STEFANELLI – CURRICULUM VITAE

PERSONAL INFORMATION	
Last Name	STEFANELLI
First Name	MARCO
Date of birth	11/02/1990
Nationality(ies)	ITALIAN
Address	VIA ISTRIA, 48
City	VEGLIE (LECCE)
Country	ITALY
Personal Email	marko.stefanelli@gmail.com
Personal Web Page	https://stfmrc.github.io/MarcoStefanelli/

LANGUAGES	
Native language(s):	ITALIAN
Other Languages:	English, fluent Croatian, beginner

TECHNICAL SKILLS		
Physics	Earth System Physics	Atmospheric modelling (Climate, Numerical Weather Prediction) Ocean modelling (coastal and open sea environment) Climate change processes Earthquakes and volcanic processes Multiscale processes Urban-Climate interactions

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Mathematics	Applied mathematics & Statistics	Numerical modelling and simulations Numerical model validation Numerical methods Statistical modelling Multivariate analysis Data assimilation techniques Model skill quantification Uncertainty quantification Structured and Unstructured grid modelling Partial differential equations
Observational data	Sources and variables	In situ observations for atmosphere and ocean (Temperature, Salinity, Precipitation, Wind, Cloud) Weather radar data (Reflectivity) Satellite observations for atmosphere and ocean (Sea Level Anomaly, Sea Surface Temperature)
Programming Skills	Programming Languages	Python, advanced Fortran, advanced Linux/Unix, advanced LaTex, advanced
	NetCDF libraries	NCO, CDO, NCAP (advanced)
	HPC	SLURM, PBS, LSF (advanced)
	Informatic tools	Jupyter, Github
	Data Type	GRIB, HDF5, NetCDF, Binary, CSV
Technical Skills	Big Data and Machine Learning	Atmosphere/Ocean ML applications ML for environmental prediction Observations-Model integration Pattern recognition
	Visualization & Reporting	Python (Matplotlib, Seaborn, Cartopy, Jupyter Notebook) Keynote presentations and Talks (highly advanced)

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EDUCATION	
Start & End date	Degree (highest degree first*)*
01/11/2019 - 31/01/2023	PhD in FUTURE EARTH, CLIMATE CHANGE AND SOCIETAL CHALLENGES, University of Bologna, Italy (Inter-disciplinary programs involving natural sciences, mathematics and statistics, Physics, Earth sciences, Data Science, Machine Learning and Climate Science) **Dissertation title:** Data assimilation for advanced cross-scale unstructured-grid ocean modeling, Supervisor: Dr. Ivan Federico, Co-supervisors: Dr. Eric Jansen, Dr. Ali Aydogdu and Prof. Nadia Pinardi. **Abstract:** https://amsdottorato.unibo.it/id/eprint/10785/ **Download:** https://amsdottorato.unibo.it/id/eprint/10785/1/Thesis_Stefanelli.pdf
01/09/2014 - 19/03/2018	MASTER'S DEGREE in EARTH SYSTEM PHYSICS, University of Trieste, Italy **Dissertation title:** A study of urbanization effects on the West-Africa monsoon, Supervisor: Prof. Filippo Giorgi
28/10/2009 - 12/12/2013	BACHELOR GRADUATION in PHYSICS, University of Salento, Italy **Dissertation title:** Mean Sea Level: processes, observations and its course in the Mediterranean Sea, Supervisor: Prof. Piero Lionello

PROFESSIONAL EXPERIENCE	
Start & End date	Job position and description
03/04/2024 - CURRENT	SMASH (MSCA COFUND) postdoctoral researcher at the Faculty of Mathematics and Physics (FMF) at the University of Ljubljana (Slovenia). My research involves Data assimilation, Artificial Intelligence and Weather forecasting. The main goal is to improve the forecast of severe precipitation events using weather radar data, by developing AI-based solutions.
01/02/2023 - 01/03/2024	RESEARCHER, Euro-Mediterranean Centre on Climate Change (CMCC), Italy Finalize the papers based on the PhD results, continue the research in collaboration with Imperial College, improve the work done during the PhD and build products to validate ocean models output against observations.
03/04/2018 - 16/04/2019	RESEARCHER, The Abdus Salam International Centre for Theoretical Physics (ICTP), Italy Research on the urbanization effects on the West Africa Monsoon, supervised by Prof. Filippo Giorgi in the Earth System Physics research group.

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	TEACHING EXPERIENCE	
Period	Organisation	Course, level & subject
12/04/2018 - 14/06/2018	ISIS Leonardo Da Vinci, Italy	Secondary school head teacher in computer and energetic science

Awards, grants & fellowships
• Puglia Region Youth Fund (PIN) Ref. 2192. • Second place at Sergio Borghi award – Fondazione Osservatorio Meteorologico Milano Duomo https://www.youtube.com/watch?v=R5q-pwXo9dY&t=7s • Marie Curie cofunded postdoctoral grant in Slovenia (SMASH)
Academic co-operations
• Imperial College London in the Data Science group
Non-academic co-operations
• Euro-Mediterranean Centre on Climate Change • Italian high school teacher society

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Conference presentations
• 27/09/2022 - 28/09/2022: Interreg Italia-Croatia, Ocean modelling workshop, Venice, Italy • 23/05/2022 - 27/05/2022: EGU (European Geoscience Union, Wien, Austria) https://meetingorganizer.copernicus.org/EGU22/EGU22-4741.html • 07/10/2024 - 11/10/2024: First SMASH workshop, Vipava, Slovenia • 16/10/2024: Order and Chaos: the link between art and science, Mantova, Italy • 30/01/2025: SLOVENSKO ZDRUŽENJE ZA GEODEZIJO IN GEOFIZIKO, Ljubljana, Slovenia • 25/03/2025: Italian Society for the teaching of Physics, Mantova, Italy • 28/04/2025-02/05/2025: EGU (European Geoscience Union, Wien, Austria) https://meetingorganizer.copernicus.org/EGU25/EGU25-420.html
Personal note
Throughout my academic and professional journey, I have consistently focused on research with tangible real-world applications, whether improving ocean forecast accuracy, advancing climate risk analysis, or enhancing extreme weather prediction using machine learning. My work bridges scientific rigour and societal relevance, aimed at supporting better decision-making in the face of environmental uncertainty. I am passionate about translating complex data into actionable insights that contribute to climate resilience, risk mitigation, and sustainable solutions.