

NTAFIS (DAFIS) Stavros

Personal Information

DATE - PLACE OF BIRTH: 13 January 1991 in Volos, Greece
PROFESSION: Research Associate – R&D Specialist
PROFESSIONAL ADDRESS: National Observatory of Athens, Institute of
Environmental Research and Sustainable Development
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Academic Qualifications

2020: Ph. D. Dynamic Meteorology, Polytechnique Institute of Paris (École Polytechnique),
Laboratoire de Météorologie Dynamique (LMD), France.
2016: Master 2 in Atmospheric Sciences and Environment, University of Ioannina, Physics
Department, Greece.
2014: B. Sc in Physics, University of Ioannina, Greece.

Scholarships

2021-2022: Scholarship from the National Observatory of Athens for Postdoctoral research.
2017-2020: Scholarship from the French Ministry of Defense (DGA) for PhD research.
2015: Scholarship from the European Severe Storms Laboratory (ESSL) for Scientific Training
at the Training Center of Wiener Neustadt, Austria

Professional Experience

- ❑ 2021 – today: Research and Development Specialist, Data4Risk, Paris, France.
- ❑ 2016 – today: Research Associate IERSD/National Observatory of Athens, Greece
- ❑ 2018 – 2020: Teacher Assistant, Polytechnique Institute of Paris, Palaiseau, France
- ❑ 2019: Teacher Assistant – Fluid Dynamics of Sustainability and the Environment (FDSE)
summer school, University of Cambridge and École Polytechnique, Palaiseau, France.
- ❑ 2016: Physics Engineer, Laboratoire de Météorologie Dynamique (LMD), CNRS,
Palaiseau, France.
- ❑ 2016 – 2017: Operational Weather Forecaster, Stravon Weather Services, Kozani, Greece.
- ❑ 2015 – 2016: Internship, Laboratoire Atmosphères, Milieux, Observations Spatiales
(LATMOS/IPSL), Guyancourt, France.
- ❑ 2013: Research Scientist, Station for Climate Observations “Roberto Sarao” (ENEA),
Lampedusa, Italy.
- ❑ 2013: Internship, Italian National Agency for New Technologies, Energy and Sustainable
Economic Development (ENEA), Rome, Italy.

Areas of expertise

Expert in the dynamics of Mediterranean Tropical-Like Cyclones and Deep Convection.
Weather Research and Forecasting (WRF) model expert.

Expertise in designing, developing, optimizing, operationally implementing and validating Numerical Weather Prediction systems in the fields of mesoscale meteorology (WRF model). Experience with the Meso-NH and LMDZ models.
Expertise in computer programming (Unix bash, Fortran, Python, R, NCL, CDO, NCO), and in grid and high-performance (HPC) computing.
Advanced in geographic information systems (QGIS-GDAL).
Teaching experience in fluid and atmospheric dynamics.
Proficient in the forecast and assessment of severe weather events and their associated impact analysis, and in educational meteorology.
Data analyst of operational numerical weather prediction models at NOAA (GFS, IFS, BOLAM, MOLOCH, WRF, WRF-CHEM, ICON and WAM) and of remote sensing data.
Operational weather forecaster at the European Severe Storm Experiment (ESTOFEX).

Participation in International Projects

- 2021 – today: «European network for Mediterranean cyclones in weather and climate – MedCyclones Cost Action 19109». Funding: European Cooperation in Science and Technology
- 2019 – 2020: «Drought and fire Observatory and early warning system – DISARM ». Funding : INTERREG Balkan-Mediterranean 2014–2020 co-funded by the European Union.
- 2017: «Global Earth Observation for Integrated Water Resource Assessment – Earth2Observe». Funding: European Commission - CORDIS.
- 2016 – 2019: Hydrological Cycle in Mediterranean Experiment – HyMeX. Funding: Agence nationale de la recherche (ANR) and Centre National d'Études Spatiales (CNES), IRSTEA, Météo-France, CEA, EUMETSAT, EUMETNET, National Observatory of Athens.
- 2013: «The Chemistry-Aerosol Mediterranean Experiment – ChArMEx, Mediterranean Integrated Studies at Regional And Local Scales – MISTRALS ». Funding: ADEME, Agence nationale de la recherche (ANR), Centre National d'Études Spatiales (CNES), CNRS-INSU, the Collectivité Territoriale de Corse (incl. EU-FEDER funds), Météo-France, CEA, ENEA Italy, and Ecole des Mines de Douai.

