

KONSTANTINOS V. VAROTSOS

RESEARCH INTERESTS

Dr. Konstantinos Varotsos (male) holds a Doctorate in Physics (National Kapodistrian University of Athens, 2015). From 2015 he is working as a Postdoctoral Researcher in the CLIMADAPT Group conducting research on the impacts of climate change and adaptation on various sectors such as air-quality, agriculture, tourism, urban environment and human health. He is/was involved in a number of Climate Change related projects such as ENSEMBLES, CIRCE, LIFE-ADAPT2CLIMA (Adaptation to Climate change Impacts on the Mediterranean islands' Agriculture), LIFE-URBANPROOF (Climate Proofing Urban Municipalities), H2020 MED-GOLD (Turning climate-related information into added value for traditional MEDiterranean Grape, OLive and Durum wheat food systems), CLIMPACT. He authored and co-authored over 20 peer-reviewed papers and more than 15 conference papers and abstracts, book chapters, and technical reports.

HIGHER EDUCATION

- 2015 **PhD** in Physics Science, School of Science, Faculty of Physics, National and Kapodistrian University of Athens (Greece)
- 2008 **MSc** in Environmental Physics, School of Science, Faculty of Physics, National and Kapodistrian University of Athens (Greece)
- 2005 **BSc** in Physics Science, School of Science, Faculty of Physics, National and Kapodistrian University of Athens (Greece)

LANGUAGES

English (fluent), **Spanish** (very good), **Greek** (mother tongue)

ACADEMIC POSITIONS

2007-PRESENT

Research Scientist, Climate change impacts and adaptation Group-Institute for Environmental Research and Sustainable Development, National Observatory of Athens, Greece.

2008-2013

Research Scientist, Numerical Applications in the Atmosphere Group -Sector of Environmental Physics and Meteorology, Department of Physics, National and Kapodistrian University of Athens.

TEACHING EXPERIENCE

2004

Teaching at Laboratories of Physics, Department of Physics, National and Kapodistrian University of Athens

ADDITIONAL SKILLS

PROGRAMMING SKILL

MATLAB, R project, Python, IDL, Fortran

PUBLICATIONS IN PEER REVIEWED

- 1 Bossioli, E., Tombrou, M., Dandou, A., Athanasopoulou, E., & **Varotsos, K. V.** (2009). The Role of Planetary Boundary-Layer Parameterizations

