



Martina Lagasio

Email address:

● **WORK EXPERIENCE**

11/06/2017 – CURRENT Savona, Italy

RESEARCHER CIMA RESEARCH FOUNDATION

She works on data assimilation in high resolution Numerical Weather Prediction models to improve the forecast skill of extreme hydro-meteorological events. She investigated lightning forecast performances in multi-microphysical cloud-resolving simulations and tested data assimilation of water vapor measurements (GNSS and SAR) and Sentinel observations using the WRF model. She contributed to the ESA Project STEAM – SaTellite Earth observation for Atmospheric Modelling (2017-2019), as well as Hydroterra science studies, focused on evaluating the assimilation of Sentinel and GNSS observations in forecasting extreme events and studying the impact on the hydro-meteorological predictive capability of the data potentially provided by the new geostationary InSAR during the next generation Earth-Explorer 10. She collaborated on the implementation and validation of the operational meteorological chain with data assimilation of national radar data and contributed to the development of numerical weather modeling with data assimilation for nowcasting purposes. She also participated in H2020 Pilot 2 of E-SHAPE Disaster Resilience Showcase and the H2020 LEXIS project, as well as H2020 SINOPTICA, focusing on the data assimilation of personal weather stations, radar, and satellite data for various purposes. Currently, she is leading the working package 5 of the Horizon Europe project MAGDA aimed at improving weather forecasts to support agriculture in increasing resilience against climate change. She is the author and co-author of about twenty scientific publications. Since 2016, she has been providing support in teaching the Hydraulic Constructions course at the University of Genoa, and since 2020, she has been working as a fire risk forecaster for the European Union Emergency Response Coordination Centre (ERCC).

Total number of publications in peer-review journals: 23

Total number of citations: Scholar Google 313, Scopus 236

H index (Scopus): 8

H index (Scholar Google): 9

Total number of publications in journals belonging to the first Scopus quartile: 13 (out of 23, about 56%)

2020 – CURRENT

OPERATIONAL FIRE FORECASTER FOR THE EU EMERGENCY RESPONSE COORDINATION CENTRE (ERCC) CIMA RESEARCH FOUNDATION

Fire risk forecaster for the EU ARISTOTLE project (<http://aristotle.ingv.it/tiki-index.php>)

19/09/2016 – CURRENT Savona, Italy

TEACHING SUPPORT ACTIVITIES UNIVERSITY OF GENOA

Exercises Course of Hydraulic Structure for Engineering bachelor degree students.

25/07/2012 – 05/09/2012 Cengio (SV), Italy

INTERNSHIP ENI SYNDIAL S.P.A.

Activities subsequent to the remediation work performed at the ex industrial site of ACNA of Cengio, management of the post-operam monitoring system for the development of critical skills in the data analysis.

● EDUCATION AND TRAINING

31/10/2015 – 21/05/2019 Genova, Italy

PHD PROGRAM IN COMPUTER SCIENCE AND SYSTEMS ENGINEERING Department of Informatics, Bioengineering, Robotics and System Engineering (DIBRIS)

Data assimilation in high resolution Numerical Weather Prediction model to improve forecast skill of extreme hydrometeorological events.

National classification Excellent cum laude

16/07/2017 – 25/07/2017 Boulder

SUMMER WRF BASIC AND DA TUTORIALS NCAR Foothills Laboratory

The Basic tutorial consist of lectures on various components of the WRF modeling system along with hands-on practice sessions.

The WRFDA tutorial include lectures on a variety of topics on the full capability of the WRFDA system, along with hands-on practice sessions.

02/03/2016 – 14/03/2016 Reading, United Kingdom

TRAINING COURSE ON DATA ASSIMILATION University of Reading - European Center Medium Weather Forecast (ECMWF)

17/01/2016 – 11/06/2017 Savona, Genoa, Italy

POSTGRADUATE SCHOLARSHIP CIMA Research Foundation and Department of Informatics, Bioengineering, Robotics and System Enginee

Application of data assimilation techniques on lightning and radar data in high resolution Numerical Weather Prediction to improve forecast skill of extreme hydrometeorological events.

