



Francesco De Martin

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Date of birth: 30/09/1998 Nationality: Italian

RESEARCH INTEREST

Meteorology

Severe weather events, especially tornadoes, supercells, hail and downbursts. I'm also interested in NWP models (WRF, MOLOCH), urban meteorology, weather forecasting and forecast verification.

EDUCATION AND TRAINING

[01/11/2022 – Current]

Phd in "Future Earth, climate change and societal challenges"

Alma mater studiorum- Università di Bologna

Field(s) of study: Dynamic Meteorology | **Thesis:** Assessment of weather numerical models for the prediction of meteo-related extremes in the Po Valley

Expected End: 31/10/2025

Supervisor: Prof. Silvana Di Sabatino

[24/06/2024 – 28/06/2024]

ESSL Testbed

Testbed

City: Wiener Neustadt | **Country:** Austria |

[26/06/2023 – 30/06/2023]

Training school "2nd Medcyclones Training School"

EU Cost Action

City: Toulouse | **Country:** France |

[09/2020 – 20/10/2022]

Master Degree in Physics of the Earth System

Alma mater studiorum- Università di Bologna

City: Bologna | **Country:** Italy | **Field(s) of study:** Atmospheric Science | **Final grade:** 110/110 cum laude | **Level in EQF:** EQF level 7 | **Type of credits:** ECTS | **Number of credits:** 120 | **Thesis:** Analysis of tornadoes on 19 September 2021 in the Po Valley using high resolution numerical simulations

[29/08/2022 – 02/09/2022]

Summer school "Nature-based Solutions for hydro-meteo hazards and climate change adaptation"

Alma mater studiorum- Università di Bologna

City: Bologna | **Country:** Italy |

[08/2017 – 02/08/2020]

Bachelor Degree in Physics

Università degli studi di Trieste

City: Trieste | **Country:** Italy | **Field(s) of study:** Physics | **Final grade:** 110/110 cum laude | **Level in EQF:** EQF level 6 | **Number of credits:** 180 | **Thesis:** Analysis of the conditions favorable to the development of severe convective events at the atmospheric mesoscale

[2012 – 2017]

Scientific High School Diploma

Licei G.A. Pujati

City: Sacile | **Country:** Italy | | **Final grade:** 100/100 | **Level in EQF:** EQF level 4

WORK EXPERIENCE

[21/01/2025 – Current]

Visiting Scholar

NCAR

City: Boulder | **Country:** United States

[08/03/2022 – 15/09/2022]

Internship

CNR-ISAC

Address: Via Piero Gobetti,101, Bologna, Italy | **Business or sector:** Professional, scientific and technical activities

Numerical simulations with a high resolution NWP model of a severe storm event in northern Italy.

[08/2019 – 09/2019]

Internship

ARPA FVG

Address: Via Cairoli 14, 33057, Palmanova, Italy | **Business or sector:** Professional, scientific and technical activities

Study of heat transmission in the soil: analysis of experimental data and comparison with a theoretical model.

LANGUAGE SKILLS

Mother tongue(s): Italian

Other language(s):

English

LISTENING B2 READING B2 WRITING B2

SPOKEN PRODUCTION B2 SPOKEN INTERACTION B2

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

NETWORKS AND MEMBERSHIPS

[12/2024 – Current]

Student representative of the 38° cycle of the Phd Frontiers Bologna

[14/12/2022 – Current]

Coordinator student section of AISAM

Italian Association of Atmospheric Science and Meteorology

Memberships

Co-founder of PRETEMP group

Associate member of Meteonetwork

Associate member of AISAM

DRIVING LICENCE

Motorbikes: AM

Cars: B

NON PEER-REVIEW PUBLICATIONS

[2023]

La ricerca italiana premiata all'11° conferenza europea sui severe storms a Bucarest

Link: https://aisam.eu/wp-content/uploads/2023/06/NEWSLETTER-AISAM_014_2023.pdf

[2021]