- in the Air Quality of an Urban Area with Complex Topography. *Boundary-Layer Meteorology*, 131(1), 53-72.
- 2 Giannakopoulos, C., Hadjinicolaou, P., Kostopoulou, E., **Varotsos, K. V.**, & Zerefos, C. (2010). Precipitation and temperature regime over Cyprus as a result of global climate change. *Adv. Geosci.*, 23, 17-24. <https://doi.org/10.5194/adgeo-23-17-2010>
 - 3 **Varotsos, K. V.**, Giannakopoulos, C., & Tombrou, M. (2011). Estimating future air-quality due to climate change: the Athens case study. *Adv. Sci. Res.*, 6(1), 117-121. <https://doi.org/10.5194/asr-6-117-2011>
 - 4 Giannakopoulos, C., Kostopoulou, E., **Varotsos, K. V.**, Tziotziou, K., & Plitharas, A. (2011). An integrated assessment of climate change impacts for Greece in the near future. *Regional Environmental Change*, 11(4), 829-843. <https://doi.org/10.1007/s10113-011-0219-8>
 - 5 Bossioli, E., Tombrou, M., Helmis, C., Kurtenbach, R., Wiesen, P., Schäfer, K., **Varotsos, K. V.** (2013). Issues related to aircraft take-off plumes in a mesoscale photochemical model. *Science of The Total Environment*, 456, 69-81. <https://doi.org/10.1016/j.scitotenv.2013.02.091>
 - 6 **Varotsos, K. V.**, Giannakopoulos, C., & Tombrou, M. (2013). Assessment of the Impacts of Climate Change on European Ozone Levels. *Water, Air, & Soil Pollution*, 224(6), 1596. <https://doi.org/10.1007/s11270-013-1596-z>
 - 7 **Varotsos, K. V.**, Tombrou, M., & Giannakopoulos, C. (2013). Statistical estimations of the number of future ozone exceedances due to climate change in Europe. *Journal of Geophysical Research: Atmospheres*, 118(12), 6080-6099. <https://doi.org/10.1002/jgrd.50451>
 - 8 Augustin Colette, Camilla Andersson, Alexander Baklanov, Bertrand Bessagnet, Jørgen Brandt, Jesper H Christensen, Ruth Doherty, Magnuz Engardt, Camilla Geels, Christos Giannakopoulos, Gitte B Hedegaard, Eleni Katragkou, Joakim Langner, Hang Lei, Astrid Manders, Dimitris Melas, Frédéric Meleux, Laurence Rouïl, Mikhail Sofiev, Joana Soares, David S Stevenson, Maria Tombrou-Tzella, **Konstantinos V Varotsos**, Paul Young. (2015). Is the ozone climate penalty robust in Europe? *Environmental Research Letters*, 10(8), 084015.
 - 9 Christos Giannakopoulos, Basilis Psiloglou, Giannis Lemesios, Dimitris Xevgenos, Christina Papadaskalopoulou, Anna Karali, **Konstantinos V. Varotsos**, Maria Zachariou-Dodou, Konstantinos Moustakas, Kyriaki Ioannou, Michael Petrakis, Maria Loizidou: *Climate change impacts, vulnerability and adaptive capacity of the electrical energy sector in Cyprus*. *Regional Environmental Change* 11/2015; DOI:10.1007/s10113-015-0885-z
 - 10 Lemesios, G., Giannakopoulos, C., Papadaskalopoulou, C., Karali, A., **Varotsos, K. V.**, Moustakas, K., Loizidou, M. (2016). Future heat-related climate change impacts on tourism industry in Cyprus. *Regional Environmental Change*, 16(7), 1915-1927. <https://doi.org/10.1007/s10113-016-0997-0>
 - 11 Iphigenia Keramitsoglou, Panagiotis Sismanidis, Christos

