

Dr. Nikolaos S. Bartsotas

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Nationality: Greek
Birthday: 29 September 1979
Gender: Male

Education and Work Experience

Nikolaos Bartsotas (NB) received his B.Sc. degree from the Physics Department of the University of Athens, followed by a M.Sc. in Environmental Physics / Meteorology and a Ph.D. in Atmospheric Modeling and Remote Sensing. He has a professional experience as a research scientist in:

Atmospheric Modeling & Weather Forecasting Group, University of Athens, Greece,
Innovative Technologies Center SA, Athens, Greece,
Weather and Marine Technologies, Athens, Greece,
University of the Aegean, Department of Geography and
National Observatory of Athens - Beyond Center of Excellence.

He has been actively involved in a number of FP6/FP7/H2020 research programs, including Earth2Observe (Global Earth Observation for Integrated Water Resource Assessment), OPERANDUM (Open-Air Laboratories for Nature Based Solutions to Manage Hydro-Meteo Risks) as well as the implementation of operational forecasting platforms and staff training in agencies such as Qatar Meteorology Department (QMD) and Saudi Aramco. He is currently a pilot leader H2020 e-Shape - EuroGEO Showcases: Applications powered by Europe.

His research interests include the study of flash-flood inducing heavy precipitation events over complex terrain areas as well as the effective fusion of NWP with available EO datasets and ground observations towards a more accurate monitoring of precipitation. He is a reviewer for the Journal of Hydrometeorology (American Meteorological Society) and Journal of Hydrology, as well a member of European Geophysical Union (EGU) and American Geophysical Union (AGU).

Computer Skills and Competences

Operational systems: Mac OSX, Linux, Windows.

Programming: Matlab, C++, Fortran, Python, Perl, java, HTML, PHP, bash, JSON, cShell, ajax.

Parallel computing: MPICH2/3, openMPI, iMPI, MVAPICH.

Atmospheric Models: RAMS, ICLAMS, MM5, WRF.

Chemical Models: CAMx, ICLAMS-Chem, WRF-Chem.

Dispersion Models: HYPACT, FLEXPART

Data Visualisation: ArcGIS, QGIS, NCL, REVU, GRADS, IDV, Panoply, RIP, Google Maps API.

Data handling: HDF, GRIB, GRIB2, NETCDF, RALPH2.

Databases: MySQL.

HPC experience: SLURM, Torque/MOAB, Samba.

Other: Apple iWork, MS Office, Adobe Photoshop / Lightroom, Final Cut Suite, RapidWeaver.