Participation in National Projects

- 2021: «Prototype system for assessing and mapping vulnerability and disaster risk due to severe weather in Greece – YANTAS ». Operational Programme “Competitiveness Entrepreneurship Innovation” (EPAnEK 2014-2020), co-financed by the European Union and the European Regional Development Fund, Greece.
- 2020: Innovative research on the development of an urban areas vulnerability index in climate change and the creation of a multi-criteria system for assessing the efficiency measures of climate change adaptation measures - Adapt2CC. Funding: Operational Programme “Competitiveness Entrepreneurship Innovation” (EPAnEK 2014-2020), co-financed by the European Union and the European Regional Development Fund, Greece.

- 2020: «PRECIPCLOUD-SAT ». Funding: Direction Général de l'Armement and Centre National d'Études Spatiales (CNES), France.
- 2018: «Multiscale process studies of intense convective precipitation events in Mediterranean – MUSIC». Funding: Agence nationale de la recherche (ANR) and Centre National d'Études Spatiales (CNES), France.
- 2018: «EXploiting new Atmospheric Electricity Data for Research and the Environment – EXAEDRE ». Funding: Agence nationale de la recherche (ANR).
- 2017-2018: «Development Proposals of Research Entities—KRIPIS II». Funding: N.P. “Competitiveness and Entrepreneurship 2014–2020”, Action: “THESPIAN II – Development of synergistic and integrated methods and tools for monitoring, management and forecasting of Environmental parameters and pressures”, Greece.

• Reviewer (International Journals)

Atmospheric Research
 International Journal of Climatology
 Journal of Geophysical Research
 Natural Hazards and Earth System Sciences
 Quarterly Journal of the Royal Meteorological Society
 Advances in Meteorology

• Organisation of International Conferences

2015: Member of the Organising Committee of the “9th Hymex Workshop, 21-25 September, Mykonos, Greece.

Citation Report (Google Scholar 13/12/2021)

	All	Since 2016
Citations	112	111
h-index	6	6
i10-index	6	6

Publications in International Journals

1. **Dafis S.**, Lolis J. C., Houssos E., Bartzokas A., 2015: The atmospheric circulation characteristics favouring snowfall in an area with complex relief in Northwestern Greece. *International Journal of Climatology*, DOI: 10.1002/joc.4576
2. **Dafis S.**, K. Lagouvardos, V. Kotroni, Th. M Giannaros, A. Bartzokas, 2017: Observational and modelling study of a mesoscale convective system during the hymex - sop1. *Atmospheric Research*, 187, 1–15.
3. Lampiris A., **Dafis S.**, Papavasileiou G., 2017: Observational and numerical study of a tornado outbreak in Attica and Euboea. *Perspectives on Atmospheric Sciences*, pp.99-105. DOI: 10.1007/978-3-319-35095-0_15