19/09/2013 – 28/10/2015 Savona, Italy

MASTER DEGREE "ENVIRONMENTAL & ENERGY ENGINEERING" University of Genoa

Master Thesis title: "Lightning flash activity indices as forecasting tool of high impact weather events over complex topography"

National classification 110 cum laude /110

18/07/2013 Savona, Italy

DEGREE ENVIROMENTAL ENGINEERING University of Genoa - Campus of Savona

Thesis:

"The remediation of a national interest site: the characterization plan to posto-peram monitoring. The case of the ex ACNA of Cengio"

National classification 110/110

03/2013 Savona, Italy

TRAINING COURSE INAIL "THE HEALTH AND SAFETY IN THE WORKPLACE: MANAGEMENT SYSTEMS AND ENVIRONMENTAL INAIL

Thesis:

"Management System of Health, Safety and Environment of a site remediation"

08/2004 – 07/2009 Carcare (SV), Italy

SCIENTIFIC HIGH SCHOOL Scientific high school S.Giuseppe Calasanzio

National classification 84/100

05/2008

FIRST CERTIFICATE IN ENGLISH University of Cambridge ESOL Examination

National classification Council of Europe Level B2

01/07/2007 – 21/07/2007 Eastbourne, United Kingdom

EF LANGUAGE COURSE CERTIFICATE EF Education

National classification Livello B1

04/2006

PRELIMINARY ENGLISH TEST University of Cambridge (ESOL Examination)

National classification Level B1

04/2004

KEY ENGLISH TEST University of Cambridge (ESOL)

National classification Level A2 pass with merit

● PUBLICATIONS

2024

Publications

- Poletti, M. L., **Lagasio, M.**, Parodi, A., Milelli, M., Mazzarella, V., Federico, S., ... & Silvestro, F. (2024). Hydrological verification of two rainfall short-term forecasting methods with floods anticipation perspective. *Journal of Hydrometeorology*.
- Grossi, F., **Lagasio, M.**, Napoli, A., Provenzale, A., & Tepsich, P. (2024). Phytoplankton spring bloom in the NW Mediterranean Sea under climate change. *Science of The Total Environment*, 914, 169884.
- Federico, S., Torcasio, R. C., Popova, J., Sokol, Z., Pop, L., **Lagasio, M.**, ... & Dietrich, S. (2024). Improving the lightning forecast with the WRF model and lightning data assimilation: Results of a two-seasons numerical experiment over Italy. *Atmospheric Research*, 107382.

2023

Publications

- Temme, M. M., Gluchshenko, O., Nöhren, L., Kleinert, M., Ohneiser, O., Muth, K., ... **Lagasio, M.**, ... & Biondi, R. (2023). Innovative Integration of Severe Weather Forecasts into an Extended Arrival Manager. *Aerospace*, 10(3), 210.
- Esbrí, L., Rigo, T., Llasat, M. C., Biondi, R., Federico, S., Gluchshenko, O., ... **Lagasio, M.**, ... & Temme, M. M. (2023). Application of Severe Weather Nowcasting to Case Studies in Air Traffic Management. *Atmosphere*, 14(8), 1238.

2022

Publications

- **Lagasio, M.**, Campo, L., Milelli, M., Mazzarella, V., Poletti, M. L., Silvestro, F., ... & Parodi, A. (2022). SWING, the score-weighted improved NowcastinG algorithm: Description and application. *Water*, 14(13), 2131.
- Federico, S., Torcasio, R. C., **Lagasio, M.**, Lynn, B. H., Puca, S., & Dietrich, S. (2022). A year-long total lightning forecast over Italy with a dynamic lightning scheme and WRF. *Remote Sensing*, 14(14), 3244.
- Mazzarella, V., Milelli, M., **Lagasio, M.**, Federico, S., Torcasio, R. C., Biondi, R., ... & Parodi, A. (2022). Is an NWP-Based Nowcasting System Suitable for Aviation Operations?. *Remote Sensing*, 14(18), 4440.
- **Lagasio, M.**, Fagugli, G., Ferraris, L., Fiori, E., Gabellani, S., Masi, R., ... & Parodi, A. (2022). A Complete meteo/hydro/hydraulic chain application to support early warning and monitoring systems: the Apollo Mediane use case. *Remote Sensing*, 14(24), 6348.

2021

Publications

- Meroni, A. N., Oundo, K. A., Muita, R., Bopape, M. J., Maisha, T. R., **Lagasio, M.**, ... & Venuti, G. (2021). Sensitivity of some African heavy rainfall events to microphysics and planetary boundary layer

schemes: Impacts on localised storms. *Quarterly Journal of the Royal Meteorological Society*. <https://doi.org/10.1002/qj.4033>

- Apicella, L., Puca, S., **Lagasio, M.** et al. The predictive capacity of the high resolution weather research and forecasting model: a year-long verification over Italy. *Bull. of Atmos. Sci. & Technol.* 2, 3 (2021). <https://doi.org/10.1007/s42865-021-00032-x>

