



Giovanni Anconitano

WORK EXPERIENCE

[01/01/2021 – 31/12/2021]

Research Fellow*DIET - Department of Information Engineering, Electronics and Telecommunications***City:** University of Rome "La Sapienza", Rome | **Country:** Italy

Data analysis and development of algorithms for soil moisture estimation from satellite SAR data to support irrigation management in agricultural practices. The research is carried out in the frame of the LabCIMEO (An algorithm development and a field LABORatory for Crop Irrigation Management using EO data) project supported by Regione Lazio.

[23/04/2020 – 22/07/2020]

Research Collaborator*CRAS - Sapienza Aerospace Research Center***City:** University of Rome "La Sapienza", Rome | **Country:** Italy

Working on the SEMIA (Expert System for risk Mitigation in Agriculture) project supported by LAZIO INNOVA.

Main activity: In situ measurements for validation of satellite data extracted in agricultural areas. An algorithm to retrieve the soil moisture content from SAR and optical data was used.

EDUCATION AND TRAINING

[10/12/2024 – 12/12/2024]

IEEE-GRSS International School on SAR Polarimetry*IEEE UK and Ireland Geoscience and Remote Sensing Society Chapter***Address:** University of Stirling, Stirling, United Kingdom |

[14/07/2024 – 17/07/2024]

2024 International Soil Moisture School*IEEE Geoscience and Remote Sensing Society (GRSS)***Address:** Budapest University of Technology and Economics (BME), Budapest, Hungary |

[26/06/2023 – 29/03/2024]

Visiting PhD Student*NASA Jet Propulsion Laboratory***Address:** 4800 Oak Grove Dr, CA, 91109, Pasadena, United States |

- Working on the NISAR soil moisture algorithm test.
- Working on the NISAR science algorithm for generating the cropland products.

[01/10/2022 – 31/03/2023]

Visiting PhD Student*e-GEOS***Address:** Via Tiburtina 965, 00156, Rome, Italy |

Working on the CLEXIDRA (Integration of C, L and X band SAR data for hydrological needs in agriculture) project supported by the Italian Space Agency (ASI).

[01/01/2022 – Current]

PhD in Information And Communication Technology*DIET - Department of Information Engineering, Electronics and Telecommunications***City:** University of Rome "La Sapienza", Rome | **Country:** Italy |

Research Topic: Analysis and development of algorithms for soil moisture estimation and hydrological applications from satellite and airborne SAR data

Curriculum: Applied Electromagnetics

[21/11/2022 – 25/11/2022]

11th ESA Advanced Training Course on Land Remote Sensing: EO for Agriculture and Water*European Space Agency***Address:** Institute of Advanced Studies Kőszeg (iASK), Kőszeg, Hungary |

[10/05/2021 – 14/05/2021]

6th ESA Advanced Course on Radar Polarimetry

European Space Agency

City: Online |

[2016 – 2018] **Master of Science in Space and Astronautical Engineering**

University of Rome "La Sapienza"

City: Rome | Country: Italy |

Thesis: "Electromagnetic emissions and ionospheric variations associated with the initial phase of a seismic event: techniques for their detection from space."

[20/02/2018 – 23/02/2018] **ESA Academy Concurrent Engineering Workshop**

European space Security and Education Centre

City: Redu | Country: Belgium |

Been part of the Trajectory Analysis team.

[10/2016 – 12/2016] **LEDSAT design**

University of Rome "La Sapienza"

City: Rome | Country: Italy |

LEDSAT is a 1U CubeSat equipped with a led-based technology and developed during the "Spacecraft Design" course at University of Rome "La Sapienza".

Been part of the Mission Analysis Team.

[2009 – 2015] **Bachelor of Science in Aerospace Engineering**

University of Rome "La Sapienza"

City: Rome | Country: Italy |

Thesis: "Effects of space radiation on the human organism in long-term missions."