L'outbreak tornadico del 19 settembre 2021 sul Nord Italia

Link: https://aisam.eu/wp-content/uploads/2021/12/NEWSLETTER-AISAM_008_2021.pdf

[2020]

Radiosondaggi di prossimità di temporali ordinari, forti ed estremi in Italia

Link: http://www.pretemp.it/archivio/2020/studi_2020/studio_proximity_soudings_2020.pdf

[2018]

Outbreak tornadici in Calabria e Puglia il 20 e 25 novembre 2018

Link: http://www.pretemp.it/archivio/2018/Studi_2018/outbreak_tornadico_calabria_puglia.pdf

[2017]

Il downburst

Link: <http://www.pretemp.it/alterpages/files/downburst.pdf>

[2016]

L'errore nelle previsione dei temporali: il caso studio del 13 luglio 2016

PERSONAL SKILLS

Communication and interpersonal skills

I've participated as a speaker in many conferences. I'm able to work in team: skill gained during the university years (in labs activities and student representations), in the PRETEMP group, and working with the AISAM association.

Organization skills

Experiences in student representation both at high school and university (student representative of the Physics Department of the University of Trieste). I've co-organized some amateur national conferences. I co-organized the AISAM course on weather forecasting.

Professional skills:

Data analysis, weather forecasting, Python and Latex, basics of Fortran. Numerical weather prediction models (WRF, MOLOCH, BOLAM).

TEACHING

[11/2024 – 12/2024]

Lectures "Atmospheric and Oceanic Dynamics"

Synoptic meteorology (8 hours)

Course of the master degree in Science of Climate

Academic year 2024-2025, University of Bologna, Bologna, Italy

[2024]

tutor "Dynamic Meteorology" course

WRF laboratory (11 hours)

Course of the master degree in Physics of the Earth System

Academic year 2023-2024, University of Bologna, Bologna, Italy

[2024]

Lectures "Dynamic Meteorology" course

Weather forecasting (3 hours), Vorticity (1 hours)

Course of the master degree in Physics of the Earth System

Academic year 2023-2024, University of Bologna, Bologna, Italy

[2023]

Lectures "Atmospheric and Oceanic Dynamics"

Severe storms (2 hours), Synoptic Meteorology (2 hours)

Course of the master degree in Science of Climate

Academic year 2022-2023, University of Bologna, Bologna, Italy

[2023]

Lecture "Dynamic Meteorology" course

Weather forecasting (1 hours), Vorticity (2 hours)

Course of the master degree in Physics of the Earth System

Academic year 2022-2023, University of Bologna, Bologna, Italy

[27/05/2023]

Workshop in Advanced Meteorology

"Tornadoes: climatology, dynamics and forecasting".

Lecture given to meteorologists of AMPRO (Associazione Meteo Professionisti).

Istituto Cavanis, Venezia, Italy.

Link: <https://www.meteorprofessionisti.it/ampro-wam-primavera-2023/>

[21/12/2022] **Seminar ARPA FVG**

Tornado forecasting in the Po Valley (1.5 hours)

ARPA FVG, Palmanova, Italy.

PROJECTS

[01/01/2025 – 31/12/2027] **P.I. ECMWF Special Project**

Downscaled subsampled seasonal predictions of summer temperature in the Greater Alpine region

[23/10/2023 – Current] **AISAM course on weather forecasting**

I proposed and organized as referent of the student section of AISAM the first (2023-2024) and second (2024-2025) edition of the AISAM a course on weather forecasting for students enrolled at the Master Degree courses in Meteorology in Italy. In 2023 the first day was held at the National Agency of Meteorology and Climatology (ItaliaMeteo) in Bologna. In 2024 the first two days were organized in Rome at the weather service of the Italian Air Force and at the Civil Protection Department. After the initial days, several weather briefings were delivered to the students by meteorologists from all over Italy.

