

Leonardo Daniel Euillades

Date of birth: [REDACTED] | Nationality: Argentinian | Phone number: [REDACTED] (Mobile) | Phone number:

[REDACTED] | Email address [REDACTED] |

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[REDACTED]

WORK EXPERIENCE

2018 – CURRENT Argentina

ASSOCIATE RESEARCHER CONSEJO NACIONAL DE INVESTIGACIONES CIENTÍFICAS Y TÉCNICAS (CONICET)

2015 – CURRENT Córdoba, Argentina

PROFESSOR FACULTAD DE MATEMÁTICA, ASTRONOMÍA Y FÍSICA UNIVERSIDAD NACIONAL DE CÓRDOBA

Course: SAR Interferometry and Applications in the Master's in Space Applications for Early Warning and Response to Emergencies (Aplicaciones Espaciales de Alerta y Respuesta Temprana a Emergencias - MAEARTE. Comisión Nacional de Actividades Espaciales (CONAE).

2011 – CURRENT Mendoza, Argentina

PROFESSOR FACULTAD DE CIENCIAS AGRARIAS, UNIVERSIDAD NACIONAL DE CUYO

Course: Remote Sensing in Irrigated Agriculture in the Master's Degree in Irrigation and Drainage

2010 – CURRENT Mendoza, Argentina

ASSISTANT PROFESSOR FACULTAD DE INGENIERÍA, UNIVERSIDAD NACIONAL DE CUYO

Courses: Numerical Calculus and Numerical Methods, Numerical Calculus and Computing

2000 – CURRENT Mendoza, Argentina

RESEARCHER INSTITUTO CEDIAC, FACULTAD DE INGENIERÍA, UNIVERSIDAD NACIONAL DE CUYO

2023 Napoli, Italy

VISITING RESEARCHER ISTITUTO PER IL RILEVAMENTO ELETTROMAGNETICO DELL'AMBIENTE (IREA)

In the framework of the project "Generación de productos interferométricos y polarimétricos de datos de radar de apertura sintética (SAR) en Banda L adquiridos por los sensores argentinos SARAT (aerotransportado) y SAOCOM (satelital)" corresponding to its second year.

2022 Mendoza, Argentina

PROFESSOR VDAP, GEOVOL & FACULTAD DE INGENIERÍA, UNIVERSIDAD NACIONAL DE CUYO.

Virtual course on SAR Interferometry and deformation time-series generation applied to active volcanoes monitoring. Organized by the Volcano Disaster Assistance Program (VDAP), Asociación de Geodesia Volcánica (GEOVOL) and Facultad de Ingeniería, Universidad Nacional de Cuyo.

2022 Napoli, Italy

VISITING RESEARCHER ISTITUTO PER IL RILEVAMENTO ELETTROMAGNETICO DELL'AMBIENTE (IREA)

In the framework of the project "Generación de productos interferométricos y polarimétricos de datos de radar de apertura sintética (SAR) en Banda L adquiridos por los sensores argentinos SARAT (aerotransportado) y SAOCOM (satelital)"

2021 Quito, Ecuador

PROFESSOR VOLCANO DISASTER ASSISTANCE PROGRAM (VDAP)

Course: InSAR processing and volcano deformation modelling in the framework of the third Operative Meeting of the GEOVOL Association held at Escuela Politécnica Nacional of Ecuador.

● EDUCATION AND TRAINING

26/08/2004 Mendoza, Argentina

INGENIERO EN INFORMÁTICA (COMPUTER SCIENCE ENGINEERING) Universidad de Mendoza

Website www.um.edu.ar

29/10/2010 Mendoza, Argentina

DOCTOR EN INGENIERÍA (PHD IN ENGINEERING) Universidad Nacional de Cuyo

Website www.uncuyo.edu.ar | Final grade Aprobado sobresaliente |

Thesis Desarrollo de algoritmos para el procesamiento de imágenes de radar

● ADDITIONAL INFORMATION

PUBLICATIONS

Interferometric Assessment of SAOCOM-1 TOPSAR Data – 2023

Jorge A. Euillades, Yenni L. Roa, **Leonardo D. Euillades**, Pablo A. Euillades, Patricia A. Rosell Edinson A. Solarte, Stefano Perna