Peer-reviewed journal articles

- Apostolakis, A.; Girtsou, S.; Giannopoulos, G.; **Bartsotas, N.S.**; Kontoes, C. Estimating Next Day's Forest Fire Risk via a Complete Machine Learning Methodology. *Remote Sens.* 2022, 14, 1222. <https://doi.org/10.3390/rs14051222>
- Patlakas, P.; Stathopoulos, C.; Flocas, H.; **Bartsotas, N.S.**; Kallos, G. Precipitation Climatology for the Arid Region of the Arabian Peninsula—Variability, Trends and Extremes. *Climate* 2021, 9, 103. <https://doi.org/10.3390/cli9070103>
- Giannakaki, E.; Kokkalis, P.; Marinou, E., **Bartsotas, N. S.**, Amiridis, V., Ansmann, A., and Komppula, M.: The potential of elastic/polarization lidars to retrieve extinction profiles, *Atmos. Meas. Tech. Discuss.*, <https://doi.org/10.5194/amt-2019-271>, 2019.
- Bartsotas, N.S.**, Anagnostou, E. N., Nikolopoulos, E. I., & Kallos, G. (2018). Investigating satellite precipitation uncertainty over complex terrain. *Journal of Geophysical Research: Atmospheres*, 123, 5346–5359. <https://doi.org/10.1029/2017JD027559>
- Koukoulas, M., Nikolopoulos, E., Kushta, J., **Bartsotas, N.S.**, Kallos, G. and Anagnostou, E., (2018). A Numerical Sensitivity Analysis of Soil Moisture Feedback on Convective Precipitation. *Journal of Hydrometeorology*. 20. 10.1175/JHM-D-18-0134.1.
- Stathopoulos, C., Galanis, G., **Bartsotas, N. S.**, and Kallos, G.: A methodology for optimizing probabilistic wind power forecasting, *Adv. Geosci.*, 45, 289-294, <https://doi.org/10.5194/adgeo-45-289-2018>, 2018.
- Tsekeri, A., Lopatin, A., Amiridis, V., Marinou, E., Igloffstein, J., Siomos, N., Solomos, S., Kokkalis, P., Engelmann, R., Baars, H., Gratsea, M., Raptis, P. I., Binietoglou, I., Mihalopoulos, N., Kalivitis, N., Kouvarakis, G., **Bartsotas, N.**, Kallos, G., Basart, S., Schuettmeyer, D., Wandinger, U., Ansmann, A., Chaikovskiy, A. P., and Dubovik, O.: "GARRLiC and LIRIC: strengths and limitations for the characterization of dust and marine particles along with their mixtures", *Atmos. Meas. Tech. Discuss.*, <https://doi.org/10.5194/amt-2017-214>, 2017.
- Bartsotas, N.S.**, E. Nikolopoulos, E. Anagnostou, S. Solomos, and G. Kallos, 2016: Moving toward Subkilometer Modeling Grid Spacings: Impacts on Atmospheric and Hydrological Simulations of Extreme Flash Flood-Inducing Storms. *J. Hydrometeor.* doi:10.1175/JHM-D-16-0092.1.
- Nikolopoulos, E. I., **N. S. Bartsotas**, E. N. Anagnostou, and G. Kallos, 2015: Using High- Resolution Numerical Weather Forecasts to Improve Remotely Sensed Rainfall Estimates: The Case of the 2013 Colorado Flash Flood. *J. Hydrometeor.*, 16, 1742– 1751, doi:10.1175/JHM-D-14-0207.1.
- George Kallos, Stavros Solomos, Joni Kushta, Christina Mitsakou, Christos Spyrou, **Nikolaos Bartsotas** and Christina Kalogeri: "Natural and anthropogenic aerosols in the Eastern Mediterranean and Middle East: Possible impacts", *Science of the Total Environment*, Vol. 488-489, August 2014, p. 389-397.

International Conference Contributions

- Vasileios Sitokonstantinou, Alkiviadis Koukos, Charalampos Kontoes, **Nikolaos S. Bartsotas**, Vassilia Karathanassi, "Semi-supervised phenology estimation in cotton parcels with Sentinel-2 time series", IGARSS 2021, Brussels, Belgium.
- Platon Patlakas, Christos Stathopoulos, **Nikolaos S. Bartsotas**, Helena Flocas and George Kallos, "Precipitation climatology for the Arabian Peninsula: from droughts to extremes", EMS Annual Meeting 2021 online, 3–10 September 2021.

Nikolaos S. Bartsotas, Vasileios Sitokonstantinou, Charalambos Kontoes, Alkiviadis Koukos, Alexia Tsouni, Savvas Rogotis, Dimitrios Sykas, and Nikolaos Marianos, *"A novel approach on smart farming: combining past, present and future EO, climatic and NWP datasets towards an integrated crop monitoring, risk-assessment and yield forecasting suite"*, American Geophysical Union Fall Meeting 2020, San Francisco, California, USA.

Martina Lagasio, Agostino N. Meroni, Luca Pulvirenti, Giuseppe Squicciarino, Antonio Parodi, Alexia Tsouni, Haris Kontoes, and **Nikos Bartsotas**, *"Sentinel products assimilation in a complete hydro/fire-meteorological chain: nearly operational experiments in the framework of the E-SHAPE project"*, European Geophysical Union General Assembly, Vienna, Austria, 2020.

Nikolaos S. Bartsotas, *"Developing tailored services for the agro-insurance sector over northern Greece: The case of Rodopi / cotton crop"*, Smart Farming Conference 2020, Eindhoven, Netherlands.

Nikolaos Bartsotas, Emmanouil Anagnostou, Efthymios Nikolopoulos, and George Kallos, *"Analyzing satellite QPE underestimation over mountainous terrain: A NWP-based microphysical investigation"*, European Geophysical Union General Assembly, Vienna, Austria, 2018.

Nikolaos S. Bartsotas, Efthymios I. Nikolopoulos, Emmanouil N. Anagnostou and George Kallos, *"Enhancing Quantitative Precipitation Estimates over the Alps and Blue Nile Through the Use of High-Resolution Numerical Weather Predictions"*, European Geophysical Union General Assembly, Vienna, Austria, 2017.