Link: <https://aisam.eu/eventi-aisam/2-corso-previsione-meteorologica-operativa/>

[07/2015 – Current] **PRETEMP**

Group composed by students and meteorologists that I co-founded in 2015 with the aim to improve severe weather forecasting in Italy. PRETEMP publishes every day a severe weather outlook for Italy, collects severe weather reports (sent to the ESWD database) and publishes some reports about severe weather events in Italy. Currently the group consists of 10 members, has formal collaborations with important no-profit associations (ESSL, Meteonetwork), informal collaborations with some regional Environmental agencies (ARPAE, ARPA FVG) and with many italian amateur associations.

Link: www.pretemp.it

HONOURS AND AWARDS

[19/06/2023] **Young Scientist Conference Award Awarding institution:** European Meteorological Society

Link: <https://www.emetsoc.org/awards/award-category/young-scientist-conference-awards/>

[24/05/2023] **Best student Oral presentation Awarding institution:** 9th MetMed Awards Committee

9th MetMed in Genova, Italy

Link: <https://www.metmed.eu/86600/detail/9th-international-conference-on-meteorology-and-climatology-of-the-mediterranean.html>

[12/05/2023] **Best ECSS Presentation Jury Award Awarding institution:** European Severe Storm Laboratory

11th ECSS in Bucarest, Romania.

[05/05/2023] **Borghi Award Awarding institution:** Fondazione Osservatorio Meteorologico Milano Duomo

My Master thesis took the third place in that national award.

Link: <https://www.fondazioneomd.it/premio-borghi>

Best master thesis Awarding institution: Department of Physics and Astronomy, University of Bologna

Best master thesis of the Department of Physics and Astronomy of the University of Bologna during the academic years 2020-21 and 2021-22.

[04/10/2021] **Public competition as meteorologist in the Enviromental Agency of the Friuli Venezia Giulia region**
Awarding institution: ARPA FVG
I won the competition for a permanent job as a forecaster, but I gave up that opportunity in order to continue my studies in the atmospheric field.

[13/11/2020] **Borghi Award Awarding institution:** Fondazione Osservatorio Meteorologico Milano Duomo
My Bachelor thesis took the second place in that national award.

REVIEWER

[01/2025 - Current] **Meteorological Applications**

[09/2024 - Current] **Bullettin of Atmospheric Sciences and Technologies**

[08/2024 - Current] **Quarterly Journal of the Royal Meteorological Society**

[07/2024 - Current] **Weather**

[18/04/2024 - Current] **International Journal of Climatology**

[24/08/2023 - Current] **Atmospheric Research**

HOBBIES AND INTERESTS

Sport

Powerlifting, running, cycling, mountaneering, trekking.

Photography

Landscape photography and severe weather photography.

I've realized two time lapses: "Convection" and "Storm Motion".

Links: <https://www.youtube.com/watch?v=5cx3pndXil4> | <https://www.youtube.com/watch?v=hLcSmsMVYdA>

PUBLICATIONS

[2024] [**The-WIND RISK project: nowcast and simulation of thunderstorm outflows**](#)

Reference: Burlando, M., Miglietta, M.M., Avolio, E. et al. The -WIND RISK project: nowcast and simulation of thunderstorm outflows. Bull. of Atmos. Sci.& Technol. 5, 15 (2024). <https://doi.org/10.1007/s42865-024-00079-6>

[2024] [**A conceptual model for the development of tornado in the complex orography of the Po Valley**](#)

Reference: De Martin, F., S. Davolio, M. M. Miglietta, and V. Levizzani, 2024: A conceptual model for the development of tornadoes in the complex orography of the Po Valley. Mon. Wea. Rev., <https://doi.org/10.1175/MWR-D-23-0222.1>, in press.

[2023] **La previsione di supercelle e trombe d'aria**

Reference: De Martin, F., S. Davolio, and M. M. Miglietta, 2023: La previsione di supercelle e trombe d'aria, Rivista di Meteorologia Aeronautica, N.4, pag 4-17.

