

Dr. CHRISTOS GIANNAKOPOULOS (cgiannak@noa.gr)

date of birth:20/1/1968, nationality: Greek

PROFESSIONAL EXPERIENCE

2009 - present: Research Director, National Observatory of Athens, Greece

2004 - 2008: Senior Researcher, National Observatory of Athens, Greece

2000 - 2003: Associate Researcher, National Observatory of Athens, Greece

- Atmospheric modeling, regional climate change modelling, climate change impacts and adaptation, atmospheric chemistry modeling
- assessment of impacts from future scenarios of climate change and extreme events for the sectors of energy, forest fire and tourism

1999-2000 J.P. Morgan Investment Bank, City of London, England

- Financial Analyst providing modeling support to traders. Use of derivative models to predict future profits/losses and positions, correlation between foreign exchange, interest rates, and volatility of the financial market. Sensitivity tests to monitor market risk and illiquid positions. Model calibration and parameter control.

EDUCATION

1995-1999 University of Cambridge, Department of Chemistry, Cambridge, UK, Ph.D. in ATMOSPHERIC MODELLING

Thesis: Modeling the impacts of physical and removal processes on tropospheric chemistry using a global three-dimensional off-line chemical transport model. Development of different wet deposition schemes for the scavenging of chemicals in large-scale and convective events. Dry deposition parameterizations linked to a boundary layer scheme, dependent on season, time of day and vegetation characteristics of the surface. Sensitivity of tropospheric ozone and nitrogen oxides and reservoir species to lightning and air traffic emissions How tracer studies help us understand the behavior of species affected by complex chemical reactions.

1992-1993 University of Surrey, Electronic Engineering Department, Guildford, UK, M.Sc. in TELEMATICS

Dissertation: A Gaussian plume model for the simulation of air pollution in the town of Guildford from motorways and power stations.

1990-1992 University of Athens, Laboratory of Meteorology, Athens, M.Sc. in METEOROLOGY

Dissertation: A comparison of different methods of evapotranspiration over Greece for operational use.

1986-1990 University of Athens, Physics Department, Athens, B.Sc. Degree in APPLIED PHYSICS with performance: «Very Good, 7.84/10»

Languages: English (fluent), French (very good), Italian (very good), German (basic), Greek (mother tongue).

ACHIEVEMENTS

- **Lead author** of the Intergovernmental Panel for Climate Change- United Nations (IPCC)'s *4th Assessment Report* on Climate change impacts and adaptation: **Europe Chapter** (published in 2007).

- Member of the **Climate Change Impacts Study Committee** formed by the **Bank of Greece** to study the the environmental, economic and social consequences of climate change in the Greek economy as well as to develop the Greek national adaptation strategy.
- **Lead Author** in the *Regional Assessment of Climate Change in the Mediterranean*, A. Navarra, L.Tubiana (eds.), 2013, Springer, Dordrecht, The Netherlands.
- **Author** of **80** peer reviewed papers with **h-index 23** (source web of science) and over **90** conference proceedings.
- **Supervision** of 3 Post-docs, 2 PhD and 10 MSc students.
- NATO fellowship for the M.Sc in Telematics in England.
- State Scholarship Foundation of Greece (IKY) for the PhD study at Cambridge
- British Council Fellowship award for PhD. study at Cambridge

