PERSONAL INFORMATION

Pietro Mastro

National Research Council of Italy (CNR), I Institute for electromagnetic sensing of the environment (IREA), Via Diocleziano 328, Naples, Italy

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Sex M | Date of Birth June 07, 1992 | Place of Birth Trani, Italy | Nationality Italian

Pietro Mastro received the M.S. degree (summa cum laude) in computer engineering and information technology and the Ph.D. degree in engineering for innovation and sustainable development from the University of Basilicata, Potenza, Italy, in 2019 and 2023, respectively. He was a Visiting Scientist with Jet Propulsion Laboratory (JPL), Caltech, Pasadena, CA, USA, in 2023. His main research interest is in the field of remote sensing with active and passive sensors, including the development of InSAR algorithms for the monitoring of surface deformation phenomena induced by subsidence, volcano activities, and earthquakes, with a particular interest toward noise filtering problems and the application of machine learning algorithms. Dr. Mastro was a recipient of the Central-North Italy Chapter best M.S. degree thesis in Geoscience and Remote Sensing Award from the IEEE Geoscience and Remote Sensing Society in 2019.

PROFESSIONAL EXPERIENCES

From Jan 2, 2024

Post doc research Assistant

Institute for electromagnetic sensing of the environment (IREA), National Research Council of Italy (CNR), Naples, Italy

Activity carried out: Study of methods and algorithms based on the use of remote sensing synthetic aperture radar data in support of the ASI PLATINO-1 mission.

From Nov 1, 2022 to Jan 1 2024

Research Assistant

Institute for electromagnetic sensing of the environment (IREA), National Research Council of Italy (CNR), Naples, Italy

Activity carried out: Development of advanced algorithms based on Machine Learning (ML) for processing and analysis of synthetic aperture RADAR (SAR) signals for environmental remote sensing.

From Nov 2, 2019 to 31 October 2022

PhD student in Engineering for Innovation and Sustainable Development

University of Basilicata, Potenza, Italy

Activity carried out: Study and development of advanced algorithms for the retrieval of Earth's atmosphere and surface geophysical parameters from satellite observations operating in the infrared and microwave bands.

From Dec 3, 2018 to Jul. 26,2019

Trainee

IREA of National Research Council, Naples, Italy.

Activity carried out: Study and development of algorithms for the processing of RADAR synthetic aperture signals (SAR), as part of the ESA-CNR project entitled "Integrated analysis of the combined risk of rising sea levels of abandonment and structural risks in coastal regions delta (INUNDATE) ". **PROTOCOL NUMBER: 0001752/2021.**

EDUCATION

July 2024

Participation at Fraunhofer FHR 15th International Summer School on Radar/SAR.

Gustav-Stresemann-Intitut, Bonn Bad Godesberg, Germany

Summer school goal: The International Summer School on Radar/SAR will teach the underlying physical principles and the technologies used by modern radar/SAR systems for civil applications and defense as well as the necessary signal processing steps. The Summer School will place a special focus on imaging radar.

January 9 of 2023

PhD in Engineering for Innovation and Sustainable Development

University of Basilicata, Potenza, Italy

- ***Thesis Title*** Innovative Techniques for the Retrieval of Earth's Surface and Atmosphere Geophysical Parameters: Spaceborne Infrared/Microwave Combined Analyses.

September 2021 Participation at Solar Radiation Based Established Techniques for aTmospheric Observations (SORBETTO) Summer School

Virtual

Summer school goal: Forming young scientists providing them an overview of the current status of solar radiation based techniques, a solid theoretical base, and hands-on experimental activities and building a bridge among International communities involved in atmospheric science for establishing and reinforcing future cooperation on the solar radiation based techniques for atmospheric observations and satellite validation.

July 2021 Participation at InnEO Summer School

R&D Institute of Transilvania University, Brașov, România

Summer school goal: Equip PhD students with skills and resources in the latest artificial intelligence models (machine learning, deep learning, and EO application) and in employability and innovation (open science skills research project management skills, research integrity and ethics skills, communication, management, problem-solving, IPR and IP, and legal skills)

June 2021 Licence to work in the engineering profession

University of Basilicata, Potenza, Italy

Date of achievement: Year 2021 first session.

