC-4)

---

**Part 5: Biophysical Variable Retrieval using Optical Imagery to Support  
Agricultural Monitoring Practices**

Instructors: Sophie Bontemps & Pierre Defourny (ESA)

- Biophysical Variables (LAI, FAPAR, FVC, Cab and CWC) derived from Sentinel-2
- Radiometric Indices: Quantitative measures of features that are obtained by combining several spectral bands
- Q&A

# Our speakers

---



PIERRE DEFOURNY (UNIVERSITY OF LOUVAIN)  
HEAD OF UCLouvain GEOMATICS RESEARCH  
LAB



SOPHIE BONTEMPS (UNIVERSITY OF LOUVAIN)  
RESEARCHER



AMALIA CASTRO GOMEZ (RSAC C/O ESA)  
REMOTE SENSING PROJECT SCIENTIST  
(SPANISH VERSION)

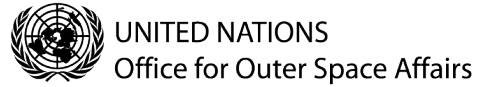


For more info, feel free to contact us at:

[eotraining@esa.int](mailto:eotraining@esa.int) | [amalia.castro.Gomez@esa.int](mailto:amalia.castro.Gomez@esa.int)

Follow us in Twitter or YouTube @EO\_OPEN\_SCIENCE





UNOOSA-ESA-ISRO-NASA

Earth Observation Training for Agriculture

# ESA contribution

in collaboration with  
RUS/COPERNICUS and with Univ. of Louvain

---

FRANCESCO SARTI, ESPEN VOLDEN (ESA)

MAGDALENA FITRZYK, AMALIA CASTRO GOMEZ  
(RSAC@ESA)

FABRIZIO RAMOINO (SERCO@ESA)

GEORGIA KARADIMOU (SERCO)



14 October 2021, 10:00-12:30 (English) or  
13:00-15:30 (Spanish) EDT (UTC-4)

---

## **Part 4: Operational Crop Classification Roadmap using Optical and SAR Imagery**

Instructors: Georgia Karadimou & Tereza Roth (RUS)

- Explanation of Random Forest, Support Vector Machine, and Unsupervised algorithms as classifiers
- Explain Python libraries for running classifiers in JupyterLab
- Use of SNAP and Python for crop classification, including demonstration of different parameters (e.g., S1 vs. S2 alone) when classifying crop types in a given study area
- Q&A

# Our speakers

---



TEREZA ROTH (RUS COPERNICUS  
/ SERCO ITALY S.P.A.)  
REMOTE SENSING SPECIALIST



GEORGIA KARADIMOU (RUS  
COPERNICUS / SERCO ITALY S.P.A.)  
REMOTE SENSING SPECIALIST



AMALIA CASTRO GOMEZ (RSAC C/O ESA)  
REMOTE SENSING PROJECT SCIENTIST  
(SPANISH VERSION)

# RUS Copernicus Service



Research and User Support for Sentinel Core Products

Started in 2017

Virtual Machines - Support

Training Activities (Webinars, F2F Trainings,  
Remote Classrooms)

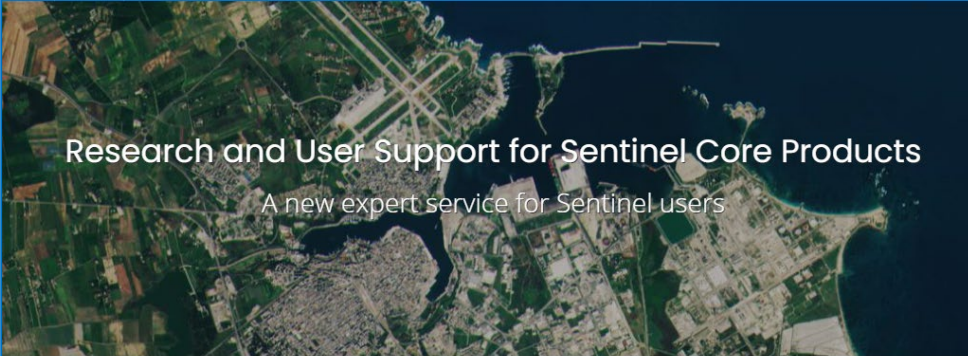
40+ topics and tutorials, 50+ events, 20+ countries