2020

Publications

- **Lagasio, M.**, Meroni, A. N., Boni, G., Pulvirenti, L., Monti-Guarnieri, A., Haagmans, R., ... & Parodi, A. (2020). Meteorological losses for new zenith total delay observations: Impact assessment for the hydroterra geosynchronous satellite on the October 2019 Genoa event. *Remote Sensing*, 12(22), 3787.
- Burlando, M., Romanic, D., Boni, G., **Lagasio, M.**, & Parodi, A. (2020). Investigation of the Weather Conditions During the Collapse of the Morandi Bridge in Genoa on 14 August 2018 Using Field Observations and WRF Model. *Atmosphere*, 11(7), 724.
- Meroni, A. N., Montrasio, M., Venuti, G., Barindelli, S., Mascitelli, A., Manzoni, M., Monti Guarnieri, A. V., Gatti, A., **Lagasio, M.**, Parodi, A., Realini, E., Tagliaferro, G. (2020). On the definition of the strategy to obtain absolute InSAR Zenith Total Delay maps for meteorological applications. *Frontiers in Earth Science*, 8, 359.
- Parodi, A., **Lagasio, M.**, Meroni, A. N., Pignone, F., Silvestro, F., & Ferraris, L. (2020). A hindcast study of the Piedmont 1994 flood: the CIMA Research Foundation hydro-meteorological forecasting chain. *Bulletin of Atmospheric Science and Technology*, 1-22.

2019

Publications

- **Lagasio, M.**, Silvestro, F., Campo, L., & Parodi, A. (2019). Predictive capability of a high-resolution hydrometeorological forecasting framework coupling WRF cycling 3dvar and Continuum. *Journal of Hydrometeorology*, (2019).
- **Lagasio, M.**, Pulvirenti, L., Parodi, A., Boni, G., Pierdicca, N., Venuti, G., ... & Rommen, B. (2019). Effect of the ingestion in the WRF model of different Sentinel-derived and GNSS-derived products: analysis of the forecasts of a high impact weather event. *European Journal of Remote Sensing*, 1-18.
- **Lagasio, M.**, Parodi, A., Pulvirenti, L., Meroni, A. N., Boni, G., Pierdicca, N., ... & Gatti, A. (2019). A Synergistic Use of a High-Resolution Numerical Weather Prediction Model and High-Resolution Earth Observation Products to Improve Precipitation Forecast. *Remote Sensing*, 11(20), 2387.
- Parodi, A.; **Lagasio, M.**; Maugeri, M.; Turato, B.; Gallus, W. Observational and Modelling Study of a Major Downburst Event in Liguria: The 14 October 2016 Case. *Atmosphere* 2019, 10, 788.
- Esposito, G.; Parodi, A.; **Lagasio, M.**; Masi, R.; Nanni, G.; Russo, F.; Alfano, S.; Giannatiempo, G. Characterizing consecutive flooding events after the 2017 Mt. Salto wildfires (southern Italy): hazard and emergency management implications, *Water*, 2019.

2017

Publications

- **Lagasio, M.**, A. Parodi, R. Procopio, F. Rachidi, and E. Fiori (2017), Lightning Potential Index performances in multimicrophysical cloud-resolving simulations of a back-building mesoscale convective system: The Genoa 2014 event, *J. Geophys. Res. Atmos.*, 122, 4238–4257, doi: 10.1002/2016JD026115.

● CONFERENCES AND SEMINARS

2022 – 2023

Conferences

- Federico, S., Torcasio, R. C., **Lagasio, M.**, Lynn, B. H., Transerici, C., Puca, S., & Dietrich, S. (2022). A year-long total lightning forecast over Italy made with a dynamic lightning scheme using the WRF model (No. Plinius17-2). Copernicus Meetings.
- Parodi, A., Mazzarella, V., Milelli, M., **Lagasio, M.**, Realini, E., Federico, S., ... & Biondi, R. (2022, July). A Nowcasting Algorithm of Severe Weather Events at Local Spatial Scale: The Venezia Case Study. In *IGARSS 2022-2022 IEEE International Geoscience and Remote Sensing Symposium* (pp. 6554-6557). IEEE.