Stella Apostolopoulou, Elina Giannakaki, **Nikolaos Bartsotas**, Eleni Marinou, Vassilis Amiridis, Sara Basart, Holger Baars, Ronny Engelmann, Albert Ansmann, George Kallos, *"Mass concentration profiling at the ACTRIS station of Finokalia, Crete"*, ILRC28, June 25-30 2017, Bucharest, Romania.

E. Giannakaki, P. Kokkalis, E. Marinou, S. Solomos, V. Amiridis, A. Ansmann, **N.S. Bartsotas**, R. Engelmann and M. Komppula, *"Extinction profile retrieval at Finokalia, Crete"*, ILRC28, June 25-30 2017, Bucharest, Romania.

George Kallos, Platon Patlakas, **Nikolaos Bartsotas**, Christos Spyrou, Jumaan Al Qahtani, Ioannis Alexiou and Ayman M Bar, *"Modeling the dust cycle from sand dunes to haboobs"*, European Geophysical Union General Assembly, Vienna, Austria, 2017.

Patlakas, P., Kushta, J., Drakaki, E., Al Qahtani, J., Alexiou, I., **Bartsotas, N.**, Spyrou, C. and Kallos, G. *"The dust cycle in the Arabian Peninsula and its role in the urban air quality"*. 35th International Technical Meeting on Air Pollution Modelling and its Application, 3-7 October, 2016, Chania, Crete, Greece.

Bartsotas, N.S., Nikolopoulos, E.I., Anagnostou, E. & Kallos, G., *"The use of high-resolution atmospheric simulations over mountainous terrain for deriving error correction functions of satellite precipitation products"*, EGU2015-3754, European Geophysical Union General Assembly, Vienna, Austria, 2015.

Nikolopoulos, E.I., **Bartsotas, N.S.**, Anagnostou, E.N., & Kallos, G. (2015). Advancing satellite-based flood prediction over complex terrain with the aid of high-resolution atmospheric modeling. In 9th International HyMeX workshop, 21-25 Sep., Mykonos, Greece.

Nikolopoulos, E.I., **Bartsotas, N.S.**, Anagnostou, E.N., & Kallos, G. (2015). Using a high-resolution numerical weather prediction model to improve satellite-based hydrologic simulations over mountainous regions. In Earth Observation for Water Cycle Science 2015, Frascati, Italy.

Nikolopoulos, E. I., **Bartsotas, N.S.**, Borga, M., & Kallos, G., "Evaluating the use of high-resolution numerical weather forecast for debris flow prediction", EGU2015-8902, European Geophysical Union General Assembly, Vienna, Austria, 2015.

Nikolaos S. Bartsotas, Efthymios Nikolopoulos, Emmanouil Anagnostou, and George Kallos, "*Numerical analysis of flash-flood inducing storms in mountainous areas*", EGU2014-14773, European Geophysical Union General Assembly, Vienna, Austria, 2014.

Christos Stathopoulos, George Galanis, Nicolas Barranger, Christina Kalogeri, **Nikolaos S. Bartsotas** and George Kallos, "Role of model resolution and microphysical properties in simulating flash flood inducing storms" [EGU2013-5510], IRPWind / EERA Joint Programme Wind R&D Conference, Amsterdam, Netherlands, 25 - 26 September 2014.

Efthymios I. Nikolopoulos, Yiwen Mei, Emmanouil N. Anagnostou, **Nikolaos S. Bartsotas**, Marco Borga and George Kallos: "*Satellite-based hydrology: Evaluation over mountainous basins and advancements based on high-res NWP models*", 8th HyMeX workshop, La Valleta, Malta, 15-18 September 2014.

Nikolaos S. Bartsotas, Efthymios I. Nikolopoulos, Stavros Solomos, Emmanouil N. Anagnostou and George Kallos, "*The impact of model resolution and cloud microphysics on the simulation of extreme flash-flood triggering storms*", 12th International Conference on Meteorology, Climatology and Atmospheric Physics [COMECAP 2014], Heraclion, Greece, 28 - 31 May, 2014.

Nikolaos S. Bartsotas, Stavros Solomos, Efthymios I. Nikolopoulos, Emmanouil Anagnostou and George Kallos, "*Using high-resolution atmospheric modeling to understand the characteristics of extreme flash-flood triggering storms in mountainous areas*", H53D-1448, American Geophysical Union Fall Meeting 2013, San Francisco, California, USA.