Recent RESEARCH PROJECT EXPERIENCE as coordinator/principal investigator

1. **H2020 Med-GOLD (2017-2021)**, Turning climate-related information into added value for traditional MEDiterranean Grape, OLive and Durum wheat food systems. The long-term goal of this project is to make European agriculture and food systems more competitive, resilient, and efficient in the face of climate change, by using climate services to minimize climate-driven risks/costs and seize opportunities for added-value. MED-GOLD project aims to develop climate services for olive, grape, and durum wheat crop systems that are the basis for producing olive oil, wine and pasta.
2. **EU LIFE URBANPROOF (2016-2020)**
The overall aim of the UrbanProof project is to increase the resilience of municipalities to climate change by equipping them with a tool that supports their climate change adaptation planning. This tool will: a) Provide insight into the expected changes in climate, b) Enhance understanding of climate change impacts and the mechanisms defining vulnerability, c) Enable the exploration and evaluation of available adaptation options and d) Provide guidance for monitoring the adaptation process.
3. **EU LIFE PRESPAWATERBIRDS (2016-2021)**
The overall project aim of the LIFE Prespa Waterbirds is to improve the conservation status of target bird species in the area. The project's conservation actions will also help the ecosystem adapt to climate change, while providing benefits to the local community. In addition, the project will also contribute to the implementation of EU nature and biodiversity policy and legislation by applying Natura 2000 network site management and wetland restoration actions, as well as public awareness and training. In addition, the project will contribute to achieve "good status" of Prespa Lake under the Water Framework Directive and will contribute to the EU Climate Change Adaptation Strategy.
4. **EU LIFE ADAPT2CLIMA (2015-2019)**
The overall aim of the LIFE ADAPT2CLIMA project proposal is to build a solid knowledge base on the future climate changes and their impacts on the agricultural sector of three European islands in the Mediterranean basin, namely Crete (Greece), Sicily (Italy) and Cyprus as well as to reduce vulnerability and increase resilience to climate change risks by assessing the effectiveness of the available adaptation

measures, increasing capacity building and developing strategies for the adaptation of the agricultural sectors of the three islands to climate change.

5. **EU FP7 CLIM-RUN (2011-2014)**

CLIM-RUN aims at developing a protocol for applying new methodologies and improved modelling and downscaling tools for the provision of adequate climate information at regional to local scale that is relevant to and usable by different sectors of society (policymakers, industry, cities, etc.). The protocol is assessed by application to relevant case studies involving interdependent sectors, primarily tourism and energy, and natural hazards (wild fires) for representative target areas (mountainous regions, coastal areas, islands). CLIM-RUN is thus intended to provide the seed for the formation of a Mediterranean basin-side climate service network which would eventually converge into a pan-European network.

. **SELECTED PEER REVIEW PUBLICATIONS**

- ❑ D. Founda and C. Giannakopoulos, The exceptionally hot summer of 2007 in Athens, Greece. A typical summer in the future climate, *Global and Planetary Change*, 67, 227-236, 2009.
- ❑ C. Giannakopoulos, P. Le Sager, M. Bindi, M. Moriondo, E. Kostopoulou, C.M. Goodess, Climatic changes and associated impacts in the Mediterranean resulting from a 2 °C global warming, *Global and Planetary Change*, 68, 209-224, 2009.
- ❑ A. Protonotariou, M. Tombrou, C. Giannakopoulos, E.Kostopoulou, P.LeSager, Study of CO surface pollution in Europe based on observations and nested-grid applications of GEOS-CHEM global chemical transport model, *Tellus B*, 62, 209-227, 2010.
- ❑ Giannakopoulos C., Kostopoulou E., Varotsos KV., Tziotziou K., Plitharas A., An integrated assessment of climate change impacts for Greece in the near future, *Regional Environmental Change*, DOI: 10.1007/s10113-011-0219-8, 2011.
- ❑ Lelieveld J, Hadjinicolaou P, Kostopoulou E, Chenoweth J, El Maayar M, Giannakopoulos C, Hannides C, Lange MA, Tanarhte M, Tyrlis E, Xoplaki E., Climate change and impacts in the eastern Mediterranean and the Middle East, *Climatic Change* DOI 10.1007/s10584-012-0418-4, 2012.
- ❑ Keramitsoglou, I., Sismanidis, P., Analitis, A., Butler, T., Founda, D., Giannakopoulos, C., Giannatou, E., Karali, A., Katsouyanni, K., Kendrovski, V. and Lemesios, G., 2017. Urban thermal risk reduction: Developing and implementing spatially explicit services for resilient cities. *Sustainable Cities and Society*, 34, pp.56-68.
- ❑ van der Schriek, T. and Giannakopoulos, C., 2017. Reconstructing absolute water-level variability of Lake Prespa (SW Balkans) during the Medieval Climate Anomaly and ‘Little Ice Age’ from a prograding beach ridge complex. *The Holocene*, p.0959683617
- ❑ van der Schriek, T. and Giannakopoulos, C., 2017. Determining the causes for the dramatic recent fall of Lake Prespa (southwest Balkans). *Hydrological Sciences Journal*, 62(7), pp.1131-1148.
- ❑ Mitsopoulos, I., Mallinis, G., Karali, A., Giannakopoulos, C. and Arianoutsou, M., 2016. Mapping fire behaviour under changing climate in a Mediterranean landscape in Greece. *Regional environmental change*, 16(7), pp.1929-1940.
- ❑ Lemesios, G., Giannakopoulos, C., Papadaskalopoulou, C., Karali, A., Varotsos, K.V., Moustakas, K., Malamis, D., Zachariou-Dodou, M., Petrakis, M. and Loizidou, M., 2016. Future heat-related climate change impacts on tourism industry in Cyprus. *Regional environmental change*, 16(7), pp.1915-1927.