- Esbri, L., Rigo, T., Llasat, M. D. C., Biondi, R., Torcasio, C., Federico, S.,... **Lagasio, M.**, ... & Parodi, A. (2022, August). Forecasting the weather to assist ATC and ATM operations. In *European Conference on Radar in Meteorology and Hydrology (ERAD)* (No. 304).
- Nöhren, L., Temme, M. M., Gluchshenko, O., Muth, K., Temme, A., Kerschbaum, M., ... **Lagasio, M.**, ... & Biondi, R. (2022, October). Innovative integration of severe weather forecasts into an extended arrival manager. In *12th EASN International Conference on "Innovation in Aviation & Space for opening New Horizons"*

2021 – 2022

Conferences

- Parodi, A., Danovaro, E., Hawkes, J., Quintino, T., **Lagasio, M.**, Delogu, F., ... & Martinovic, J. (2021). LEXIS weather and climate large-scale pilot. In *Complex, Intelligent and Software Intensive Systems: Proceedings of the 14th International Conference on Complex, Intelligent and Software Intensive Systems (CISIS-2020)* (pp. 267-277). Springer International Publishing.
- Parodi, A., Temme, M., Gluchshenko, O., Kerschbaum, M., Surian, N., Biondi, R., ... **Lagasio, M.**,... & Parodi, A. (2021). *H2020 SINOPTICA (Satellite-borne and IN-situ Observations to Predict The Initiation of Convection for ATM) project: initial results* (No. EGU21-891). Copernicus Meetings.
- Meroni, A. N., Mascitelli, A., Barindelli, S., Petrushevsky, N., Manzoni, M., Molinari, M. E., ... **Lagasio, M.**, ... & Venuti, G. (2021, April). Towards the integration of GNSS, SAR and NWP for heavy rainfall forecast in sub-Saharan Africa within the TWIGA project. In *EGU General Assembly Conference Abstracts* (pp. EGU21-5704).
- Esbri, L., Llasat, M. C., Rigo, T., Milelli, M., Mazzarella, V., **Lagasio, M.**, ... & Parodi, A. (2021). *Initial results of the project SINOPTICA (Satellite-borne and IN-situ Observations to Predict The Initiation of Convection for ATM)* (No. EMS2021-189). Copernicus Meetings.
- Parodi, A., Mazzarella, V., Milelli, M., **Lagasio, M.**, Realini, E., Federico, S., ... & Biondi, R. (2021). A nowcasting model for severe weather events at airport spatial scale: The case study of Milano Malpensa. *Proceedings of the 11th SESAR Innovation Days (SID), Online, 7-9.*
- Mazzarella, V., Milelli, M., **Lagasio, M.**, Poletti, L., Biondi, R., Realini, E., ... & Parodi, A. (2022). *Data assimilation and nowcasting of severe weather for air traffic management purposes* (No. EGU22-2823). Copernicus Meetings.
- **Lagasio, M.**, Fagugli, G., Ferraris, L., Fiori, E., Gabellani, S., Masi, R., ... & Parodi, A. (2022, May). A complete meteo-hydrological chain to support early warning systems from weather scenarios to flooded areas: the Apollo medecane use case. In *EGU General Assembly Conference Abstracts* (pp. EGU22-2622).
- Mazzarella, V., Milelli, M., **Lagasio, M.**, Poletti, L., Biondi, R., Realini, E., ... & Parodi, A. (2022). Data assimilation and nowcasting for air traffic management purposes. *General Assembly 2022 of the European Geosciences Union (EGU)*, (2823).
- Parodi, A., Mazzarella, V., Milelli, M., **Lagasio, M.**, Poletti, L., Biondi, R., ... & Nöhren, L. (2022, May). How can numerical weather prediction support the ATM activity during severe weather events?. In *living planet symposium (lps22)*.
- Boni, G., De Angeli, S., **Lagasio, M.**, & Parodi, A. (2022). *How the spatial structure of extreme rainfall observed by meteo-radars can impact the estimation of the return period of extra-ordinary events?* (No. Plinius17-95). Copernicus Meetings.

2018 – 2020

Conferences

- Scionti, A. J. Martinovic,, O. Terzo, E. Walter, M. Levrier, S. Hachinger, D. Magarielli, T. Goubier, S. Louise, A. Parodi, S. Murphy, C. D'Amico, S. Ciccica, E. Danovaro, **M. Lagasio**, F. Donnat, M. Golasowski, T. Quintino, J. Hawkes, T. Martinovic, L. Riha, K. Slaninova, S. Serra, R. Peveri (2019, July). HPC, cloud and big-data convergent architectures: the LEXIS approach. In *Conference on Complex, Intelligent, and Software Intensive Systems* (pp. 200-212). Springer, Cham.
- Lubrano, F., Goga, K., Terzo, O., Parodi, A., & **Lagasio, M.** (2019, July). Analysis of Job Scheduling Techniques in a HPC Cluster Deployed in a Public Cloud. In *Conference on Complex, Intelligent, and Software Intensive Systems* (pp. 886-895). Springer, Cham.
- Parodi, A., Danovaro, E., Hawkes, J., Quintino, T., **Lagasio, M.**, Delogu, F., ... & Mazzoglio, P. (2020, July). LEXIS Weather and Climate Large-Scale Pilot. In *Conference on Complex, Intelligent, and Software Intensive Systems* (pp. 267-277). Springer, Cham.
- **Lagasio, M.**, Meroni, A. N., Pulvirenti, L., Squicciarino, G., Parodi, A., Tsouni, A., ... & Bartsotas, N. (2020, May). Sentinel products assimilation in a complete hydro/fire-meteorological chain: nearly operational experiments in the framework of the E-SHAPE project. In *EGU General Assembly Conference Abstracts* (p. 7168).
- Barindelli, S., Gatti, A., **Lagasio, M.**, Manzoni, M., Mascitelli, A., Monti Guarnieri, A., ... & Venuti, G. (2020, May). From InSAR derived relative tropospheric Slant Total Delay maps to absolute Zenith