IEEE Geoscience and Remote Sensing Letters, DOI 10.1109/LGRS.2023.3347030

Monitoring volcano deformation at La Soufrière, St. Vincent during the 2020-21 eruption with insights into its magma plumbing system architecture

– 2023

Michal Camejo-Harry, Karen Pascal, Pablo Euillades, Raphaël Grandin, Ian Hamling, **Leonardo Euillades**, Rodrigo Contreras-Arratia, Graham A. Ryan, Joan L. Latchman, Lloyd Lynch and Minjeong Jo

Geological Society of London Special Publication, 0305-8719

Application of a temporal decorrelation model using Sentinel-1 SAR data to Detect volcanic ash deposits related to the 2020 Taal volcano eruption

– 2023

Camilo Naranjo, Pablo Euillades, Guillermo Toyos, **Leonardo Euillades**, Gustavo Villarosa

Remote Sensing Applications: Society and Environment, 2352-9385

Monitoring Volcanic Deformation - Encyclopedia of Geology, 2nd edition – 2021

Maurizio Battaglia, Jorge Alpala, Rosa Alpala, Mario Angarita, Dario Arcos, **Leonardo Euillades**, Pablo Euillades, Cyrill Muller, Lourdes Narváez

ELSEVIER, ISBN 978-0-08-102909-1

On the feasibility of applying orbital corrections to SAOCOM-1 data with Free Open Source Software (FOSS) to generate digital surface models: a case study in Argentina

– 2021

S. Seppi, E. A. Solarte Casanova, Y. Roa, **L. D. Euillades**

ISPRS Archives, doi 10.5194/isprs-archives-XLVI-4-W2-2021-167-2021

Improving forest detection with machine learning in remote sensing data – 2021

G. Caffaratti, M. Marchetta, **L. D. Euillades**, P. Euillades, R. Forradellas

Remote Sensing Applications: Society and Environment, doi 10.1016/j.rsase.2021.100654

Recent advancements in multi-temporal methods applied to new generation SAR systems and applications in South America

– 2021

P. Euillades, **L. D. Euillades**, A. Pepe, P. Mastro, F. Falabella, P. Imperatore, Y. Tang, P. Rosell

Journal of South American Earth Sciences, doi 10.1016/j.jsames.2021.103410

Ground deformation at the Cerro Blanco caldera: A case of subsidence at the Central Andes BackArc – 2021

L. Vélez, E. Bustos, **L. D. Euillades**, M. Blanco, J. López, I. Barbero, M. Berrocoso, A. Gil Martinez, J. Viramonte

Journal of South American Earth Sciences, doi 10.1016/j.jsames.2020.102941

Detection of active landslides by DInSAR in Andean Precordillera of San Juan, Argentina – 2021

G. Acosta, A. Rodriguez, P. Euillades, **L. D. Euillades**, F. Ruiz, P. Rosell, M. Sanchez, F. Leiva, J. Ariza, H. García

Journal of South American Earth Sciences, doi 10.1016/j.jsames.2021.103205

First assessment of the interferometric capabilities of SAOCOM-1A: New results over the Domuyo Volcano, Neuquén Argentina

– 2021

Y. Roa, P. Rosell, A. Solarte, **L. D. Euillades**, F. Carballo, S. García, P. Euillades

Journal of South American Earth Sciences, doi 10.1016/j.jsames.2020.102882

On The Interferometric And Polarimetric Capabilities Of The Argentinian L-Band Sarat System – 2020

Y. Roa, M. Azcueta, P. Berardino, C. Esposito, **L. D. Euillades**, P. Euillades, A. Natale, S. Perna

IEEE Latin American GRSS & ISPRS Conference (LAGIRS), doi 10.1109/LAGIRS48042.2020.9165681

Subsidence in Maceio, Brazil, characterized by DInSAR and inverse modeling – 2020

