



## Teodosio Lacava

Date of birth: [REDACTED] | Nationality: Italian | Phone number: [REDACTED]

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### WORK EXPERIENCE

01/01/2021 – CURRENT Tito Scalco (PZ), Italy

**FULL TIME PERMANENT RESEARCHER II LEVEL NATIONAL RESEARCH COUNCIL - INSTITUTE OF METHODOLOGIES FOR ENVIRONMENTAL ANALYSIS**

Development and Implementation of satellite-based methodologies for:

- Natural Disasters (forest fires, volcanic eruptions, floods, landslides, droughts) monitoring and mitigation
- Inland and coastal water quality assessment
- Gas Flaring characterization
- Oil spill detection and monitoring

Development of automatic processing chains from raw satellite data to final products.

Participant as principal investigator or co-investigator in several national and international projects.

Training/dissemination activities in the framework of the Copernicus Users Uptake initiative.

01/02/2010 – 31/12/2020 Tito Scalco (PZ), Italy

**FULL TIME PERMANENT RESEARCHER III LEVEL NATIONAL RESEARCH COUNCIL - INSTITUTE OF METHODOLOGIES FOR ENVIRONMENTAL ANALYSIS**

Development and implementation of advanced satellite-based methodologies for environmental, natural, and anthropic risk monitoring and mitigation.

Principal investigator of two projects funded by the European Regional Development Fund program.

Scientific responsible for several fellowships; Tutor of several ERASMUS and university students; Tutor of several Ph.D Students

15/12/2005 – 31/01/2010 Tito Scalco (PZ), Italy

**FULL TIME TEMPORARY RESEARCHER III LEVEL NATIONAL RESEARCH COUNCIL - INSTITUTE OF METHODOLOGIES FOR ENVIRONMENTAL ANALYSIS**

Development and implementation of advanced satellite-based methodologies for environmental, natural, and anthropic risk monitoring and mitigation.

01/02/2004 – 15/12/2005 Tito Scalco (PZ), Italy

**RESEARCH FELLOW NATIONAL RESEARCH COUNCIL - INSTITUTE OF METHODOLOGIES FOR ENVIRONMENTAL ANALYSIS**

Development and assessing of optical and microwave satellite techniques for soil moisture retrieval

### EDUCATION AND TRAINING

05/11/2020 – CURRENT Potenza, Italy

**NATIONAL SCIENTIFIC ABILITATION FOR TEACHING AT UNIVERSITY LEVEL - GEOPHYSICS** Italian Minister of the Research

23/01/2004 – CURRENT Potenza, Italy

**PHD IN METHODS AND TECHNOLOGIES FOR ENVIRONMENTAL MONITORING (THESIS TITLE: DEVELOPMENT OF MICROWAVE-BASED TECHNIQUES FOR THE HYDROMETEOROLOGICAL RISK MONITORING)** University of Basilicata, Potenza, Italy

## ● LANGUAGE SKILLS

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Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
<b>ENGLISH</b>	C1	C1	C1	C1	C2

*Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user*

## ● EDITORIAL ACTIVITIES

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01/06/2017 – CURRENT

### **Editorial Board Member of the Remote Sensing Journal**

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Editorial activity (review, pre-check of the submission, check of the revision, decision, proposing new special issues) for the journal

22/04/2020 – CURRENT

### **Editorial Board Member of the Earth Journal**

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Editorial activity (review, pre-check of the submission, check of the revision, decision, proposing new special issues) for the journal

09/11/2020 – CURRENT

### **Topical Board Member of the Geomatics Journal**

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Editorial activity (review, pre-check of the submission, check of the revision, decision, proposing new special issues) for the journal

01/06/2018 – 31/12/2019

### **Lead Guest Editor of a Special issue for the Sensors journal: Remote Sensing Applications in Coastal Areas**

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Proposing the Special Issue, collecting the potential papers, checking for their relevance, and making decisions.

22/04/2021 – 31/12/2022

### **Guest Editor of a Special issue for the Remote Sensing journal: Remote Sensing of Water Cycle: Recent Developments and New Insights.**

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Proposing the Special Issue, collecting the potential papers, checking for their relevance, and making decisions.

01/06/2022 – CURRENT

### **Guest Editor of a Special issue for the Remote Sensing journal: Optical Remote Sensing of the Atmosphere and Oceans**

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Proposing the Special Issue, collecting the potential papers, checking for their relevance, and making decisions.