From Oct. 1, 2016 to Feb. 28, 2019 Master's Degree in Computer Engineering and Information Technology

University of Basilicata, Potenza, Italy

- ***Thesis Title***:" Development of InSAR algorithms for the study of large Earth's surface deformations: The Multiple Aperture Interferometry technique (MAI)."
- ***Score***: Summa cum laude

From Sep. 14, 2011 to Mar. 23, 2016 Bachelor's Degree in Computer Science and Technology

University of Basilicata, Potenza, Italy

- ***Thesis Title*:** "Development of an algorithm for the Recognition of Distributed Targets (DS) in sequences of SAR interferograms."
- ***Score*:** 103/110.

From Sep. 1, 2006 to July. 11, 2011 *Degree of Master Programmer*

PERSONAL SKILLS

Mother Language Italian

Other languages English

- reading: good
- writing: good
- speaking: good

Internships abroad at universities and research institutes

From October 16 to November 4 2023

Scientist Visitor at the Jet Propulsion Laboratory (JPL/NASA) as part of a collaboration to develop algorithms for analyzing areas subject to ground deformation by measurement campaigns from Synthetic Aperture Radar (SAR) sensors mounted on satellite platforms and Unmanned Aerial Vehicles (UAVs) aircraft

TEACHING ACTIVITIES

From March 2023 to June 2023

Supplementary teaching activities for the SAR Techniques for Earth observation class

- Univeristy: University of Basilicata, School of Engineering
- Academic year: 2022-2023
- Total hours of teaching: 5

From April 2021 to September 2021

Tutoring and supplementary teaching activities for the Physics I class.

- Univeristy: University of Basilicata, School of Engineering
- Academic year: 2020-2021
- Total hours of teaching: 80

From November 2019 to December 2019

Tutoring and supplementary teaching activities for the Physics class.

- Univeristy: University of Basilicata, Department of Science (DiS)
- Academic year: 2019-2020
- Total hours of teaching: 20

PARTICIPATION IN SCIENTIFIC PROJECT OR SURVEY CAMPAIGN, PARTICIPATION IN OPERATIONAL UNIT WITHIN A PROJECT

From November 2022

E-crops - technologies for sustainable digital agriculture

- Role: Participant unit
- Title/Funding: Italian National Operating Program (PON)
- Ref: DBA.AD002.200

From January 2023

Metodi di Elaborazione di dati SAR multi-Frequenza per Il monitoraggio del disseSTO idrogeologico (MEFISTO)

- Role: Participant unit
- Title/Funding: Italian National Operating Program (PON)
- Ref: DIT.AD012.135

From July 2020

Global climate change, sea level Rise, Extreme Events and local ground subsidence effects in coastal and river delta regions through Novel and Integrated remote sensing approacHes (GREENISH)

- Role: Young Scientist
- Title/Funding: ESA
- Ref: 4000135320/21/I-NB

From December 2019 to November 2021

Combined MWS and IASI-NG Soundings for Cloud Properties (ComboCloud)

- Role: Participant unit
- Title/Funding Description: Project funded by the European Organization for the Exploitation of Meteorological Satellites (EUMETSAT),
- Ref: EUMETSAT ITT 19/218285
- Contract: EUM/CO/19/4600002352/THH
- Order No. 4500019043

From January 2019 to July 2021

Integrated Analysis of the Combined Risk of Ground Subsidence, Sea Level Rise, and Natural Hazards in Coastal and Delta River Regions (INUNDATE)

- Role: Young scientist ESA
- Title/Funding Description: Project funded by the dall'European Space Agency (ESA) e dal Ministry of Science and Technology (MOST) of China.
- Ref: ESA-MOST 32294
- Contract: ESA-EOP-SD-LE-0244

COMMUNICATION/ATTENDANCE AT INTERNATIONAL CONGRESSES

September 2024

Mastro P., Pepe A., «Change Detection Approaches with Synthetic Aperture Radar Images: Random Forests and Sentinel-1 Observations for Burned Areas Mapping», 13th EARSeL Workshop on Forest Fires 2024, 19-20 September 2024, Milan, Italy

Activity carried out: Poster presentation discussing the potential of the combined use of coherent and incoherent SAR indices and RF-based algorithms for burned areas mapping.