Nikolaos S. Bartsotas, Efthymios I. Nikolopoulos, Emmanouil N. Anagnostou, Stavros Solomos, Jumaan Al Qahtani, Elyas Alaa, Ioannis Alexiou, and George Kallos, "*Using satellite-rainfall data to identify flood prone areas over the Saudi Arabian Peninsula*", European Geophysical Union General Assembly, Vienna, Austria, 2013.

Nikolaos S. Bartsotas, Stavros Solomos, Efthymios I. Nikolopoulos, Emmanouil Anagnostou and George Kallos, "*Role of model resolution and microphysical properties in simulating flash flood inducing storms*" [EGU2013-5510], European Geophysical Union General Assembly, Vienna, Austria, 2013.

George Kallos, George Galanis, Christos Spyrou, Christina Mitsakou, Stavros Solomos, **Nikolaos Bartsotas**, Christina Kalogrei, Ioannis Athanasis, Sarantis Sofianos, Vassios Vervatis, Panagiotis Axaopoulos, Alexandros Papapostolou, Jumaan Al Qahtani, Elyas Alaa, Ioannis Alexiou, and Daniel Beard, "*An integrated weather and sea-state forecasting system for the Arabian Peninsula (WASSF)*", European Geophysical Union General Assembly, Vienna, Austria, 2013.

Emmanouil N. Anagnostou, Efthymios I. Nikolopoulos, **Nikolaos Bartsotas**, Stavros Solomos, and George Kallos, "*Using Satellite Rainfall for Simulation of Flash Floods in Mountainous Basins*" [EGU2013-8489], European Geophysical Union General Assembly, Vienna, Austria, 2013.

Jumaan Al Qahtani, Elyas Alaa, George Kallos, George Galanis, Sarantis Sofianos, Christina Mitsakou, Chris Spyrou, Christina Kalogeri, **Nikolaos Bartsotas**, John Athanaselis, Vassilios Vervatis, Stavros Solomos, Panagiotis Axaopoulos, Daniel W. Beard and Ioannis Alexiou, "An Integrated Weather and Sea State Forecasting System for the Arabian Peninsula (WASSF)" [P3.04], International Technical Meeting (ITM) on Air Pollution Modelling and its Applications, Miami, Florida, USA, 2013.

Christos Spyrou, George Kallos and **Nikolaos Bartsotas**, "Modelling the regional characteristics of desert dust sources", 7th International Workshop on Sand/Duststorms and Associated Dustfall, Frascati, Rome, Italy, 2013.

Technical Reports

"Development of a national-scale flash flood guidance system for Saudi Arabia: Report on Atmospheric & hydrological model Integration / simulations". Prepared for Saudi Aramco by George Kallos, Emmanouil N. Anagnostou, **Nikolaos Bartsotas**, Efthymios .I. Nikolopoulos and Stavros Solomos, 2013.

"Development of a national-scale flash flood guidance system for Saudi Arabia: Report on the delineation and selection of hydrological basins", prepared for Saudi Aramco by George Kallos, Emmanouil N. Anagnostou, **Nikolaos Bartsotas**, Efthymios .I. Nikolopoulos and Stavros Solomos, 2012.

G. Kallos, S. Solomos, J. Kushta, C. Mitsakou, C. Spyrou, **N. Bartsotas**, C. Kalogeri, "Natural and anthropogenic aerosols in the mediterranean region and middle east: patterns and impacts", air quality management at urban, regional and global scales", 4th international symposium and iuappa regional conference, Istanbul, Turkey, 2012.

Stavros Solomos, George Kallos, Chris Spyrou, Jonilda Kushta, Christina Mitsakou, Panos Athanasiadis, Christina Kalogeri, **Nikolaos Bartsotas**: "The role of airborne particles on radiation-cloud-precipitation cycle in Mediterranean" (invited), 3rd International Meeting on Meteorology and Climatology of the Mediterranean, Basilicata, Italy, 2011

"Meteorological analysis for the area of eastern Saudi Arabia: 1 May - 31 August 2008", prepared for Saudi Aramco by George Kallos, Stavros Solomos, **Nikolaos Bartsotas**, Christos Spyrou, Kris Vijayaraghavan and Greg Yarwood, June 2011.

Memberships

European Geophysical Union (EGU)

American Geophysical Union (AGU)