## ● PROJECTS

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01/10/2020 – CURRENT

### **Scientific Responsible for the CNR-IMAA within the IDEWA project**

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The IDEWA (*Irrigation and Drainage monitoring by remote sensing for Ecosystems and WAter resources management*) has been funded by the EU-PRIMA 2019 program. Its main goal is to bridge the gap between potential and actual irrigation performance in the Mediterranean.

IMAA is in charge of the activities of WP1 - Earth Observation data - and is assessing the water quality of the main rivers collecting waters from the Algerri-Balaguer (Saragozza Province, Spain) irrigation district, by integrating satellite and in-situ data. Dr. Lacava is the scientific responsible for these activities.

01/10/2018 – 31/12/2020

### **Key Person of the CORDINET project**

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The CORDINET (*Copernicus Relays for digitalisation spanning a Network*), was funded by the H2020-SPACE-2018-2020 program. Its main goal was supporting, promoting and stimulating digitalization and new business solutions based on Earth observation data from the Copernicus program.

IMAA, as a member of the TERN consortium, one of the partners of the project, was in charge of the WP2 activities, focused on an analysis of needs, challenges, and barriers to user-uptake of Copernicus data and products. Dr. Lacava was the main scientist responsible for these activities.

01/09/2018 – 28/02/2021

### **IMAA Scientific responsible of task 2.5 (Analyzing soil moisture trend for drought/land degradation processes identification) and task 3.2 (Extreme idrological events) within the OT4CLIMA project**

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The OT4CLIMA (*Sviluppo di tecnologie innovative di Osservazione della Terra per lo studio del Cambiamento cLimatico e dei suoi IMpatti su Ambiente e territorio*) project was funded by the Italian Minister of University and Research. Its main goal was to study climate change impacts at the local scale, investigating both long-term phenomena and short-lived extreme events. Dr. Lacava was responsible for the IMAA activities for the two indicated tasks.

24/01/2014 – 23/07/2015

### **Principal investigator of the MOMEDAS project**

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The MOMEDAS (*MONitoraggio delle acque del mar MEditerraneo mediante DATi Satellitari*) project was funded in the framework of the Basilicata region European Social Fund program. Its main goal was providing an assessment of the Mediterranean sea water quality by means of satellite data. Dr. Lacava was the principal investigator of the project.

01/06/2012 – 31/12/2015

### **Principal Investigator of the IOSMOS project**

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The IOSMOS (*IOnian Sea water quality MONitoring by Satellite data*) project was funded in the framework of the Basilicata region European Regional Development Fund program. Its main goal was assessing the water quality status of Basilicata Region Ionian coastal sea by integrating satellite and in-situ measurements. Dr. Lacava was the principal investigator of the project.

01/01/2008 – 31/12/2012

### **Principal investigator of the project: Assessment of EO-based soil wetness variation maps for Geohazards monitoring and mitigation**

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The project was funded by the European Space Agency in the framework of the First SMOS Data Announcement of Opportunity. Its main goal was the integration of different satellite data acquired in the microwave spectral range to define several indicators useful for hydrogeological risk mitigation. Dr. Lacava was the principal investigator of the project.

## ● **RESPONSIBILITY OF INFRASTRUCTURE**

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01/06/2017 – CURRENT

### **Responsible of the IMAA Satellite receiving station**

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The system is able to receive direct communication in HRPT (High Resolution Picture Transmission) format from polar satellite. An EUMETCast receptions station is also include in the system. Data acquired are then processed from Level 0 to Level 1/2 and stored in the Storage Area Network of the institute. Dr. Lacava is the current responsible of such an infrastructure, managing its maintenance (both ordinary and extraordinary), as well as supporting the development of the automatic elaboration chains of received data (i.e, for MODIS and VIIRS).

## ● **STUDENTS (PH.D, GRADUATING, ERASMUS, MASTER) TUTORING**

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01/03/2012 – 18/04/2013

### **Master Degree co-supervisor**

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Co-supervisor of the Master Degree in Environmental Engineer at the University of Basilicata of the student Carmine Di Polito. Thesis title: Robust Satellite Techniques (RST) for the the detection and monitoring of suspended material in coastal environments.