CONFERENCES AND SEMINARS

[16/01/2025] **Simulating the effect of the urban land use on a severe convective windstorm in the Po Valley**

New Orleans, USA

De Martin, F. and Zonato, A. and Di Sabatino, S. "Simulating the effect of the urban land use on a severe convective windstorm in the Po Valley", New Orleans, 105th AMS Annual Meeting, **Oral**

- [13/01/2025] **Lessons from a Dynamic and Statistical Analysis of Giant Hail Environments in NE Italy** New Orleans, USA
De Martin, F., and Manzato, A. and Carlon, N. and Setvak, M. and Miglietta M.M., "Lessons from a Dynamic and Statistical Analysis of Giant Hail Environments in NE Italy", New Orleans, 105th AMS Annual Meeting, **ePoster**
- [10/07/2024] **The effect of complex topography on severe storms: from mountains to the urban canopy** Castro, Italy
De Martin, F. and Siena, M. and Giordani, A. and Di Sabatino, Silvana (2024): "The effect of complex topography on severe storms: from mountains to the urban canopy", Workshop "Toward a better understanding of extreme events in Med Basin: combining numerical models and remote sensing", Castro, **Oral**
- [15/04/2024] **Can a city modify a severe convective windstorm?** Vienna, Austria
De Martin, Francesco, Zonato Andrea, and Di Sabatino, Silvana, "Can a city modify a severe convective windstorm?", EGU24, **Oral**
- [07/02/2024] **Extreme severe storms in Italy in two weeks of July 2023: hail records and tornadoes** Lecce, Italy
De Martin, Francesco, Manzato, Agostino, Carlon, Nicola, Pavan, Federico, Carpentari, Sebastiano, Cioni, Guido and Miglietta, Mario Marcello, "Extreme severe storms in Italy in two weeks of July 2023: hail records and tornadoes", 5th AISAM Congress, **Oral**
- [06/02/2024] **Can a city intensify a local severe storm?** Lecce, Italy
De Martin, Francesco, Zonato Andrea, and Di Sabatino, Silvana, "Can a city intensify a local severe storm?", 5th AISAM Congress, **Poster**
- [23/06/2023] **The effect of complex orography on the development of a tornadic outbreak in the Po Valley** St. Gallen, Switzerland
De Martin, Francesco, Davolio, Silvio, Miglietta, Mario Marcello and Levizzani, Vincenzo, "The effect of complex orography on the development of a tornadic outbreak in the Po Valley", 36th ICAM, **Oral**
- [23/05/2023] **A conceptual model for the development of tornado in the Po Valley** Genova, Italy
De Martin, Francesco, Davolio, Silvio, Miglietta, Mario Marcello and Levizzani, Vincenzo, "A conceptual model for the development of tornado in the Po Valley", 9th MetMed, **Oral**
- [23/05/2023] **Toward a dedicated warning system of severe storms in Italy: the PRETEMP project** Genova, Italy
De Martin, Francesco, Carlon, Nicola, Pavan, Federico, Carpentari, Sebastiano, Giazzi, Marco, Peressutti, Gianandrea, Miglietta, Mario Marcello, and Davolio, Silvio, 9th MetMed, **Poster**
- [11/05/2023] **Toward a dedicated warning system of severe storms in Italy: the PRETEMP project** Bucharest, Romania
De Martin, Francesco, Carlon, Nicola, Pavan, Federico, Carpentari, Sebastiano, Giazzi, Marco, Peressutti, Gianandrea, Miglietta, Mario Marcello, and Davolio, Silvio, 11th ECSS, **Poster**
Link: <https://doi.org/10.5194/ecss2023-18>
- [09/05/2023] **A conceptual model for the development of tornado in the Po Valley** Bucharest, Romania
De Martin, Francesco, Davolio, Silvio, Miglietta, Mario Marcello and Levizzani, Vincenzo, "A conceptual model for the development of tornado in the Po Valley", 11th ECSS, **Oral**
Link: <https://doi.org/10.5194/ecss2023-17>
- [14/02/2022 – 18/02/2022] **Prevedere i temporali si può?** Milan, Italy

Boulder, USA, 30/01/2025

A handwritten signature in black ink that reads "Francesco De Martin". The signature is written in a cursive, slightly slanted style.

Francesco De Martin