LANGUAGE SKILLS

Mother tongue(s): Italian

Other language(s):

English

LISTENING B2 **READING** B2 **WRITING** B2

SPOKEN PRODUCTION B2 **SPOKEN INTERACTION** B2

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

DIGITAL SKILLS

My Digital Skills

Office Suite (Microsoft Word, Microsoft Excel, Microsoft PowerPoint) | MATLAB Programming Language | Python Programming Language | Polarimetric SAR data Processing and Educational Toolbox (ESA PolSARpro Toolbox) | Sentinel Application Platform (SNAP) | QGIS: Quantum Geographic Information System

CERTIFICATIONS

Certifications

- Level 1 - STK Certification
- Level 2 - STK Master Certification
- Level 3 - STK Grand Master Certification
- PEGASUS: The European Network of Excellence in Aerospace Engineering Education

AWARDS

Best Student Paper Award - Microwave Remote Sensing: Data Processing and Applications III

Paper title: *Polarimetric SAR decompositions for soil moisture retrieval over corn fields in Argentina.*

Presented at SPIE Remote Sensing 2024, 16-19 September 2024, Edinburgh, United Kingdom.

PUBLICATIONS

Sensitivity to soil moisture of Capella X-band high-resolution SAR data over forests

Reference: G. Anconitano, S.-B. Kim

Submitted to Science of Remote Sensing ([Undergoing Review](#))

Polarimetric SAR decompositions for soil moisture retrieval over corn fields in Argentina

Reference: G. Anconitano, L. G. Papale, N. Pierdicca, L. Guerriero, M. A. Acuña

Proc. SPIE 13195, Microwave Remote Sensing: Data Processing and Applications III, 1319508 (18 November 2024).

The NASA ISRO SAR (NISAR) Mission - Validation of Science Measurement Requirements

Reference: B. Chapman et al.

IGARSS 2024 - 2024 IEEE International Geoscience and Remote Sensing Symposium, Athens, Greece, 2024, pp. 6623-6627.

Classification of Crop Area Using PALSAR, Sentinel-1, and Planet Data for the NISAR Mission

Reference: G. Anconitano, S.-B. Kim, B. Chapman, J. Martinez, P. Siqueira, N. Pierdicca

Remote Sensing, 2024, 16, 1975.

CLEXIDRA: Soil Moisture Retrieval on Crop Fields by Integration of Multi-Source Earth Observation data and Modeling

Reference: V. Gentile et al.

2024 IEEE Mediterranean and Middle-East Geoscience and Remote Sensing Symposium (M2GARSS), Oran, Algeria, 2024, pp. 342-346.

Sensitivity of polarimetric SAR decompositions to soil moisture and vegetation over three agricultural sites across a latitudinal gradient

Reference: G. Anconitano, M. Lavallo, Mario A. Acuña, N. Pierdicca

IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, vol. 17, pp. 3615-3634, 2024.

Analysis of polarimetric SAR data for soil moisture retrieval

Reference: G. Anconitano, O. Sarabakha, S. M. SIAD, N. Pierdicca, L. G. Papale, L. Guerriero, M. A. Acuña

IGARSS 2023 - 2023 IEEE International Geoscience and Remote Sensing Symposium, Pasadena, CA, USA, 2023, pp. 1652-1655.

Analysis of multi-frequency SAR data for evaluating their sensitivity to soil moisture over an agricultural area in Argentina

Reference: G. Anconitano, M. A. Acuña, L. Guerriero, N. Pierdicca

IGARSS 2022 - 2022 IEEE International Geoscience and Remote Sensing Symposium, Kuala Lumpur, Malaysia, 2022, pp. 5716-5719.

Sensitivity to soil moisture by applying a model-based polarimetric decomposition to a time-series of airborne radar L-band data over an agricultural area

Reference: G. Anconitano, M. Lavallo, E. Arabini, N. Pierdicca

Proc. SPIE 11861, Microwave Remote Sensing: Data Processing and Applications, 1186105 (12 September 2021).