June 2024

Mastro P., Pepe A.: Use of Interferometric Synthetic Aperture Radar (InSAR) Parameters for the Evaluation of Hazardous Conditions in Urbanized Areas, Dragon 5 Final Results and Dragon 6 Kick-off Symposium, 24-28 June 2024, Lisbon, Portugal

Activity carried out: Poster presentation discussing the potential of the use of Interferometric Synthetic Aperture Radar (InSAR) Parameters for the Evaluation of Hazardous Conditions in Urbanized Areas.

July 2023

[**Mastro P.**, Pepe A., "Risk Analysis of Coastal Areas: an AI-Based Perspective Using SAR Data", proceedings of IEEE International Geoscience and Remote Sensing Symposium (IGARSS), July. 12 – 16, 2023 Pasadena, USA.

Mastro P., Boschetti M., De Peppo M., Pepe A., "Use of SAR Based Regressors For Leaf Area Index (LAI) Spatial/Temporal Filling: a Machine Learning (MI)-based Outlook", proceedings of IEEE International Geoscience and Remote Sensing Symposium (IGARSS), July. 12 – 16, 2023 Pasadena, USA.

Activity carried out: Oral presentation discussing the potential of the combined use of coherent and incoherent SAR indices and Machine Learning (ML)-based algorithms for the detection of earth surface changes in coastal zone and for filling spatial and temporal gaps in optical-driven Leaf Area Index (LAI) time series.

October 2022

Mastro P., Pepe A., "Coherent/Incoherent Change Detection Experiments Using Sentinel-1 SAR Data and Random Forests" proceedings of ESA-MOST Dragon 5 Mid-term Result Symposium, 17-21 October, 2022, virtual.

Activity carried out: Poster presentation discussing the potential of the combined use of coherent and incoherent SAR indices and Machine Learning (ML)-based algorithms for the detection of earth surface changes.

July 2022

Mastro P., Cimini D., Romano F., Ricciardelli F., Di Paola F., Hultberg T., August T., Serio C., Masiello G., "On the estimation of key Cloud Parameters from Satellite: an Artificial Intelligence-based retrieval framework", proceedings of Internation Radiation Symposium, 4 – 8 July, 2022, Thessaloniki, Greece.

Activity carried out: oral presentation of a machine learning based statistical regression framework for the prediction of cloud microphysic parameters from satellite passive sensor measurements acquired in the infrared and microwave bands.

May 2022

Masiello G., Serio C. ,Venafra S., **Mastro P.**, Maestri T., Magurno D., Cossich M., Martinazzo M., "The extended All-Sky σ-IASI Forward Model for the Next Generation IASI-NG and FORUM Infrared Atmospheric Sounders: Towards the Analysis and Retrieval of Cloud Microphysical Properties", proceedings of Living Planet Symposium, 23 – 27 May, 2022, Bonn, Germany.

Activity carried out: co-author

Mastro P., Masiello G., Cimini D., Romano F., Ricciardelli F., Di Paola F., Hultberg T., August T., Serio C., "IASI-NG estimation of effective radius for ice and liquid water clouds: a regression approach based on Random Forests", proceedings of Living Planet Symposium, 23 – 27 May, 2022, Bonn, Germany.

Activity carried out: poster presentation of a random forest based statistical regression model for the prediction of cloud drop effective radius of ice and liquid water clouds from IASI-NG spectral measurements.

Mastro P., Calò F., Giordan D., Notti D., Pepe A., "On Monitoring the Impact of Floods and Extreme Weather Events in Protected Cultural Heritage Areas: The Venice Lagoon Case Study", proceedings of Living Planet Symposium, 23 – 27 May, 2022, Bonn, Germany.