P. Euillades, **L. D. Euillades**, P. Rosell, Y. Roa

ISPRS Annals of the Photogrammetry, doi 10.5194/isprs-annals-IV-3-W2-2020-7-2020

Source Model for Sabancaya Volcano Constrained by DInSAR and GNSS Surface Deformation Observation – 2020

G. Boixart, L. Cruz, R. Miranda, P. A. Euillades, **L. D. Euillades**, M. Battaglia

Remote Sensing, vol. 12, doi 10.3390/rs12111852, ISSN 2072-4292

Monitoring Volcanic Deformation - Reference Module in Earth Systems and Environmental Sciences – 2019

Maurizio Battaglia, Jorge Alpala, Rosa Alpala, Mario Angarita, Dario Arcos, **Leonardo Euillades**, Pablo Euillades, Cyril Muller, Lourdes Narváez

ELSEVIER, ISBN 978-0-12-409548-9

Co-eruptive subsidence and post-eruptive uplift associated with the 2011–2012 eruption of Puyehue-Cordón Caulle, Chile, revealed by DInSAR

– 2017

P. A. Euillades, **L. D. Euillades**, Mauro H. Blanco, Laura Velez, Pablo Grosse, Gustavo Sosa

Journal of Volcanology and Geothermal Research, vol. 244, pp. 257-269, ISSN 0377-0273

Detection of glaciers displacement time-series using SAR – 2016

L. D. Euillades, P. A. Euillades, Natalia Riveros, Mariano Masiokas, Lucas Ruiz, Pierre Pitte, Stefano Elefante, Francesco Casu, Sebastián Balbarani

Remote Sensing of Environment, vol. 184, pp. 188-198, ISSN 0034-4257

CONFERENCE PROCEEDINGS

Characterizing volcano deformation with DInSAR and GNSS data: the Sotará Volcano case study

EGU24, Vienna, Austria

Pablo Euillades, Rosa Alpala, **Leonardo Euillades**, Jorge Alpala, Patricia Rosell, Yenni Roa and Maurizio Battaglia

2024

Non-synchronized TOPSAR interferometry: the SAOCOM-1 case study

2024 IEEE International Geoscience and Remote Sensing Symposium, Athens, Greece

Jorge A. Euillades, **Leonardo D. Euillades**, Pablo A. Euillades, Yenni L. B Roa, Stefano Perna

Under review

2024

Estimation of soil permittivity through polarimetric SAOCOM-1 data

2024 IEEE International Geoscience and Remote Sensing Symposium, Athens, Greece

Antonio Natale, Matias Barber, Paolo Berardino, Carmen Esposito, **Leonardo Euillades**, Pablo Euillades, Riccardo Lanari, Yenni Roa, Patricia Rosell, Stefano Perna

Under review

2024

A First Quantitative Assessment of the P-SBAS Approach Capability to Retrieve SAOCOM-1 DInSAR Deformation Time series over the Italian Territory

15th European Conference on Synthetic Aperture Radar, Munich, Germany

Claudio De Luca, Yenni Lorena Belen Roa, Manuela Bonano, Francesco Casu, **Leonardo Euillades**, Pablo Euillades, Marianna Franzese, Michele Manunta, Muhammad Yasir, Giovanni Onorato, Pasquale Striano, Ivana Zinno and Riccardo Lanari

2024

Monitoring Based on Differential Radar Interferometry (DInSAR) of the Activity of San Miguel Volcano, El Salvador

EGU24, Vienna, Austria

Mirian Villalobos, Cristiano Tolomei, Pablo Euillades, Christian Bignami, **Leonardo Euillades**, Elisa Trasatti

2023

New advances of the P-SBAS approach for the generation of SAOCOM-1 L-band DInSAR time-series

2023 IEEE International Geoscience and Remote Sensing Symposium, Pasadena, California, USA

Claudio De Luca, Yenni Lorena Belen Roa, Manuela Bonano, Francesco Casu, Pablo Euillades, **Leonardo Euillades**, Marianna Franzese, Michele Manunta, Yasir Muhammad, Giovanni Onorato, Pasquale Striano, Ivana Zinno, Riccardo Lanari

