



Curriculum vitae of Coluzzi Rosa

PERSONAL INFORMATION

 ORCID: 0000-0003-0420-082X

 SCOPUS: 24069904000

Nationality: Italian

e-mail: rosa.coluzzi@cnr.it; PEC: 

MAIN EDUCATION

- 2011 PhD in “Environmental Engineering” (XXIII cycle) School of Engineering/ University of Basilicata/ Potenza, Italy
- 2005 Master’s Degree in Engineering for the Environment and the Territory, University of Basilicata/ Potenza, Italy

CURRENT POSITION

- 2018 Researcher, Level III. CNR, Institute of Methodologies for Environmental Analysis (IMAA)
- Italian National Research Council (CNR), Tito (PZ), Italy

SHORT BIO

I’m a researcher at the Institute of Methodologies for Environmental Analysis (IMAA) of the Italian National Research Council (CNR). My primary focus is on studying landscape patterns and characterizing phenomena and/or processes of the Earth’s surface. My main work involves processing multisensor and multitemporal optical data (satellite and aerial), producing land-cover maps, and measuring ecological parameters using remote sensors. I have also been involved in archaeology, forest fire hazards, urban sprawl, landscape change analysis (soil and water), drought studies from long time series of satellite images, and in situ and satellite integration data studies.

Furthermore, I supervised master’s students on projects involving satellite data applications in socio-economic analysis (in partnership with Sapienza University) and forest vulnerability to extreme climatic events (in collaboration with the University of Basilicata). Between 2016 and 2021, I conducted courses and training sessions on remote sensing, satellite image processing, and physics, including programs at the University of Basilicata and specialized master’s courses such as the GEOMATiK series. I co-convened sessions at international conferences (2023–2024) and contributed to organizing workshops on remote sensing and geoscience communication (2008–2010). As a guest editor and editorial board member, I contributed to journals such as *GIScience & Remote Sensing* and MDPI publications from 2009 to 2024. Since 2009, I have served as a reviewer for important journals, including *Remote Sensing of Environment*, *Land Degradation & Development*, and the *Journal of Archaeological Science*.

Keywords: GIS, image processing, Remote Sensing, EO data integration, land cover and land use changes, spatial analysis; environmental mapping and monitoring.

Main project responsibility

- From 02/02/2024 to 01/02/2026, Principal Investigator for “I.MU.SE.P.N.A.L – Inventariazione dei Muretti a Secco - Parco Nazionale dell'Appennino Lucano Val d'Agri Lagonegrese” Project;
- From 12/09/2022 to 11/09/2024, responsible for the WP2103 (with contributions for WP 1103 and WP 2104) for the Project “SAPP4VU: Sviluppo di Algoritmi prototipali Prisma per la Stima del Danno Ambientale e della Vulnerabilità alla Land Degradation” for the PRISMA mission;
- From July 2018, coordinator (rif. n. 0001535 - IMAA-CNR, 18/07/2018) for the PSR (Rural Development Program) Basilicata 2014-2020 project activities (Misure 16.1, D.G.R. n. 14AE2018/D00093; D00094; D00095 e D00097 del 13/02/2018) about the use of OT data in PSR projects;
- From 06/05/2015 to 12/31/2017, responsible of research activities (Prot. N. 19/15 TERN, 05/06/2015) about the pre-processing dataset of the multisensore platform (multispectral, hyperspectral, LIDAR) for the PON03PE_00024_1 (Laboratorio pubblico-privato per le tecnologie innovative ad alta sostenibilità ambientale nella filiera foresta-legno-energia - “AMBI.TEC.FIL.LEGNO”) project for IMAA-CNR (Istituto di Metodologie per l'Analisi

Ambientale – Consiglio Nazionale delle Ricerche) / TERN (Consorzio Tecnologie per le Osservazioni della Terra ed i Rischi Naturali);

- From 09/24/2014 to 12/31/2017, coordinator for Working Group “Forest Resources – multisensor platforms (WG 1.4) - PON03PE_00024_1 project (Laboratorio pubblico-privato per le tecnologie innovative ad alta sostenibilità ambientale nella filiera foresta-legno-energia - “AMBI.TEC.FIL.LEGNO”)

Publications

Total n. publications: 52 documents (SCOPUS source);

96 co-authors (SCOPUS source);

12 chapters of book; co-author of a book;

more than 35 proceedings.