Activity carried out: poster presentation of study aims to make a comprehensive analysis of the subsidence deformations that occurs in the Venice Lagoon to evaluate the risks related to extreme flood events that could characterize the area in the near future.

January 2022

Mastro P., Pepe A., "Effective InSAR algorithms for the study of large Earth's surface deformations.", proceedings of the 4th International Electronic Conference on Remote Sensing (ECRS) 2022, 24-27 January 2022, Virtual Symposium.

Activity carried out: Invited oral presentation of the multiple aperture synthetic aperture radar interferometric (MAI) technique and its application in the study of large Earth's surface displacement phenomena.

December 2021

Mastro P., Masiello G., Cimini D., Romano F., Hultberg T., August T., Serio C., "IASI-NG estimation of effective radius for ice and liquid water clouds: a regression approach based on Random Forests", proceeding of IASI conference 6-10 December 2021, Evian, France.

Activity carried out: oral presentation of a random forest based statistical regression model for the prediction of cloud drop effective radius of ice and liquid water clouds from IASI-NG spectral measurements.

September 2021

Mastro P., Masiello G., Cimini D., Romano F., Ricciardelli E., Di Paola F., Hultberg T., August T., Serio C., "On the cloud liquid and ice water content regression: an inversion approach based on neural networks", proceedings of SPIE Remote Sensing Digital Forum, 13 – 17 Sept., 2021, Virtual Symposium.

Activity carried out: oral presentation of a neural network based statistical regression model for the prediction of CLWC and CIWC profiles from IASI-NG and MWS spectral measurements.

Serio C., Masiello G., **Mastro P**., Belviso S., "Effect of degrees of freedom seasonality over time and spatial behaviours of satellite retrievals of atmospheric gases", proceedings of SPIE Remote Sensing Digital Forum, 13 – 17 Sept., 2021, Virtual Symposium.

Activity carried out: co-author

Masiello G., Cersosimo A., Falabella F., **Mastro P.**, Pasquariello P., Serio C., Venafra S., "Assessment of air quality with TROPOMI during COVID-19 pandemic: NO_2 over the Po valley", proceedings of SPIE Remote Sensing Digital Forum, 13 – 17 Sept., 2021, Virtual Symposium.

Activity carried out: co-author

July 2021

Masiello G., Serio C., Venafra S., Cersosimo A., **Mastro P.**, Falabella F., Pasquariello P., "Emissivity Based Indices for Drought and Forest Fire", proceedings of IEEE International Geoscience and Remote Sensing Symposium (IGARSS), July. 12 – 16, 2021 Brussels, Belgium, Virtual Symposium.

Activity carried out: co-author

Mastro P., Pepe A., "The Triplet Network Enhanced Spectral Diversity (T-NESD) Method for the Correction of TOPS Data Co-registration Errors for Non-Stationary Scenes", proceedings of IEEE International Geoscience and Remote Sensing Symposium (IGARSS), July. 12 – 16, 2021 Brussels, Belgium, Virtual Symposium.

Activity carried out: Oral presentation of a novel approach for the correction of misregistration errors in sequences of Terrain Observation with Progressive Scan (TOPS) Sentinel-1 SAR data.

February 2021

Mastro P., Masiello G., Pepe A., Cimini D., Romano F., Ricciardi E., Serio C., "Studio e analisi dei parametri chiave delle nubi: un approccio statistico basato sulle reti neurali", 3° Congresso Nazionale Associazione Italiana di Scienze dell'Atmosfera e Meteorologia (AISAM), Feb. 9-12, Italy, l'Aquila, Italy, Virtual Symposium.

Activity carried out: poster presentation of an investigation of the capability of statistical neural network estimators to predict key cloud parameters.