- Giannakopoulos, Giannis Lemesios, Klea Katsouyanni, Antonis Analitis, Dimitra Founda, Anna Karali, **Konstantinos V. Varotsos**, Georgia Vlastou, Eleni Giannatou, Eleni Myrivili, Dolores Ordoñez, Tayrne Butler, Chris T. Kiranoudis, Vladimir Kendrovski: *Urban Thermal Risk Reduction: Developing and Implementing Spatially Explicit Services for Resilient Cities*. *Sustainable Cities and Society* 06/2017; 34(C):56-68., DOI:10.1016/j.scs.2017.06.006
- 12 Founda D, **Varotsos KV**, Pierros F, Giannakopoulos C (2019) Observed and projected shifts in hot extremes' season in the Eastern Mediterranean *Global and Planetary Change* 175:190-200 doi:<https://doi.org/10.1016/j.gloplacha.2019.02.012>
 - 13 **Varotsos KV**, Giannakopoulos C, Tombrou M (2019) Ozone-temperature relationship during the 2003 and 2014 heatwaves in Europe *Regional Environmental Change* doi:10.1007/s10113-019-01498-4
 - 14 Zafeiratou S, Analitis A, Founda D, Giannakopoulos C, **Varotsos KV**, Sismanidis P, Keramitsoglou I, Katsouyanni K (2019) Spatial Variability in the Effect of High Ambient Temperature on Mortality: An Analysis at Municipality Level within the Greater Athens Area *International Journal of Environmental Research and Public Health* 16:3689
 - 15 van der Schriek T, **Varotsos KV**, Giannakopoulos C, Founda D (2020) Projected Future Temporal Trends of Two Different Urban Heat Islands in Athens (Greece) under Three Climate Change Scenarios: A Statistical Approach *Atmosphere* 11:637
 - 16 van der Schriek T, Giannakopoulos C, **Varotsos KV** (2020) The impact of future climate change on bean cultivation in the Prespa Lake catchment, northern Greece *Euro-Mediterranean Journal for Environmental Integration* 5:14 doi:10.1007/s41207-020-0151-8
 - 17 Papadopoulou MP, Charchousi D, Spanoudaki K, Karali A, **Varotsos KV**, Giannakopoulos C, Markou M, Loizidou M (2020) Agricultural Water Vulnerability under Climate Change in Cyprus *Atmosphere* 11:648
 - 18 Papadaskalopoulou C, Moriondo M, Lemesios I, Karali A, Konsta A, Dibari C, Brillì L, **Varotsos KV**, Stylianou A, Loizidou M, Markou M, Giannakopoulos C (2020) Assessment of Total Climate Change Impacts on the Agricultural Sector of Cyprus *Atmosphere* 11:608
 - 19 **Varotsos KV**, Karali A, Lemesios G, Kitsara G, Moriondo M, Dibari C, Leolini L, Giannakopoulos C (2021) Near future climate change projections with implications for the agricultural sector of three major Mediterranean islands *Regional Environmental Change* 21:16 doi:10.1007/s10113-020-01736-0
 - 20 Kitsara G, van der Schriek T, **Varotsos KV**, Giannakopoulos C (2021) Future changes in climate indices relevant to agriculture in the Aegean islands (Greece) *Euro-Mediterranean Journal for Environmental Integration* 6:34 doi:10.1007/s41207-020-00233-4
 - 21 Kambezidis HD, Psiloglou BE, **Varotsos KV**, Giannakopoulos C (2021) Erratum: Kambezidis et al. *Climate Change and Thermal Comfort in*

Greece. *Climate* 2021, 9, 10 *Climate* 9:85

- 22 Moriondo M, Bindi M, Brilli L, Costafreda-Aumedes S, Dibari C, Leolini L, Padovan G, Trombi G, Karali A, **Varotsos KV**, Lemesios G, Giannakopoulos C, Papadaskalopoulou C, Merante P (2021) Assessing climate change impacts on crops by adopting a set of crop performance indicators *Euro-Mediterranean Journal for Environmental Integration* 6:45 doi:10.1007/s41207-021-00246-7

BOOK
CHAPTERS

- 1) C. Giannakopoulos, E. Kostopoulou, **K. Varotsos**, D. Founda and A. Plitharas: *Copenhagen 2009: The environment in the middle of an economical crisis. Climate change and forest fires: the case of Greece*. I. Sideris, 2011 423 pp. ISBN 978-960-08-0561-1.
- 2) Clare M. Goodess, Maureen D. Agnew, Christos Giannakopoulos, Debbie Hemming, Skander Ben Salem, Marco Bindi, Mohamed Nejmeddine Bradai, Letizia Congedi, Camilla Dibari, Hesham El-Askary, Mutasem El-Fadel, Mohamed El-Raey, Roberto Ferrise, Dimitra Founda, José M. Grünzweig, Ali Harzallah, Maria Hatzaki, Gillian Kay, Piero Lionello, César Mösso Aranda, Theib Oweis, Joan Pau Sierra, Basil Psiloglou, Marco Reale, Agustín Sánchez-Arcilla, Mohamed Senouci, Annalisa Tanzarella, **Konstantinos V. Varotsos**: *Integration of the Climate Impact Assessments with Future Projections, in Regional Assessment of Climate Change in the Mediterranean*. Edited by A. Navarra, L. Tubiana, 01/2013: chapter Volume 3: Case Studies: pages 105-162; Springer Netherlands., ISBN: 978-94-007-5792-9.