2023

On the P-SBAS Processing Chain New Developments For The Generation Of SAOCOM-1 Advanced DInSAR Products

Fringe 2023, Leeds, UK

Claudio De Luca Yenni Lorena Belen Roa Manuela Bonano Francesco Casu **Leonardo Euillades** Pablo Euillades Marianna Franzese Michele Manunta Yasir Muhammad Giovanni Onorato Pasquale Striano Ivana Zinno Riccardo Lanari

2022

Monitoreo de deformación en áreas de interés petrolero mediante un sistema de procesamiento semi-automático

Monitoring deformation in petroleum-related areas with a semi-automatic processing system

11 Congreso de Exploración y Desarrollo de Hidrocarburos, Mendoza, Argentina
P. Euillades, **L. Euillades**, A. Solarte

2021

Change Detection for Mapping Volcanic Ash Fall Using Sentinel-1 Data

Fringe 2021 (Virtual)
Camilo Naranjo, Pablo Euillades, Guillermo Toyos, **Leonardo Euillades**, Gustavo Villarosa

2019

Mitigation of atmospheric noise in DinSAR technique

XVIII Workshop on Information Processing and Control (RPIC), Bahía Blanca, Argentina
P. Rosell, **L. Euillades**, P. Euillades

2019

Deep Learning Architecture for Forest Detection in Satellite Data

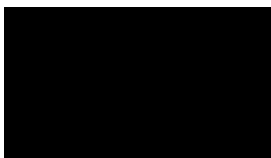
XXV Congreso Argentino de Ciencias de la Computación CACIC 2019, Córdoba, Argentina
G. Caffaratti, M. Marchetta, R. Forradellas, **L. Euillades**, P. Euillades

2018

Caracterización de campos de deformación cortical mediante información geo-espacial

Characterization of cortical deformation fields using geospatial information

10° Congreso de Exploración y Desarrollo de Hidrocarburos, Mendoza, Argentina
Euillades, L., Euillades, P., N. Isuani, M. Noguerol, P. Rosell



2018

Levantamiento y subsidencia superficial vinculados a la operación de yacimientos de petróleo y gas. Casos de estudio en Argentina

Surface uplift and subsidence related to oil and gas field operations. Case studies in Argentina

10° Congreso de Exploración y Desarrollo de Hidrocarburos, Mendoza, Argentina
P. Euillades, **L. Euillades**, N. Isuani, P. Rosell

2018

Análisis preliminar de colapso de pozos en anticlinal Perales Sur: ¿una respuesta a la heterogeneidad del reservorio multicapa?

Preliminary analysis of well collapse in Perales Sur anticline: is it a response to multilayer reservoir heterogeneity?

10° Congreso de Exploración y Desarrollo de Hidrocarburos, Mendoza, Argentina
Salvarredy Aranguren, M., Rearte, P., Aguil, B., González, G., Chialvo, C., Toledo, L., Albano, J., Manceda, R., Fuzul, E., Euillades, P., **Euillades, L.**

MANAGEMENT AND LEADERSHIP SKILLS

Advisor PhD Thesis "Los radares FMCW SAR y su aplicación en la caracterización de campos de deformación"

"FMCW SAR radars and their application in deformation field characterization"

Student: Ing. Jorge Alejandro Euillades
In progress

Advisor PhD Thesis "Desarrollo de un procesador interferométrico para la generación de Modelos Digitales de Elevación de Alta Precisión a partir de datos SAOCOM en la República Argentina"

"Development of an interferometric processor for the generation of High Accuracy Digital Elevation Models from SAOCOM data in the Argentine Republic"

Student: Ing. Edinson Andrés Solarte Casanova
Institution: Facultad de Ciencias Exactas, Física y Naturales, Universidad Nacional de Córdoba. Argentina
In progress

Co-Advisor PhD Thesis "Dinámica de geoformas periglaciares en un sector de la quebrada de Agua Negra. Paso Internacional Argentina - Chile, Andes Desérticos, Provincia de San Juan"