Sensitivity to soil moisture over an agricultural area by exploiting a model-based polarimetric decomposition

Reference: G. Anconitano, M. Lavallo, N. Pierdicca

IGARSS 2021 - 2021 IEEE International Geoscience and Remote Sensing Symposium IGARSS, Brussels, Belgium, 2021, pp. 5227-5230.

Calibration of different scattering mechanisms for soil moisture retrieval over corn fields

G. Anconitano, L. G. Papale, O. Sarabakha, N. Pierdicca, L. Guerriero, M. A. Acuña

Presented at IGARSS 2024 - 2024 IEEE International Geoscience and Remote Sensing Symposium, Athens, Greece, 2024.

Test of crop area classification using L-band ALOS-2 data in preparation for the NISAR mission

G. Anconitano, S.-B. Kim, A. P. Ruiz, B. Chapman, J. Martinez, P. Siqueira

Presented (poster) at IGARSS 2024 - 2024 IEEE International Geoscience and Remote Sensing Symposium, Athens, Greece, 2024.

ROSE-L and Sentinel-1 soil moisture retrieval: a simulated study

E. Arabini, A. Patacchini, G. Anconitano, N. Pierdicca

Presented (poster) at IGARSS 2024 - 2024 IEEE International Geoscience and Remote Sensing Symposium, Athens, Greece, 2024.

Extraction of different scattering mechanisms for soil moisture retrieval over agricultural fields

G. Anconitano, O. Sarabakha, N. Pierdicca, L. G. Papale, L. Guerriero, M. A. Acuña

Presented at the 8th International Workshop on Retrieval of Bio- & Geo-physical Parameters from SAR Data for Land Applications, Rome, 15-17 November 2023.

Some progresses on InSAR and PolSAR investigations on soil moisture and forest monitoring

N. Pierdicca, G. Anconitano, E. Arabini, C. Telli, L. Guerriero, L. G. Papale, M. Lavalley

Presented at the SPIE Remote Sensing 2023, Amsterdam, Netherlands, 03-06 September 2023.

Integration of C, L and X bands SAR data for soil moisture retrieval over agricultural areas (CLEXIDRA Project)

V. Gentile, A. Ciappa, M. Frezzotti, A. Tricomi, L. Pietranera, G. Anconitano, S. M. SIAD, D. Comite, N. Pierdicca, C. Vittucci, L. G. Papale, L. Guerriero, R. Casa, D. Cillis, M. Campi

Presented at IGARSS 2023 - 2023 IEEE International Geoscience and Remote Sensing Symposium, Pasadena, United States, 2023.

Sensitivity of different scattering mechanisms to soil moisture and vegetation over corn fields in Argentina

G. Anconitano, S. M. SIAD, N. Pierdicca, L. G. Papale, L. Guerriero, M. A. Acuña, O. Sarabakha

Presented at the 11th International Workshop on Science and Applications of SAR Polarimetry and Polarimetric Interferometry and BIOMASS Workshop (PolInSAR & Biomass 2023), Toulouse, France, 19-23 June 2023.

Joint analysis of Sentinel-1 and SAOCOM data sensitivity to soil moisture content over an agricultural area

G. Anconitano, M. A. Acuña, L. G. Papale, L. Guerriero, E. Arabini, N. Pierdicca

Presented (poster) at the ESA Living Planet Symposium 2022, Bonn, Germany, 23-27 May 2022.

Flooding risk evaluation over the Agro Pontino area in central Italy by using a combination of satellite data from Copernicus missions

I. Moriero, G. Anconitano, M. Giannini, A. Celauro, M. Marsella, F. Cioffi

Presented at the SPIE Remote Sensing 2021, Online, 13-16 September 2021.

Airborne SAR polarimetric decompositions for soil moisture retrieval

G. Anconitano, M. Lavallo, N. Pierdicca

Presented at the 10th AIT International Conference "Planet Care from Space", Cagliari, 13-15 September 2021.

PERSONAL DATA

Personal data

In compliance with the GDPR and the Italian Legislative Decree no. 196 dated 30/06/2003, I hereby authorize the recipient of this document to use and process my personal details.

15/02/2025