01/04/2013 – 15/04/2014

### **Master Degree co-supervisor**

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Co-supervisor of the Master Degree in Environmental Engineer at the University of Basilicata of the student Mariangela Liuzzi. Thesis title: Robust Satellite Techniques for low-temperature lava monitoring: the Ol Doinyo Lengai (Tanzania) volcano case study.

15/02/2013 – 14/08/2013

### **Bachelor thesis supervisor**

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Supervisor of the Bachelor Degree in Environmental and Natural Resources Engineering at the Technological Educational Institute of Crete, of the student Paraskevi Toyrnnaviti. Thesis title "Monitoring Crete Coastal sea-water quality by Remote Sensing Techniques".

The work was developed during the ERASMUS training program of the student, carried out under the supervision of dr. Lacava.

01/03/2014 – 31/08/2014

### **Bachelor thesis supervisor**

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Supervisor of the Bachelor Degree in Environmental and Natural Resources Engineering at the Technological Educational Institute of Crete, of the student Alexander Eleftheriou. Thesis title: Robust Satellite Techniques (RST) for monitoring possible thermal anomalies related to seismic activity in Greece.

The work was developed during the ERASMUS training program of the student, carried out under the supervision of dr. Lacava.

01/03/2016 – 31/08/2016

### **Master Degree supervisor**

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Supervisor of the MasterDegree in Environmental and Natural Resources Engineering at the Technological Educational Institute of Crete, of the student Alexander Eleftheriou. Thesis title: Application of Natural Time Analysis of Seismicity in areas where Thermal Anomalies were observed by Robust Satellite Techniques.

The work was developed during the ERASMUS training program of the student, carried out under the supervision of dr. Lacava.

01/02/2016 – 31/07/2016

### **Bachelor thesis supervisor**

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Supervisor of the Bachelor Degree in Environmental and Natural Resources Engineering at the Technological Educational Institute of Crete, of the student Kominou Christina-Efstathia. Thesis title: Comparing RST-FIRES and MOD14 algorithms for detecting forest fires in Attica and Crete.

01/11/2004 – 31/10/2007

### **Ph.d thesis tutor**

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Tutor of the ph.D thesis in Methods and Technologies for the Environmental Monitoring (XX course) at the University of Basilicata of the dr. Elena Vita di Leo. Thesis title: Development of passive microwave techniques for flooding risk mitigation.

01/11/2008 – 31/10/2011

### **Ph.d thesis co-tutor**

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Co-tutor of the ph.D thesis in Methods and Technologies for the Environmental Monitoring (XXIV course) at the University of Basilicata of the dr. Sara Caterina Livia Grimaldi. Thesis title: Robust Satellite Techniques development for the oil spill detection.

01/11/2011 – 31/10/2014

### **Ph.d thesis co-tutor**

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Co-tutor of the ph.D thesis in Environmental Engineering (XXVII course) at the University of Basilicata of the dr. Irina Coviello. Thesis title: Development of advanced techniques for the management of complex satellite data archives.

01/11/2012 – 31/10/2015

### **Ph.d thesis co-tutor**

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Co-tutor of the ph.D thesis in Environmental Engineering (XXVIII course) at the University of Basilicata of the dr. Emanuele Ciancia. Thesis tile: Development and implementation of Robust satellite Techniques (RST) to monitor the chlorophyll-a variability in oligotrophic waters.

01/11/2013 – 31/10/2016

### Ph.d thesis co-tutor

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Co-tutor of the ph.D thesis in Engineering for Innovation and Sustainable Development (XXIX course) at the University of Basilicata of the dr. Carmine di Polito. Thesis title: Development and implementation of Robust Satellite Techniques for suspended particulate matter monitoring in coastal waters.

### Ph.d thesis co-tutor

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Co-tutor of the ph.D thesis in Engineering for Innovation and Sustainable Development (XXX course) at the University of Basilicata of the dr. Valeria Satriano. Thesis title: Advanced satellite techniques for the detection and monitoring of oil spills under critical observation conditions

01/08/2023 – 14/12/2023

### Master Degree supervisor

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Co-supervisor of the Master Degree in Environmental Engineer at the University of Basilicata of the student Iacopo Mancusi. Thesis title: SAR Robust Satellite Techniques (RST) for the mitigation of flood risk.