H-Index: 22 (SCOPUS); 24 (GOOGLE SCHOLAR)

SELECTED PUBLICATIONS

- Pace, L., Coluzzi, R., Imbrenda, V., D’Emilio, M., Falcone, A., Nuzzo, V., & Lanfredi, M. (2024). Combining multi-source data to map vineyards in a specialized district of Basilicata (Southern Italy). *Journal of Maps*, 20(1).
- Imbrenda, V.; Coluzzi, R.; Mariani, F.; Nosova, B.; Cudlinova, E.; Salvia, R.; Quaranta, G.; Salvati, L.; Lanfredi, M. Working in (Slow) Progress: Socio-Environmental and Economic Dynamics in the Forestry Sector and the Contribution to Sustainable Development in Europe. *Sustainability* 2023, 15, 10271. <https://doi.org/10.3390/su151310271>
- Lanfredi M, Coluzzi R, Imbrenda V, Nosova B, Giacalone M, Turco R, Prokopovà M, Salvati L. In-between Environmental Sustainability and Economic Viability: An Analysis of the State, Regulations, and Future of Italian Forestry Sector. *Land*. 2023; 12(5):1001. <https://doi.org/10.3390/land12051001>
- Pace L, Imbrenda V., Lanfredi M., Cudlín P., Simoniello T., Salvati L., Coluzzi R. Delineating the Intrinsic, Long-Term Path of Land Degradation: A Spatially Explicit Transition Matrix for Italy, 1960–2010. *Int. J. Environ. Res. Public Health* 2023, 20(3), 2402; <https://doi.org/10.3390/ijerph20032402>
- Samela C., Coluzzi R., Imbrenda V., Manfreda S., Lanfredi M. Satellite flood detection integrating hydrogeomorphic and spectral indices. *GIScience & Remote Sensing* 59 (1), 1997-2018
- Lanfredi M., Coluzzi R., Imbrenda V., Simoniello T. Editorial for the Special Issue “Advances of Remote Sensing in the Analysis of the Spatial and Temporal Variability of Land Surface”. *Remote Sensing* 14 (23), 6123
- Simoniello T., Coluzzi R., Guariglia A., Imbrenda V., Lanfredi M., C. Samela. Automatic filtering and classification of low-density airborne laser scanner clouds in shrubland environments. *Remote Sensing* 14 (20), 5127
- Imbrenda, V.; Coluzzi, R.; Di Stefano, V.; Egidi, G.; Salvati, L.; Samela, C.; Simoniello, T.; Lanfredi, M. Modeling Spatio-Temporal Divergence in Land Vulnerability to Desertification with Local Regressions. *Sustainability* 2022, 14, 10906. <https://doi.org/10.3390/su141710906>
- Samela, C.; Imbrenda, V.; Coluzzi, R.; Pace, L.; Simoniello, T.; Lanfredi, M. Multi-Decadal Assessment of Soil Loss in a Mediterranean Region Characterized by Contrasting Local Climates. *Land* 2022, 11, 1010. <https://doi.org/10.3390/land11071010>
- Imbrenda, V.; Lanfredi, M.; Coluzzi, R.; Simoniello, T. A Smart Procedure for Assessing the Health Status of Terrestrial Habitats in Protected Areas: The Case of the Natura 2000 Ecological Network in Basilicata (Southern Italy). *Remote Sens.* 2022, 14, 2699. <https://doi.org/10.3390/rs14112699>
- Farid N., Moazzam M.F.U., Ahmad S.R., Coluzzi R., Lanfredi M. Monitoring the impact of rapid urbanization on land surface temperature and assessment of surface urban heat island using Landsat in the megacity (Lahore) of Pakistan. *Frontiers in Remote Sensing*, 3, 2022
- Simoniello, T.; Coluzzi, R.; D’Emilio, M.; Imbrenda, V.; Salvati, L.; Sinisi, R.; Summa, V. Going Conservative or Conventional? Investigating Farm Management Strategies in between Economic and Environmental Sustainability in Southern Italy. *Agronomy* 2022, 12, 597. <https://doi.org/10.3390/agronomy12030597>

