

- **Title of the workshop:** *Basics of Optical Remote Sensing: from Data to Information*
- **Names, affiliations, contact information and short biographies of the workshop organizers:**

Enrico, Borgogno-Mondino

Full professor in Geomatics and Remote Sensing at the Department of Agricultural, Forest and Food Sciences (DISAFA), GEO4Agri DISAFA Lab, Università degli Studi di Torino, Largo Paolo Braccini 2, 10095 Grugliasco, Italy; <https://orcid.org/0000-0003-4570-8013> enrico.borgogno@unito.it

Short Bio

Since 2023 Full Professor in Geomatics at the Dept. of Agricultural, Forest and Food Sciences (DISAFA) - University of Torino. 1996 Master Degree in Environmental Engineering by Politecnico di Torino (Italy); in 2004 Ph.D. in Geodesy and Geomatics by Politecnico di Milano (Italy).

Since 2002 lecturer in BSc, MS, post-graduate masters and PhD courses. Main research topics are related to agro-forestry application of Geomatics, included optical and SAR remote sensing, digital photogrammetry, LiDAR, GIS and survey.

Author of more than 150 papers in National and International Scientific Proceedings, Journals and Books. Editorial board member in MDPI Remote Sensing, MDPI Agronomy, MDPI Geomatics, Frontiers in Forests, Frontiers in Agronomy, ASITA Conference Proceedings (CCIS Springer collection).

Guest editor of Special Issues: MDPI Land, MDPI Remote Sensing, Frontiers in Forests and Global Change.

President of the Italian Society of Remote Sensing since 2023.

President of the ASITA Scientific Council and Vice-president of the ASITA Board since 2022.

Scientific Responsible of various research projects since 2007 and tutor of more than 40 BS, MS and PhD theses since 2010.

Riccardo Orusa

Director in Chief S.C. Valle d'Aosta and CeRMAS (National Reference Centre Wildlife Diseases), Istituto Zooprofilattico Sperimentale del Piemonte, Liguria e Valle d'Aosta , Localita' Amerique 7 G, 11020 Quart , Italy <https://orcid.org/0000-0002-9027-164>

Short Bio

Since 2000, Senior Veterinary Officer and Head of National Reference Center Wildlife Diseases , Director of S.C. Aosta Valley Laboratory of Istituto Zooprofilattico Sperimentale del Piemonte, Liguria e Valle d'Aosta with management and scientific responsibilities, including coordination of activities, responsibility of human resources, structures and global research management.

Lecturer by several Italian Universities like Parma, Milano, Padova, Teramo and Venezia Ca' Foscari teaching topics related to wildlife diseases.

He got several courses of specialization and masters in Veterinary Medicine and One Health matter at the Torino University.

Author of more than 150 papers in Journals, Proceedings and Reports. Presenter of more than 100 contributions in National and International Projects and Conferences.

Member of various International and National Scientific Societies, reviewer for different International Journals and participant in international Working Groups dealing with Wild Animal Diseases and One Health.

➤ **Outline the workshop purpose, goals, and expected results**

The workshop is specifically aimed at supplying basic knowledge about optical remote sensing with special concerns about data availability and about the physical and operational meaning of adopted techniques. Attendees will acquire operational skills for obtaining, processing and interpreting data. An introduction to available open/free software for data preparation/processing will be given, as well. Concerning data, a special focus will be given on EU Copernicus Sentinels data and, possibly, USGS Landsat and MODIS missions. The workshop is warmly encouraged for beginners and/or people already working with EO data, but poorly conscious of data, processing and result interpretation. It can be also thought as propaedeutic to the one titled “*Environmental Applications of Remote Sensing: mapping suitability, risk and climate change effects on vegetation in the time and space domains.*”

All theoretical concepts will be exemplified with reference to open data and software (SNAP, SAGA GIS, QGIS, RStudio).

➤ **Specify the background and skills that attendees should have to attend the workshop**

Given the basic (but focused) nature of the workshop no particular skill is required. Nevertheless basic knowledge about Digital Geographical data, GIS and Statistics is welcome.

➤ **Prior history of this workshop, if any, including venues, dates, and approximate attendance number**

This workshop was never offered before in the veterinary sector.

Workshop specification

- **Conference preference: pre or post conference:** Pre conference
- **Proposed workshop duration (days):** 1 day
- **Number of attendees (minimum and maximum):** 10-45
- **Suggested fee for the participants:**
 - **Regular:** 80 €/person
 - **Students:** 50 €/person
- **Schedule**

Slot	17th or 22 nd September 2023	Lecturer
9-11	<ul style="list-style-type: none">📄 Electro-magnetic radiation (EMR)📄 Optical Sensors and multispectral images📄 Image calibration and Atmospheric Correction	Fabio Giulio Tonolo, Ph.D. (AIT)
11-13	<ul style="list-style-type: none">📄 Spectral indices and spectral indices time series📄 Introduction to Data Processing: data preparation and spectral indices computation in the SNAP software.	Enrico Borgogno-Mondino, Ph.D. (University of Torino, AIT)
14-16	<ul style="list-style-type: none">📄 Data and Products: Global Archives of Open Data (Copernicus Sentinels). Sentinel Hub EO browser	Fabio Giulio Tonolo, Ph.D. (AIT)
16-18	<ul style="list-style-type: none">📄 Image supervised and unsupervised classification (SAGA GIS and QGIS): longing for zonation.	Samuele De Petris, Ph.D. (University of Torino, AIT)

Materials provided by the facilitators

Participants will be provided with a pre-workshop checklist of OPEN/FREE software to download and install on their laptops.

Participants will receive the slides used to accomplish the theoretical issues. All example operated by software will be recorded and videos made available as tutorials some days after the course.

Example data will be provided by lecturers.

NOTES: the date of workshop can be set up depending on organizers needs.