September 2020

Mastro P., Falabella F. Pepe A., "An Adaptive Statistical Multi-grid DInSAR Technique for Studying Multi-scale Earth Surface Deformation Phenomena", proceedings of IEEE International Geoscience and Remote Sensing Symposium (IGARSS), Sept. 26 – Oct. 2, 2020 Hawaii, USA, Virtual Symposium.

Activity carried out: oral presentation of an adaptive quad-tree-based decomposition method applied to Differential Synthetic Aperture Radar (DInSAR) data.

Mastro P., Pasquariello P. Masiello G., Serio C., "Cloud detection from IASI hyperspectral data: a statistical approach based on neural networks", proceedings of SPIE Remote Sensing Digital Forum, 21 – 25 Sept., 2020, Virtual Symposium.

Activity carried out: oral presentation of an investigation, related to the capability of a statistical cloud detection scheme of IASI spectral measurements, implemented through the use of a multilayer feed-forward neural network.

Masiello G., Cersosimo A., **Mastro P**., Serio C., Venafra S., Pasquariello P., "Emissivity based vegetation indices to monitor deforestation and forest degradation in the Congo Basin rainforest", proceedings of SPIE Remote Sensing Digital Forum, 21 – 25 Sept., 2020, Virtual Symposium.

Activity carried out: co-author

Serio C., Masiello G., **Mastro P.**, Cersosimo A., Pasquariello P., Venafra S., "Simultaneous retrieval of OCS, and CO2 from the IASI shortwave spectral band: assessment of the accuracy of the retrieval products and validation with in situ observations.", proceedings of SPIE Remote Sensing Digital Forum, 21 – 25 Sept., 2020, Virtual Symposium.

Activity carried out: co-author

Mastro P., Serio C., Masiello G., Pepe A., "On the combined use of Multiple Aperture SAR Interferometry (MAI) and Minimum Acceleration combination (MinA) techniques: A temporal investigation of large Earth's surface displacements.", proceedings of Congresso Nazionale Società Italiana di Fisica (SIF), 14 – 18 Sept., 2020, Virtual Symposium.

Activity carried out: oral presentation of an investigation on the combined use of the Multiple-aperture synthetic aperture Radar (SAR) interferometry (MAI) and the Minimum Acceleration combination (MinA) techniques, to measuring the along-track components of the Earth's surface deformation, and the generation of 3-D (2-D) displacement time series, based on the combination of multiplatform SAR data.

June 2019

Mastro P., Falabella F., Zhao Q., Serio C., Pepe A., "Exploitation of a Multi-Grid Differential SAR Interferometry (DInSAR) Approach for the Investigation of Large-Scale Earth's Surface Deformation: Experiments on the Pearl River Delta (PRD) Region," proceedings of ESA-MOST Dragon 4 Symposium, 24-28 June, 2019 Ljubljana, Slovenia.

Activity carried out: poster presentation of an adaptive quadtree-based decomposition method applied to Differential Synthetic Aperture Radar (DInSAR) data that allow to recognize major deformation areas where phase unwrapping operation can be performed more efficiently.

June 2018

Mastro P. Pepe A. (2017), "Adaptive Spatial Multi-looking of Differential SAR Interferograms Sequences using Circular Statistic." proceedings of 12th European Conference on Synthetic Aperture Radar (EUSAR 2018), pp. 1 – 6, June 4 - 7, 2018, Aachen, Germany, ISBN: 978-3-8007-4636-1.

Activity carried out: oral presentation of an adaptive smoothing algorithm aimed at eliminating noise within a sequence of SAR differential interferograms and the recognition of distributed targets of the area observed by the RADAR.

July 2017

Pepe A., **Mastro P.** (2017), "On the use of directional statistics for the adaptive spatial multi-looking of sequences of differential SAR Interferograms", proceedings of IEEE International Geoscience and Remote Sensing Symposium (IGARSS), pp. 3791-3795, 23-28 July Fort Worth, Texas, USA, DOI: 10.1109/IGARSS.2017.8127825.

Activity carried out: oral presentation of an adaptive smoothing algorithm aimed at eliminating noise within a sequence of SAR differential interferograms and the recognition of distributed targets of the area observed by the RADAR.