- Nickayin, S.S., Coluzzi, R., Marucci, A. et al. Desertification risk fuels spatial polarization in ‘affected’ and ‘unaffected’ landscapes in Italy. *Sci Rep* 12, 747 (2022). <https://doi.org/10.1038/s41598-021-04638-1>
- Coluzzi, R., Bianchini, L., Egidi, G., Cudlin, P., Imbrenda, V., Salvati, L., & Lanfredi, M. (2022). Density matters? Settlement expansion and land degradation in Peri-urban and rural districts of Italy. *Environmental Impact Assessment Review*, 92, 106703.
- Imbrenda, V., Quaranta, G., Salvia, R., Egidi, G., Salvati, L., ProkopovÃ M., Coluzzi, R., Lanfredi, M. (2021). Land Degradation and Metropolitan Expansion In A Peri-Urban Environment. *Geomatics, Natural Hazards and Risk*, 12 (1), 1797-1818.
- Nickayin, S.S., Salvati, L., Coluzzi, R., Lanfredi, M., Halbac-Cotoara-Zamfir, R., Salvia, R., Quaranta, G., Alhuseen, A., Gaburova, L. (2021). What Happens in the City When Long-Term Urban Expansion and (Un)Sustainable Fringe Development Occur: The Case Study of Rome. *ISPRS Int. J. Geo-Inf.*, 10, 231.
- Quaranta, G., Salvia, R., Salvati, L., Paola, V. D., Coluzzi, R., Imbrenda, V., & Simoniello, T. (2020). Long-term impacts of grazing management on land degradation in a rural community of Southern Italy: Depopulation matters. *Land Degradation & Development*, 31(16), 2379-2394.
- Coluzzi, R., Fascetti, S., Imbrenda, V., Italiano, S., Ripullone, F., Lanfredi, (2020) M. Exploring the Use of Sentinel-2 Data to Monitor Heterogeneous Effects of Contextual Drought and Heatwaves on Mediterranean Forests. *Land*, 9(9), 325
- Lanfredi, M., Coluzzi, R., Imbrenda, V., Macchiato, M., & Simoniello, T. (2020). Analyzing Space–Time Coherence in Precipitation Seasonality across Different European Climates. *Remote Sensing*, 12(1), 171.
- Coluzzi, R., D’Emilio, M., Imbrenda, V., Giorgio, G. A., Lanfredi, M., Macchiato, M., & Telesca, V. (2019). Investigating climate variability and long-term vegetation activity across heterogeneous Basilicata agroecosystems. *Geomatics, Natural Hazards and Risk*, 10(1), 168-180.
- Greco, S., Infusino, M., De Donato, C., Coluzzi, R., Imbrenda, V., Lanfredi, M., ... & Scalercio, S. (2018). Late spring frost in Mediterranean beech forests: extended crown dieback and short-term effects on moth communities. *Forests*, 9(7), 388.
- Imbrenda, V., Coluzzi, R., Lanfredi, M., Loperte, A., Satriani, A., & Simoniello, T. (2018). Analysis of landscape evolution in a vulnerable coastal area under natural and human pressure. *Geomatics, Natural Hazards and Risk*, 9(1), 1249-1279.
- Coluzzi, R., Imbrenda, V., Lanfredi, M., & Simoniello, T. (2018). A first assessment of the Sentinel-2 Level 1-C cloud mask product to support informed surface analyses. *Remote sensing of environment*, 217, 426-443. **(Open-access financed by European Space Agency)**
- D’ Emilio, M., Coluzzi, R., Macchiato, M., Imbrenda, V., Ragosta, M., Sabia, S., & Simoniello, T. (2018). Satellite data and soil magnetic susceptibility measurements for heavy metals monitoring: findings from Agri Valley (Southern Italy). *Environmental earth sciences*. 77 (3), 1-7.
- Lanfredi, M.; Coppola, R.; Simoniello, T.; Coluzzi, R.; D’Emilio, M.; Imbrenda, V.; Macchiato, M. (2015). Early Identification of Land Degradation Hotspots in Complex Bio-Geographic Regions, *Remote Sensing*, 7 (6), 8154-8179, DOI: 10.3390/rs70608154, 2015.
- Simoniello, T.; Coluzzi, R., Imbrenda, V., Lanfredi, M., (2015). Land cover changes and forest landscape evolution (1985-2009) in a typical Mediterranean agroforestry system (high Agri Valley), *Natural Hazard and Earth System Sciences*, 15(6), 1201-1214, DOI: 10.5194/nhess-15-1201-2015.
- Lasaponara, R., Coluzzi, R., & Masini, N. (2011). Flights into the past: full-waveform airborne laser scanning data for archaeological investigation. *Journal of Archaeological Science*, 38(9), 2061-2070.

According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV. I, the undersigned, Rosa Coluzzi, are aware of the criminal sanctions provided for in the event of false declarations, as established by Presidential Decree no. 445/2000, I declare pursuant to articles. 38, 46 and 47 of Presidential Decree 455/2000 that all the information contained in this professional curriculum is true. I authorize the processing of my personal data pursuant to Legislative Decree 196/2003, GDPR EU Reg. 2016/679 and Legislative Decree 101/2018.

Potenza, 15 January 2025

Rosa Coluzzi