4. **Dafis S.**, C. Claud, J-F. Rysman, E. Flaounas, 2018: *Remote Sensing of Deep Convection within a Tropical-like Cyclone over the Mediterranean Sea*. Atmospheric Science Letters, DOI: 10.1002/asl.823
5. **Dafis S.**, Fierro A., Giannaros Th. M, Lagouvardos K., Kotroni V., Mansell E, 2018: Exploring the skill of explicit lightning forecasting. JGR, <https://doi.org/10.1029/2017JD027930>
6. Lagouvardos K., Kotroni V., Giannaros T. M., **Dafis S.**, 2019: *Meteorological conditions conducive to the rapid spread of the deadly wildfire in eastern Attica, Greece*. Bulletin of the American Meteorological Society, DOI: 10.1175/BAMS-D-18-0231.1
7. Lagouvardos K., **S. Dafis**, Ch. Giannaros, Ath. Karagiannidis, V. Kotroni, 2020: Investigating the role of extreme synoptic patterns and complex topography during two heavy precipitation events in Crete in February 2019. *Climate*, 8, 87; doi:10.3390/cli8070087.
8. Stefanidis S., **Dafis S.**, Giannaros C., 2020: Hydrological response of the “Mpasdeki” torrent catchment to the storm of 25th November 2019. *Hydrotechnica*, 29, 13–26.
9. Kotroni Vassiliki, Constantinos Cartalis, Silas Michaelides, Julia Stoyanova, Fillipos Tymvios, Antonis Bezes, Theodoros Christoudias, **Stavros Dafis**, Christos Giannakopoulos, Theodore M. Giannaros, Christo Georgiev, Athanasios Karagiannidis, Anna Karali, Ioannis Koletsis, Konstantinos Lagouvardos, Ioannis Lemesios, Thaleia Mavrakou, Katerina Papagiannaki, Anastasios Polydoros and Yiannis Proestos, 2020: DISARM Early Warning System for Wildfires in the Eastern Mediterranean, *Sustainability*, 12, 6670; doi:10.3390/su12166670
10. Stefanidis S., **Dafis S.**, Stathis D., 2020: Simulation of Seasonal Precipitation Over Mountainous Central Pindus (Greece) Using Regional Climate Models (RCMs). *Water*. DOI: 10.3390/w12102750
11. **Dafis, S.**, Ch. Claud, V. Kotroni, K. Lagouvardos, and J-F Rysman, 2020: Insights into the convective evolution of Mediterranean tropical-like cyclones. *QJRMS*, DOI: 10.1002/qj.3896
12. Rysman, J.F., Claud C., **Dafis S.**, 2020: Global monitoring of deep convection using passive microwave observations. *Atmospheric Research*. DOI: 10.1016/j.atmosres.2020.105244
13. Lagouvardos K., A. Karagiannidis, **S. Dafis**, A. Kalimeris, and V. Kotroni, 2021: Ianos: - A hurricane in the Mediterranean, *BAMS*, DOI: <https://doi.org/10.1175/BAMS-D-20-0274.1>
14. Rysman J.F., Claud C., **Dafis S.**, 2021: A Machine Learning Algorithm for Retrieving Cloud Top Height With Passive Microwave Radiometry. *IEEE Geoscience and Remote Sensing Letters*. DOI: 10.1109/LGRS.2021.3081920
15. Kotroni, V.; Lagouvardos, K.; Bezes, A.; **Dafis, S.**; Galanaki, E.; Giannaros, C.; Giannaros, T.; Karagiannidis, A.; Koletsis, I.; Kopania, T.; Papagiannaki, K.; Papavasileiou, G.; Vafeiadis, V.; Vougioulas, E., 2021: Storm Naming in the Eastern Mediterranean: Procedures, Events Review and Impact on the Citizens Risk Perception and Readiness. *Atmosphere*, 12, 1537. <https://doi.org/10.3390/atmos12111537>

International Conferences and Workshops

1. Rysman J.F., Claud C., **Dafis S.**, 2021: New insights into polar lows characteristics from passive microwave observations. 15th Polar Low Working Group Meeting, Moscow.
2. Karagiannidis A., Lagouvardos K., **Dafis S.**, Kalimeris A., and Kotroni V., 2021: Ianos: - A hurricane in the Mediterranean, EUMETSAT Meteorological Satellite Conference

2021, Boulder, Colorado.