# More about our work

RUS TRAINING PAGE: ACTIVITIES, TRAINING  
EVENTS, E-LEARNING (ROME, ITALY)

[HTTPS://RUS-TRAINING.EU/](https://rus-training.eu/)



**Research and User Support for Sentinel Core Products**  
A new expert service for Sentinel users

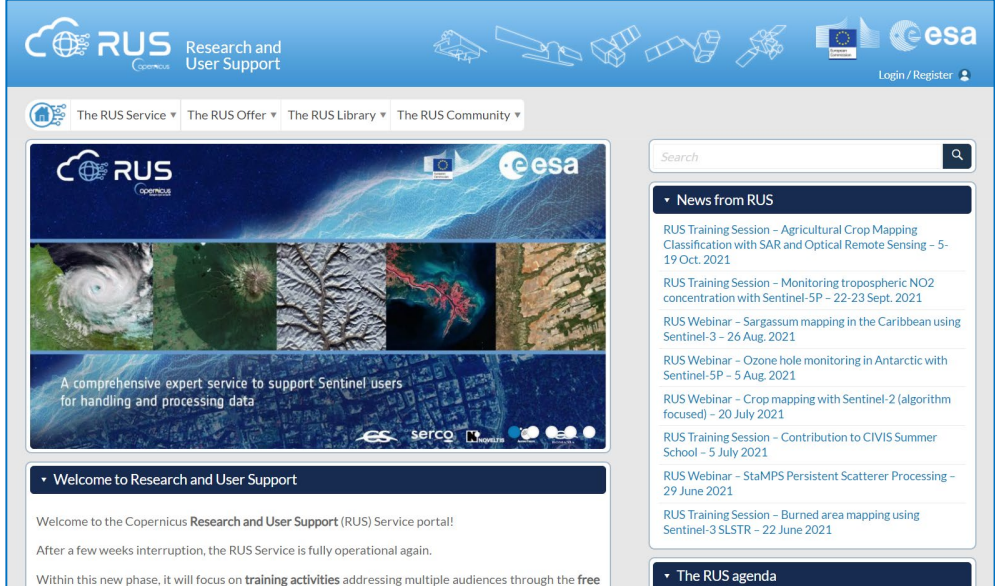
In the frame of the RUS service, the Training platform provides easy access to face-to-face training sessions, online webinars and e-learning courses.  
Our training programme is **free** and aimed at users at various levels of proficiency.

**Start now!**

[TRAINING](#) [E-LEARNING](#)

RUS COPERNICUS PORTAL: THE OFFER, THE  
LIBRARY, NEWS (FRANCE)

[HTTPS://RUS-COPERNICUS.EU/PORTAL/](https://rus-copernicus.eu/portal/)



**RUS** Research and User Support

The RUS Service | The RUS Offer | The RUS Library | The RUS Community

**News from RUS**

- RUS Training Session – Agricultural Crop Mapping Classification with SAR and Optical Remote Sensing – 5-19 Oct. 2021
- RUS Training Session – Monitoring tropospheric NO2 concentration with Sentinel-5P – 22-23 Sept. 2021
- RUS Webinar – Sargassum mapping in the Caribbean using Sentinel-3 – 26 Aug. 2021
- RUS Webinar – Ozone hole monitoring in Antarctic with Sentinel-5P – 5 Aug. 2021
- RUS Webinar – Crop mapping with Sentinel-2 (algorithm focused) – 20 July 2021
- RUS Training Session – Contribution to CIVIS Summer School – 5 July 2021
- RUS Webinar – StaMPS Persistent Scatterer Processing – 29 June 2021
- RUS Training Session – Burned area mapping using Sentinel-3 SLSTR – 22 June 2021

**The RUS agenda**

FOLLOW US!!!



For more info, contact us at:

[eotraining@serco.com](mailto:eotraining@serco.com) | [training@rus-copernicus.eu](mailto:training@rus-copernicus.eu) | [Georgia.Karadimou@serco.com](mailto:Georgia.Karadimou@serco.com)

Follow us in our social media @RUSCopernicus