CONFERENCE
PRESENTATIONS

- **K. V. Varotsos**, C. Giannakopoulos, M. Tombrou: Estimating future air-quality due to climate change in Europe, 10th International Conference on Meteorology, Climatology and Atmospheric Physics, May 25-28, 2010, Patras, Greece.
- Giannakopoulos, C., Hatzaki, M., Kostopoulou, E., **Varotsos, K**, Psiloglou, B.E., Founda, D.: Estimating future impacts for various sectors due to climate change in Athens, Conference on Environmental Science and Technology, 8 - 10 September 2011, Rhodes island, Greece.
- **K. V. Varotsos**, C. Giannakopoulos, M. Tombrou: Climate change impact on future air quality in Europe: A two-way approach, 9th EGU General Assembly, Vienna, Austria, 3-8 April, 2011.
- **K. V. Varotsos**, C. Giannakopoulos, and M. Tombrou: Can statistical models provide valid estimates for future ozone exceedance days under climate change?, 12th EMS Annual Meeting & 9th European Conference on Applied Climatology (ECAC) Łódź, Poland, 10 - 14 September 2012.
- **K. V. Varotsos**, C. Giannakopoulos, M. Tombrou: Assessment of the Impacts of Climate Change on Ozone Air-quality in Europe, 11th International Conference on Meteorology, Climatology and Atmospheric Physics, May 29- June 1, 2012, Athens, Greece.
- **K. V. Varotsos**, A.P. Protonotariou, C. Giannakopoulos, M. Tombrou: Climate change and future ozone concentrations in high resolution over Europe, 12th International Conference on Meteorology, Climatology and Atmospheric Physics, May 28-31, 2014, Heraclion, Greece.

- **K. V. Varotsos**, C. Giannakopoulos, M. Tombrou: Assessing Statistical Model Assumptions under Climate Change, 18th EGU General Assembly, 17-22 April, 2016, Vienna, Austria.
- C. Giannakopoulos, A. Karali, G. Lemesios, V. Tenentes, **K. V. Varotsos**: Using high resolution CORDEX RCMs to assess impacts on Mediterranean islands' agriculture, International Conference on Regional Climate (ICRC)-CORDEX 2016, 17-20 May 2016, Stockholm, Sweden.
- **K. V. Varotsos**, C. Giannakopoulos, A. Karali, V. Tenentes: Evaluation of Cordex high resolution RCMs over the Mediterranean Basin, MedCliVar, 26-30 September 2016, Athens, Greece.
- Tim van der Schriek, **K. V. Varotsos**, C. Giannakopoulos: Evaluating the response of Lake Prespa (SW Balkan) to future climate change projections from a high-resolution model, 19th EGU General Assembly, 23-28 April, 2017 in Vienna, Austria.
- C. Giannakopoulos, **K. V. Varotsos**, A. Karali, D. Founda: Climate Proofing European cities: the EU Life Urban Proof Project, Cities and Climate Conference, 19-21 September 2017, Potsdam, Germany.
- C Giannakopoulos, **KV Varotsos**, A Karali, M Gratsea: Evaluating of various bias correction methods for Mediterranean agro-climate projections: first results form the MED-GOLD project, Medclivar 2018, 'Bridging the Mediterranean Climates', 18-21 September 2018, Belgrade, Serbia.
- C Giannakopoulos, M Moriondo, M Papadopoulou, A Karali, **KV Varotsos**, G Lemesios, C Papadaskalopoulou, P Merante, D Charchousi: Life Adapt2Clima Tool: A decision support tool for adaptation to climate change impacts on the Mediterranean islands' agriculture, Medclivar 2018, 'Bridging the Mediterranean Climates', 18-21 September 2018, Belgrade, Serbia.
- **K. V. Varotsos**, C. Giannakopoulos, M. Gratsea, V. Tenentes, I. Keramitsoglou, C. T. Kiranoudis: Climatological analysis of extreme precipitation in five European countries: Results from the TRIBUTE project, 16th Plinius Conference on Mediterranean Risks, 9-11 October 2018, Montpellier, France.
- Katavoutas G., Founda D., **Varotsos K.V.**, C. Giannakopoulos: Observed and projected trends in urban thermal risk at a large Mediterranean city based on bioclimatic indices - A case study for Athens (Greece), EGU General Assembly, 7-12 April 2019, Vienna, Austria.
- **K. V. Varotsos**, C. Giannakopoulos, M. Gratsea, V. Tenentes, Mediterranean agro-climate projections and the case of olives in Andalucia: results from the MED-GOLD project, 9-13 September 2019, Copenhagen, Denmark.
- Gratsea, M., **Varotsos, K.**, Lopez-Nevado, J., Lopez-Feria, S., and Giannakopoulos, C.: Return period analysis to assess the long-term impact of climate change on olive sector in Andalusia, Spain - results