Total Delay maps: comparisons between tropospheric delay products to define a strategy for meteorological applications. In *EGU General Assembly Conference Abstracts* (p. 17920).

2017

Conferences

- **Lagasio, M.**, E. Fiori, and A. Parodi (2018), Dealing with uncertainty in V-shape back-building Mesoscale Convective Systems: sensitivity analysis on cycling 3dvar radar data assimilation for the Genoa 2014 case. In HyMeX conference, Lecce 29 May - 2 June 2018, Italy.
- Fiori, E., **M. Lagasio**, and A. Parodi (2018), Dealing with uncertainty in V-shape back-building Mesoscale Convective System high resolution modelling over the Ligurian Sea. In HyMeX conference, Lecce 29 May - 2 June 2018, Italy.
- Goga, K., Pilosu, L., Parodi, A., **Lagasio, M.**, & Terzo, O. (2018, July). Performance of WRF Cloud Resolving Simulations with Data Assimilation on Public Cloud and HPC Environments. In Conference on Complex, Intelligent, and Software Intensive Systems (pp. 161-171). Springer, Cham.
- Pulvirenti, L., A. Parodi, **M. Lagasio**, N. Pierdicca, F.S. Marzano, C. Riva, G. Venuti, E. Realini, E. Passera (2018), Use of Sentinel-1 and Sentinel-3 data to initialize a numerical weather model. In X Conference of the Italian Society of Remote Sensing (AIT2018), Firenze 4-6 July 2018, Italy.
- Parodi, A., L. Pulvirenti, **M. Lagasio**, N. Pierdicca, F.S. Marzano, C. Riva, G. Venuti, L. Pilosu, E. Realini, E. Passera, B. Rommen (2018), Ingestion of Sentinel-derived Remote Sensing Products in Numerical Weather Prediction Models: First Results of the ESA STEAM Project. In International Geoscience and Remote Sensing Symposium, Valencia, 22-27 July 2018, Spain.
- Pulvirenti L., A. Parodi, **M. Lagasio**, N. Pierdicca, G. Venuti, E. Realini, A. Gatti, S. Barindelli, E. Passera, B. Rommen (2018), Incorporating Sentinel-derived products into numerical weather models: the ESA STEAM project. SPIE Remote Sensing 2018, Berlin 10-13 September 2018.

2015 – 2017

Conferences

- Fiori, E., **M. Lagasio**, A. Parodi, R. Procopio, A. Smorgonskiy, F. Rachidi, and G. Diendorfer (2016), Implementation and performance analysis of the Lightning Potential Index as a forecasting tool, proceeding of 33rd International Conf. on Lightning Protection (ICLP), Estoril, Portugal.
- Azadifar, M., **M. Lagasio**, E. Fiori, F. Rachidi, M. Rubinstein, R. Procopio (2016): Occurrence of Downward and Upward Flashes at the Sântis Tower: Relationship with -10 degrees C Temperature Altitude, proceeding of European Electromagnetics International Symposium EUROEM 2016, London, UK, July 11-14, 2016.
- **Lagasio, M.**, A. Parodi, R. Procopio, F. Rachidi, and E. Fiori (2017), The use of a potential lightning index in multi-microphysical cloud-resolving simulations of a V-shape convective system, 19th EGU General Assembly, EGU2017, proceedings from the conference held 23-28 April, 2017 in Vienna, Austria., p.13766.

● LANGUAGE SKILLS

Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B2	B2	B2	B2	B2
FRENCH	A2	B1	B1	B1	A2

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

● DIGITAL SKILLS

Linux | Bash programming | Matlab | Microsoft Office | WRF meteorological model | Data Assimilation

- **COMMUNICATION AND INTERPERSONAL SKILLS**

Communication and interpersonal skills

Good communication skills developed during the years of study and team working