AWARDS

October 2022

[1] Best poster award presentation in ESA-MOST, DRAGON 5 Mid-Term Result Symposium, Virtual.

January 2020

[2] GRS29-CNI 2019 best Master's Degree thesis in geoscience and remote sensing award, 16 January, Rome, Italy.

June 2019

[3] Best poster award presentation in Solid Earth & Disaster Risk Reduction Terrain Motion & Urban /Infrastructure Assessment, ESA-MOST, DRAGON 4 Symposium, Lubiana, Slovenia.

January 2018

[4] Recipient of the M.Sc Student Award financed by ESA within the ESA-CNR project entitled "INtegrated analysis of the combined Risk of groUND subsidence sea level rise, and nAtural hazards in coasTal delta rEgions (INUNDATE)", Public IREA-CNR Competition n.126.273.PL.001/2017

Editorial board

From December 28 of 2023

Guest Editor of the Special Issue entitled:" Remote Sensing Applications in Marine Environmental Monitoring" of the MDPI Journal of Marine Science and Engineering.
Link: https://www.mdpi.com/journal/jmse/special_issues/40YK17AZKN

Journal Revision

[1] Revisor for Geoscience and Remote Sensing Letters. Manuscript ID: **GRSL-00652-2021**
[2] Revisor for IEEE International Geoscience and Remote Sensing Symposium (IGARSS) 2022, 2023, 2024.
[3] Revisor for IEEE Transaction on Geoscience and Remote Sensing. Manuscript ID: **TGRS-2021-03536**
[4] Revisor for IEEE Transaction on Geoscience and Remote Sensing. Manuscript ID: **TGRS-2021-01224**
[5] Revisor for Journal of South American Earth Sciences. Manuscript ID: **SAMES-D-20-00380R1**
[6] Revisor for Geoscience and Remote Sensing Letters. Manuscript ID: **GRSL-00584-2020**

Covered roles in national and international congresses

From July 18 to July 21 of 2023

Chairman at the 2023 IEEE International Geoscience and Remote Sensing Symposium, Pasadena, CA, USA at the following sessions:
• Session TU3.R15: Earth Observation Technologies for Disaster Risk Management I
• Session TU4.R15: Earth Observation Technologies for Disaster Risk Management II
• Session FR3.R7:SynergisticUseofRemoteSensing,IoT,andAIinAgricultureII

From July 12 to 16 of 2021

Session Manager at the 2021 IEEE International Geoscience and Remote Sensing Symposium, Brussels, Belgium.

Pubblications on ISI Journals

Bibliometric Indices

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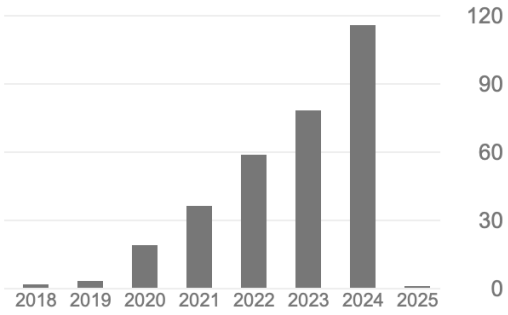

Accessed on Jan 4, 2025

[1] **Mastro P.**, Pepe A, and C. E. Jones, "An Adaptive, Statistical Multiscale Phase Unwrapping Approach to Process Large Swath Interferograms," in *IEEE Transactions on Geoscience and Remote Sensing*, vol. 62, pp. 1-17, 2024, Art no. 5229217, doi: 10.1109/TGRS.2024.3493596.

[2] **Mastro P.**, Peppo M. D., Crema A., Boschetti M., Pepe A., «Statistical characterization and exploitation of Synthetic Aperture radar vegetation indexes for the generation of Leaf area Index time series», International Journal of Applied Earth Observation and Geoinformation, vol. 124, p. 103498, nov. 2023, doi: 10.1016/j.jag.2023.103498.