"Dynamics of periglacial geoforms in a sector of the Agua Negra ravine. Argentina - Chile International Passage, Desert Andes, San Juan Province"

Student: Lic. Erika Pellegrini
In progress

Co-Advisor PhD Thesis "Desarrollo de un procesador interferométrico para SAR aerotransportado"

"Development of an interferometric airborne SAR processor"

Student: Lic. Yenni Roa
Institution: Facultad de Ciencias Exactas y Naturales Naturales. Universidad Nacional de Cuyo. Mendoza. Argentina.
In progress

Co-Advisor PhD Thesis "Evolución de la deformación en el complejo volcánico Cerro Blanco (Puna Austral) utilizando imágenes satelitales ópticas, radar y datos geofísicos"

"Deformation evolution in the Cerro Blanco volcanic complex (Puna Austral) using optical satellite imagery, radar and geophysical data"

Student: Lic. José Francisco Solano López
Institution: Facultad de Ciencias Naturales. Universidad Nacional de Salta. Argentina.
Completed

Co-Advisor PhD Thesis "Monitoreo de Deformación Cortical mediante Imágenes de Radar (Banda X)"

"Cortical Deformation Monitoring by Radar Imaging (X-Band)"

Student. Ing. Sebastián Balbarani
Institution: Facultad de Ingeniería. Universidad Nacional de Cuyo. Argentina.
Completed

Advisor Master Thesis: "Análisis de series temporales DInSAR en el sur de los Andes Colombianos"

"DInSAR time-series analysis in the southern Colombian Andes"

Student: Jorge Andrés Rosero Legarda

Institution: Maestría en Aplicaciones de Información Espacial, Instituto de Altos Estudios Espaciales Mario Gulich - CONAE y Facultad de Matemática, Astronomía y Física (FAMAF), Universidad Nacional de Córdoba, Argentina.
In progress

Advisor Master Thesis "Análisis preliminar de las capacidades interferométricas de SAOCOM utilizando datos adquiridos en modo TOPSAR"

"Preliminary analysis of SAOCOM's interferometric capabilities using TOPSAR mode acquired data"

Student: Ing. Jorge A. Euillades

Institution: Maestría en Aplicaciones de Información Espacial, Instituto de Altos Estudios Espaciales Mario Gulich - CONAE y Facultad de Matemática, Astronomía y Física (FAMAF), Universidad Nacional de Córdoba, Argentina.
Completed

Advisor Master Thesis "Detección de Blancos Móviles Utilizando Técnicas GMTI en Imágenes SAR"

"Moving Target Detection Using GMTI Techniques in SAR Imaging"

Student: Ing. Alejandro Iván Testa

Institution: Maestría en Aplicaciones de Información Espacial, Instituto de Altos Estudios Espaciales Mario Gulich - CONAE y Facultad de Matemática, Astronomía y Física (FAMAF), Universidad Nacional de Córdoba, Argentina.
Completed

Co-Advisor Master Thesis "Análisis comparativo entre las técnicas InSAR PSI y SBAS aplicadas a la medición de las deformaciones del complejo volcánico Cordón Caulle (40.5°S) - Andes del Sur"

"Comparative analysis between InSAR PSI and SBAS techniques applied to the measurement of deformations of the Cordón Caulle volcanic complex (40.5°S) - Southern Andes"

Student: Geo. Rayner De Ruyt

Institution: Maestría en Aplicaciones de Información Espacial, Instituto de Altos Estudios Espaciales Mario Gulich - CONAE y Facultad de Matemática, Astronomía y Física (FAMAF), Universidad Nacional de Córdoba, Argentina.
Completed

External Advisor Research project "Correcciones atmosféricas en interferometría SAR utilizando la red SIRGAS-CON"

"Atmospheric corrections in SAR interferometry using SIRGAS-CON network"

Responsible: Ing. Patricia Rosell

Institution: Facultad de Ingeniería. Universidad Maza. Mendoza. Argentina.