from the Med-Gold project, EGU General Assembly 2021, online, 19-30 Apr 2021, EGU21-7767, <https://doi.org/10.5194/egusphere-egu21-7767>, 2021.

- **Varotsos, K. V.**, Dandou, A., Papangelis, G., Roukounakis, N., Tombrou, M., and Giannakopoulos, C.: A hybrid dynamical-statistical downscaling approach for climate change impacts analysis on high resolution in the Greater Athens Area, EGU General Assembly 2021, online, 19-30 Apr 2021, EGU21-8759, <https://doi.org/10.5194/egusphere-egu21-8759>, 2021.
- van der Schriek, T., Kitsara, G., **Varotsos, K. V.**, and Giannakopoulos, C.: The impact of temperature and precipitation changes on honey bees (*Apis mellifera*) in the Aegean region under future climate scenarios, EGU General Assembly 2021, online, 19-30 Apr 2021, EGU21-5579, <https://doi.org/10.5194/egusphere-egu21-5579>, 2021.

PARTICIPATION IN RESEARCH PROJECTS

- 1 **CLIMPACT** - Immediate integration, harmonization and optimization of existing climate services and early warning systems for climate change-related natural disasters in Greece, including supportive observations from relevant national infrastructures: 2020-present
- 2 **MED-GOLD** - Turning climate-related information into added value for traditional MEDiterranean Grape, OLive and Durum wheat food systems. Participation period:2018- present.
- 3 **THESPIA II** - Foundations of synergistic and integrated management methodologies and tools for monitoring and forecasting of environmental issues and pressures” (MIS 5002517) which is implemented under the action “Reinforcement of the Research and Innovation Infrastructure”, funded by the Operational Programme “Competitiveness, Entrepreneurship and Innovation” (NSRF 2014-2020) and co-financed by Greece and the European Union (European Regional Development Fund). Period of participation: 2017-2019.
- 4 **LIFE15 CCA/CY/000086 UrbanProof**, “Climate Proofing Urban Municipalities”. Period of participation: 2016-present
- 5 **TREASURE**, Thermal Risk Education Actions and tools for secure cities. Period of participation:2016.
- 6 **LIFE14 CCA/GR/000928**, Adaptation to Climate change impacts on the Mediterranean islands’ agriculture. Period of participation: 2015-present
- 7 **CIRCE**, Integrated Project-Climate Change and Impact Research: the Mediterranean Environment. Funded by European Commission’s FP6. Period of participation: 2008-2011.
- 8 **ENSEMBLES**, ENSEMBLE-based Prediction of Climate Changes and their Impacts. Funded by European Commission’s FP6.
- 9 **Xenios**, Climate Change Impacts on the Touristic Development of Sensitive Areas in Greece. Pilot Study: Messinia - Area of Integrated Tourist Development.

SCHOLARSHIP

Basic Research Program 'Hracleitus II' Financed by the European Union

(European Social Fund – ESF) and Greek national funds. Period of Participation: 2010-2013.