## ● PUBLICATIONS

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01/01/2001 – CURRENT

### Scientific production

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ORCID ID: <https://orcid.org/0000-0002-6732-4419>

Scopus source: 1.995 Citations; 93 Documents; 23 *h*-index

#### Latest two years Peer-reviewed papers:

1. A. Mazzariello, R. Albano, T. Lacava, S. Manfreda, A. Sole, Intercomparison of recent microwave satellite soil moisture products on European ecoregions, *Journal of Hydrology*, Volume 626, 2023, <https://doi.org/10.1016/j.jhydrol.2023.130311>
2. Satriano, V.; Ciancia, E.; Filizzola, C.; Genzano, N.; **Lacava, T.**; Tramutoli, V. Landslides Detection and Mapping with an Advanced Multi-Temporal Satellite Optical Technique. *Remote Sens.* 2023, 15, 683. <https://doi.org/10.3390/rs15030683>
3. Filizzola, C.; Falconieri, A.; **Lacava, T.**; Marchese, F.; Masiello, G.; Mazzeo, G.; Pergola, N.; Pietrapertosa, C.; Serio, C.; Tramutoli, V. Fire Characterization by Using an Original RST-Based Approach for Fire Radiative Power (FRP) Computation. *Fire* 2023, 6, 48. <https://doi.org/10.3390/fire6020048>
4. M. Faruolo; A. Falconieri; N. Genzano; **T. Lacava**; F. Marchese; N. Pergola. A Daytime Multisensor Satellite System for Global Gas Flaring Monitoring. *IEEE Transactions on Geoscience and Remote Sensing*. 2022, vol. 60, pp. 1-17, Art no. 5001717, doi: <https://doi.org/10.1109/TGRS.2022.3143167>
5. G. Mazzeo; F. De Santis; A. Falconieri; C. Filizzola; **T. Lacava**; A. Lanorte; F. Marchese; G. Nolè; N. Pergola; C. Pietrapertosa; V. Satriano. Integrated Satellite System for Fire Detection and Prioritization. *Remote Sensing*, 2022, vol. 14(2), pp. 1-25, Art no. 335, doi: <https://doi.org/10.3390/rs14020335>
6. E. Ciancia; **T. Lacava**; N. Pergola; V. Vellucci; D. Antoine; V. Satriano; V. Tramutoli. Quantifying the Variability of Phytoplankton Blooms in the NW Mediterranean Sea with the Robust Satellite Techniques (RST). *Remote Sensing*, 2021, vol. 13(24), pp. 1-20, Art no. 5151, doi: <https://doi.org/10.3390/rs13245151>
7. Marchese, F.; Filizzola, C.; **Lacava, T.**; Falconieri, A.; Faruolo, M.; Genzano, N.; Mazzeo, G.; Pietrapertosa, C.; Pergola, N.; Tramutoli, V.; Neri, M. Mt. Etna Paroxysms of February–April 2021 Monitored and Quantified through a Multi-Platform Satellite Observing System. *Remote Sens.* 2021, 13, 3074. <https://doi.org/10.3390/rs13163074>
8. M. Faruolo, A. Caseiro, **T. Lacava** and J. W. Kaiser, "Gas Flaring: A Review Focused On Its Analysis From Space," in *IEEE Geoscience and Remote Sensing Magazine*, vol. 9, no. 1, pp. 258-281, March 2021, doi: 10.1109/MGRS.2020.3007232
9. Peleli, S., Koulia, M. Marchese, F., **Lacava, T.**, Vallianatos, F., Tramutoli, V. Monitoring temporal variations in the geothermal activity of Miocene Lesvos volcanic field using remote sensing techniques and MODIS – LST imagery. *International Journal of Applied Earth Observation and Geoinformation*, Volume 95, March 2021, 102251, <https://doi.org/10.1016/j.jag.2020.102251M>

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*Io sottoscritto Teodosio Lacava, consapevole delle sanzioni penali previste in caso di dichiarazioni mendaci, così come stabilito dal DPR n. 445/2000, dichiaro ai sensi degli artt. 38, 46 e 47 del DPR 455/2000 che tutte le informazioni contenute nel presente curriculum professionale sono veritiere. Autorizzo il trattamento dei miei dati personali ai sensi del Decreto Legislativo 196/2003, GDPR Reg. UE 2016/679 e del D.Lgs 101/2018.*

Potenza , 08/01/2024



Teodosio Lacava