[3] Ricciardelli E., Di Paola F., Cimini D., Larosa S., **Mastro P.**, Masiello G., Serio C., Hultberg T., August T., Romano F. (2023). A Feedforward Neural Network approach for the detection of optically thin cirrus from IASI-NG. Proceedings of IEEE Transactions on Geoscience and Remote Sensing.

[4] Zhao Q., Pepe A., Zamparelli V., **Mastro P.**, Falabella F., Serio C., Masiello G., Abdikan S., Bayik C., Sanli F. B., Ustuner M., Avsar N. B., Wang J., Chen P., Li Z., Devlin A. T., Calò F. (2023). Remote Sensing Methodologies and Applications: The Main Achievements of the ESA-MOST DRAGON 5 GREENISH Project. Proceedings of Geo-spatial Information Science.

[5] Cimini, D., Serio, C., Masiello, G., **Mastro, P.**, Ricciardelli, E., Di Paola, F., Larosa, S., Gallucci, D., Hultberg, T., August, T., & Romano, F. (2023). Spectrum Synergy for Investigating Cloud Microphysics, Bulletin of the American Meteorological Society, 104(3), E606-E622. doi: https://doi.org/10.1175/BAMS-D-22-0008.1

[6] **Mastro P.**, Masiello G, Serio C, Pepe A., "Change Detection Techniques with Synthetic Aperture Radar Images: Experiments with Random Forests and Sentinel-1 Observations.", Remote Sensing. 2022; 14(14):3323. https://doi.org/10.3390/rs14143323

[7] **Mastro P.**, Masiello G., Serio C., Cimini D., RIcciardelli E., Di Paola F., Hultberg T., August T., Romano F., "Combined IASI-NG and MWS Observations for the Retrieval of Cloud Liquid and Ice Water Path: A Deep Learning Artificial Intelligence Approach," in IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, vol. 15, pp. 3313-3322, 2022, doi: 10.1109/JSTARS.2022.3166992.

[8] Zhao Q., Pan J., Devlin A., Xu Q., Tang M., Li Z., Zamparelli V., Falabella F., **Mastro P.**, Pepe A., "Integrated Analysis of the Combined Risk of Ground Subsidence, Sea Level Rise, and Natural Hazards in Coastal and Delta River Regions.", Remote Sensing. 2021; 13(17):3431. https://doi.org/10.3390/rs13173431

[9] Euillades P, Euillades L. D., Pepe A., **Mastro P.**, Falabella F., Imperatore P., Tang Y., Rossel P. A., 2021, "Recent advancements in multi-temporal methods applied to new generation SAR systems and applications in South America", Journal of South American Earth Sciences. https://doi.org/10.1016/j.jsames.2021.103410.

[10] Wang B., Zhang Q., Pepe A., **Mastro P.**, Zhao C., Lu Z., Zhu W., Yang C., Zhang J., 2021, "Analysis of Groundwater Depletion/Inflation and Freeze–Thaw Cycles in the Northern Urumqi Region with the SBAS Technique and an Adjusted Network of Interferograms", MDPI, Remote Sensing, 13 ,11, 2144. https://doi.org/10.3390/rs13112144.

[11] Pepe A., **Mastro P.**, Jones C. E., 2020 "Adaptive Multilooking of Multitemporal Differential SAR Interferometric Data Stack Using Directional Statistics", IEEE, Transaction on Geoscience and Remote Sensing. 10.1109/TGRS.2020.3030003.

[12] **Mastro P.**, Serio C., Masiello G., Pepe A., 2020 "The Multiple Aperture SAR Interferometry (MAI) Technique for the Detection of Large Ground Displacement Dynamics: An Overview", MDPI, Remote Sensing, 12, 7, 1189. https://doi.org/10.3390/rs12071189.

[13] Serio C., Masiello G., **Mastro P.**, Tobin D. C., 2020 "Characterization of the Observational Covariance Matrix of Hyper-Spectral Infrared Satellite Sensors Directly from Measured Earth Views", MDPI, Sensors, 20, 5, 1492. https://doi.org/10.3390/s20051492.