3. **Dafis S.**, Claud C., Rysman J.F., Kotroni V., Lagouvardos K., 2021: Hail-producing storms and passive microwave retrievals. 3rd European Hail Workshop, Karlsruhe, Germany (poster).
4. **Dafis S.**, Claud C., Kotroni V., Lagouvardos K., Rysman J.F., 2020: Contribution of deep convection in the intensification of Mediterranean Tropical-Like Cyclones. Méditerranée: L'expertise scientifique pour les décideurs – MED2020 MISTRALS. Montpellier, France, November 2020 (poster).
5. Rysman J.F., Claud C., **Dafis S.**, 2020: Global Monitoring of Deep Convection using Passive Microwave Observations. Earth Observation for Water Cycle Science 2020 (EO 4 Water 2020). Online meeting organized by ESA, UNESCO, CNES, CNRS/IPSL, GEWEX, EC (DG-RTD) and UVSQ, November 2020 (poster).
6. **Dafis S.**, Claud C., Kotroni V., Lagouvardos K., Rysman J-F., 2019: Deep moist convection in tropical-like Mediterranean cyclones and evaluation of numerical guidance. 19th Cyclones Workshop, Kloster Seeon, Germany (oral).
7. **Dafis S.**, Claud C., Kotroni V., Lagouvardos K., Rysman J-F., 2019: Satellite observations of deep convection during Mediterranean Hurricanes. 10th European Conference on Severe Storms, Krakow, Poland (oral).
8. E. Defer, S. Coquillat, P. De Guibert, D. Lambert, K. Lee, J.-P. Pinty, **S. Dafis**, et al., 2019: The EXAEDRE campaign for a better understanding of the microphysical, dynamical and electrical processes in thunderstorms. 12th HyMeX workshop. Split, Croatia.
9. E. Defer, S. Coquillat, P. De Guibert, D. Lambert, K. Lee, J.-P. Pinty, **S. Dafis**, et al., 2019: Microphysical, dynamical and electrical properties of the thunderstorm sampled during the 17 September 2018 EXAEDRE IOP2 flight. EGU Conference, Vienna Austria.
10. **Dafis S.**, Claud C., Kotroni V., Lagouvardos K., Rysman J-F., Funatsu B.M., 2018: Use of satellite microwave observations for Hail detection in the Mediterranean. 16th EGU-Plinius conference on Mediterranean risks. Montpellier, France, October 2018 (oral).
11. Lagouvardos K., Giannaros T.M., Kotroni V., Karagiannidis S., **Dafis S.**, Papagiannaki K., 2018: Analysis of one of the deadliest flood events in Attica, Greece: the case of Mandra flood on 15 November 2017. 16th EGU-Plinius conference on Mediterranean risks. Montpellier, France, October 2018 (poster).
12. Tsioumitas K., Hatzianastassiou N., Benas N., **Dafis S.**, Meloni D., Pace G., di Sarra A.G., Matsoukas C., Vardavas I., 2018: Modeling 15-year surface solar radiation fluxes in central Mediterranean (Lampedusa island) using MODIS satellite and local cloud optical thickness data. 14th International Conference for Meteorology and Climatology COMECAP 2018, Alexandroupoli, Greece.
13. Giannaros T.M., Kotroni V., Lagouvardos K., Galanaki E., **Dafis S.**, 2018: HERMES: An integrated severe and extreme weather forecasting system. 11th HyMeX workshop. Lecce, Italy, June 2018 (poster).
14. **Dafis S.**, Claud C., Kotroni V., Lagouvardos K., Rysman J-F., Funatsu B.M., 2018: Hail detection in Europe from Passive Microwave Brightness Temperatures. 11th HyMeX workshop. Lecce, Italy, June 2018 (oral).
15. **Dafis S.**, Claud C., 2018: Polar Lows and Medicanes: Differences and Similarities. 14th European Polar Low Working Group. Trier, Germany, April 2018 (oral).
16. **Dafis S.**, Giannaros T.M., Kotroni V., Lagouvardos K., Claud C., Fierro A.O., Mansell E., 2017: Explicit forecasting of lightning activity during Medicanes. 18th Cyclones Workshop. Montreal, Canada, October 2017 (poster).
17. **Dafis S.**, Giannaros T.M., Kotroni V., Lagouvardos K., Claud C., Fierro A.O., Mansell

- E., 2017: Explicit Lightning Forecasting in Greece. 10th HyMeX workshop. Barcelona, Spain, July 2017 (poster).
18. **Dafis S.**, Claud C., Rysman J-F., Flaounas E., 2017: Characterization of deep convection within a tropical-like cyclone over the Mediterranean Sea. HyMeX Science Team Med-cyclones workshop March 2017, Paris (oral).
 19. **Dafis S.**, Claud C., Rysman J-F., Flaounas E., 2016: Deep moist convection characteristics of Medicane Rolf, November 2011. HyMeX Science Team Lightning workshop October 2016, Toulouse (oral).
 20. Lampiris A., **Dafis S.**, Papavasileiou G., 2016: Observational and numerical study of a tornado outbreak in Attica and Euboea. 13th International Conference for Meteorology and Climatology COMECAP 2016, Thessaloniki, Greece.
 21. **Dafis S.**, Lolis J. C., Bartzokas A., Gkousarov G., 2015: The characteristics of a High-Precipitation Tornadic-Supercell in a metropolitan area of Northwest Greece. 9th HyMeX workshop, Mykonos, Greece (poster).
 22. Sioutas M., **Dafis S.**, Papavasileiou G., Doe R.K., 2015: Tornado occurrence in Greece: Influencing variables and spatio-temporal variations. European Conference on Severe Storms 2015, Wiener Neustadt, Austria (poster).
 23. **Dafis S.**, Lagouvardos K., Kotroni V., Giannaros T.M., Bartzokas A., 2015: Sensitivity of numerical simulations of a Mesoscale Convective System in France, during the HyMeX - SOP1 using the WRF model. 9th HyMeX workshop, Mykonos, Greece (oral).
 24. **Dafis S.**, Hatzianastasiou N., Meloni D., Pace G., di Sarra A.G., 2015: A climatology of cloud optical thickness in the central Mediterranean (Lampedusa) based on surface solar irradiance measurements. IUGG 2015, Prague, Czech Republic (poster).
 25. **Dafis S.**, Hatzianastasiou N., Meloni D., Pace G., di Sarra A.G., di Biagio C., 2014: Cloud-screening algorithm and determination of clear sky solar irradiance and cloud properties in the island of Lampedusa. 12th International Conference for Meteorology and Climatology COMECAP 2014, Heraklion, Greece (poster).