Editor of the Special Issue "New advances on SAR Interferometry in South America" Associated editor of the special issue published in the Journal of South American Earth Sciences, ISSN 0895-9811
2019

PROJECTS

2022 - CURRENT

Volcanic deformation and change detection at the Calbuco and Planchon Peteroa active volcanoes of the Southern Andes Volcanic Zone (Argentina-Chile) using L-band SAR data Researcher. Granted by Japanese Spatial Agency (JAXA)

2021 - CURRENT

Análisis preliminar de las capacidades interferométricas de SAOCOM utilizando datos adquiridos en modo TOPSAR *Preliminary analysis of SAOCOM's interferometric capabilities using data acquired in TOPSAR mode*

PI. Granted by Secretaría de Investigación, Internacionales y Posgrado, Universidad Nacional de Cuyo, N° Res. R_RE_3713_2022, 06/B031-T1

2021 - CURRENT

Generación de productos interferométricos y polarimétricos de datos de radar de apertura sintética (SAR) en Banda L adquiridos por los sensores argentinos SARAT (aerotransportado) y SAOCOM (satelital) *Generation of interferometric and polarimetric products from L-band synthetic aperture radar (SAR) data acquired by the Argentinean sensors SARAT and SAOCOM*

Researcher. Granted by MINCyT (Argentina) & Ministero de Afari Esteri (Italia)

2023

Crustal Deformation Characterization related with Non Conventional Oilfields in Neuquen, Argentina Contract granted by GEODATATECH and Pampa Energía, Argentina.

2021 – 2023

DInSAR Multi-frequenza/Multi-piattaforma per analisi Multi-scala dei movimenti del suolo *DInSAR Multi-frequency/ Multi-platform for Multi-scale analysis of ground motions*

Researcher. Granted by Italian Space Agency (ASI)

2021 – 2023

MEFISTO - Metodi di Elaborazione di dati SAR multi-Frequenza per Il monitoraggio del disseSTO idrogeologico
MEFISTO - Multi-Frequency SAR Data Processing Methods for The Monitoring of Hydrogeological Disruption

Researcher. Granted by Italian Space Agency (ASI)

2022

Crustal Deformation Characterization of Diadema Gas Reservoir, Argentina by MT-InSAR Contract granted by YPF-Tecnología (Y-TEC) Argentina

2019 – 2021

Análisis de deformación producida en yacimientos maduros mediante procesamiento de imágenes de radar de apertura sintética. Aplicación a casos de las Cuencas Cuyana y Neuquina *Deformation analysis in mature reservoirs by processing synthetic aperture radar images. Application to cases of the Cuyana and Neuquén Basins*

PI. Granted by Secretaría de Investigación, Internacionales y Posgrado, Universidad Nacional de Cuyo, N° Res. 4142/19, 06/B366.

2019 – 2021

Análisis Interferométrico de Imágenes SAR adquiridas desde una plataforma aerotransportada *Interferometric analysis SAR images acquired from an airborne platform*

Researcher. Granted by Secretaría de Investigación, Internacionales y Posgrado, Universidad Nacional de Cuyo, N° Res. 4142/19.

2018

Crustal Deformation Characterization of Lomas Del Cuy Oilfield, Argentina by MT-InSAR Contract granted by YPF-Tecnología (Y-TEC) Argentina

2016 – 2018

Estudio de la dinámica de glaciares de roca en los Andes Centrales Argentinos *Study of the dynamics of rock glaciers in the Central Argentine Andes*

PI. Granted by Secretaría de Ciencia, Técnica y Posgrado, Universidad Nacional de Cuyo.

2012 – 2016

Interferometric Capabilities Analysis of the SAOCOM 1 SAR Satellite Contract granted by CONAE (Space Agency of Argentina)

NETWORKS AND MEMBERSHIPS

2018 – CURRENT

Asociación Latinoamericana de Geodesia Volcánica Responsible for training members of Latin American Volcanological Observatories in the use of radar images for deformation detection applied to volcanic activity monitoring.