[14] Zhao Q., Ma G., Wang Q., Yang T., Liu M., Gao W., Falabella F., **Mastro P.**, Pepe A., 2019 "Generation of long-term InSAR ground displacement time-series through a novel multi-sensor data merging technique: The case study of the Shangai coastal area", Elsevier, ISPRS Journal of Photogrammetry and Remote Sensing,154, 10 – 27. https://doi.org/10.1016/j.isprsjprs.2019.05.005.

Conference Articles

[1] **Mastro P.,** Pepe A., «Change Detection Approaches with Synthetic Aperture Radar Images: Random Forests and Sentinel-1 Observations for Burned Areas Mapping», 13th EARSeL Workshop on Forest Fires 2024, 19-20 September 2024, Milan, Italy

[2] **Mastro P.**, Pepe A.: Use of Interferometric Synthetic Aperture Radar (InSAR) Parameters for the Evaluation of Hazardous Conditions in Urbanized Areas, Dragon 5 Final Results and Dragon 6 Kick-off Symposium, 24-28 June 2024, Lisbon, Portugal

[3] Pepe A., Calo F., **Mastro P.**, Falabella F., Zamparelli V., Verde S., Nasti A., Delen A., Bayik Ç., Sanli F. B., Abdikan S., Wang J., Chen P., ZhaoQ.: InSAR Experiments for the Analysis of Ground Changes Within the ESA DRAGON V GREENISH Initiative, Dragon 5 Final Results and Dragon 6 Kick-off Symposium, 24-28 June 2024, Lisbon, Portugal

[4] Pepe A., Calo F., Verde S., Zamparelli V., Francesco F., **Mastro P.**, Qing Z., Li X., Yao Y., Hu G., Zhang Y., Zhou L., Nasti A., Yang T.: Perceiving Natural and Anthropogenic Disaster Conditions and Assessing Risks In Coastal Regions Through Artificial Intelligence, Traditional and Novel Synthetic Aperture RADAR Technologies,Dragon 5 Final Results and Dragon 6 Kick-off Symposium, 24-28 June 2024, Lisbon, Portugal

[5] Barone, A., Fedi, M., Pepe, A., **Mastro, P.**, Tizzani, P., and Castaldo, R.: Evaluating the North-South deformation component from DInSAR data in volcanic framework., EGU General Assembly 2024, Vienna, Austria, 14–19 Apr 2024, EGU24-18593, https://doi.org/10.5194/egusphere-egu24-18593, 2024.

[6] Pepe A., **Mastro P.**, Falabella F., Calò F., "Synthetic Aperture Radar Burst Overlapped Interferometry (BOI) and Multiple Aperture Interferometry (MAI) for the Analysis Of Large Ground Instabilities: Experiments In Mining And Volcanic Sites", proceedings of IEEE International Geoscience and Remote Sensing Symposium (IGARSS), July. 12 – 16, 2023 Pasadena, USA.

[7] **Mastro P.**, Pepe A., "Risk Analysis of Coastal Areas: an AI-Based Perspective Using SAR Data", proceedings of IEEE International Geoscience and Remote Sensing Symposium (IGARSS), July. 12 – 16, 2023 Pasadena, USA.

[8] **Mastro P.**, Boschetti M., De Peppo M., Pepe A., "Use of SAR Based Regressors For Leaf Area Index (LAI) Spatial/Temporal Filling: a Machine Learning (MI)-based Outlook", proceedings of IEEE International Geoscience and Remote Sensing Symposium (IGARSS), July. 12 – 16, 2023 Pasadena, USA.

[9] Ricciardelli E., Di Paola F., Cimini D., Larosa S., **Mastro P.**, Masiello G., Serio C., Hultberg T., August T., Romano F. (2023)., "Thin-cirrus detection from Artificial Neural Network and IASI-NG", proceedings of IEEE International Geoscience and Remote Sensing Symposium (IGARSS), July. 12 – 16, 2023 Pasadena, USA.

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