- Papadopoulou, M.P., Charchousi, D., Tsoukala, V.K., Giannakopoulos, C. and Petrakis, M., 2016. Water footprint assessment considering climate change effects on future agricultural production in Mediterranean region. *Desalination and Water Treatment*, 57(5), pp.2232-2242.
- Varotsos, K.V., Protonotariou, A.P., Giannakopoulos, C. and Tombrou, M., 2016. Climate change and future ozone concentrations in high resolution over Europe.
- Lelieveld, J., Hadjinicolaou, P., Kostopoulou, E., Giannakopoulos, C., Pozzer, A., Tanarhte, M. and Tyrlis, E., 2014. Model projected heat extremes and air pollution in the eastern Mediterranean and Middle East in the twenty-first century. *Regional environmental change*, 14(5), pp.1937-1949.
- Kostopoulou, E., Giannakopoulos, C., Hatzaki, M., Karali, A., Hadjinicolaou, P., Lelieveld, J. and Lange, M.A., 2014. Spatio-temporal patterns of recent and future climate extremes in the eastern Mediterranean and Middle East region. *Natural Hazards and Earth System Sciences*, 14(6), pp.1565-1577.
- Tyrlis, E., Tymvios, F.S., Giannakopoulos, C. and Lelieveld, J., 2015. The role of blocking in the summer 2014 collapse of Etesians over the eastern Mediterranean. *Journal of Geophysical Research: Atmospheres*, 120(14), pp.6777-6792.
- Kostopoulou, E., Giannakopoulos, C., Hatzaki, M., Karali, A., Hadjinicolaou, P., Lelieveld, J. and Lange, M.A., 2013. Assessment of climate change extremes over the Eastern Mediterranean and Middle East region using the Hadley Centre PRECIS Regional Climate Model. In *Advances in Meteorology, Climatology and Atmospheric Physics* (pp. 547-554). Springer, Berlin, Heidelberg.
- Colette, A., Andersson, C., Baklanov, A., Bessagnet, B., Brandt, J., Christensen, J.H., Doherty, R., Engardt, M., Geels, C., Giannakopoulos, C. and Hedegaard, G.B., 2015. Is the ozone climate penalty robust in Europe?. *Environmental Research Letters*, 10(8), p.084015.
- Kalabokidis, K., Palaiologou, P., Gerasopoulos, E., Giannakopoulos, C., Kostopoulou, E. and Zerefos, C., 2015. Effect of climate change projections on forest fire behavior and values-at-risk in Southwestern Greece. *Forests*, 6(6), pp.2214-2240.
- Karali, A., Hatzaki, M., Giannakopoulos, C., Roussos, A., Xanthopoulos, G. and Tenentes, V., 2014. Sensitivity and evaluation of current fire risk and future projections due to climate change: the case study of Greece. *Natural Hazards and Earth System Sciences*, 14(1), pp.143-153.
- Giannakopoulos, C., E. Kostopoulou, P. Hadjinicolaou, M. Hatzaki, A. Karali, J. Lelieveld, and M. A. Lange. "Impacts of climate change over the Eastern Mediterranean and Middle East region using the Hadley Centre PRECIS RCM." In *Advances in Meteorology, Climatology and Atmospheric Physics*, pp. 457-463. Springer, Berlin, Heidelberg, 2013.
- Athanasopoulou, E., Rieger, D., Walter, C., Vogel, H., Karali, A., Hatzaki, M., Gerasopoulos, E., Vogel, B., Giannakopoulos, C., Gratsea, M. and Roussos, A., 2014. Fire risk, atmospheric chemistry and radiative forcing assessment of wildfires in eastern Mediterranean. *Atmospheric environment*, 95, pp.113-125.