Prof. Alkiviadis F. Bais - CURICULUM VITAE

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Studies

1980: BA in Physics, Aristotle University of Thessaloniki, Greece.

1982: Summer Course in Air-Sea Interaction, University of Washington, Seattle, USA.

1984: Ph.D. in Physics, "Investigation of ultraviolet radiation transfer in the atmosphere", Aristotle University of Thessaloniki, Greece.

Academic Positions

Emeritus Professor at the Physics Department, Aristotle University of Thessaloniki, Greece (since 2024)

Head of the School of Physics, AUTh (2017-2020)

Member of the Quality Assurance Unit of AUTh (2015-2022)

Director Graduate Program in Environmental Physics, Physics Department, AUTh (2002-2016)

Head of the Laboratory of Atmospheric Physics, Physics Department, AUTh (2002-2023)

Head of Section of Applied and Environmental Physics, Physics Department, AUTh (2000-2003), (2007-2009).

Professor at the Physics Department, Aristotle University of Thessaloniki, Greece (since 2008)

Associate Professor at the Physics Department, Aristotle University of Thessaloniki, Greece (1998- 2008)

Visiting Scientist National Center for Atmospheric Research, Colorado, USA (summer 1998)

Assistant Professor at the Physics Department, Aristotle University of Thessaloniki, Greece (1991-1994)

Lecturer at the Physics Department, Aristotle University of Thessaloniki, Greece (1987-1990)

Scientific assistant at the Laboratory of Atmospheric Physics, Physics Department, Aristotle University of Thessaloniki, Greece (1982-1987)

Research Interests

Main research interests include the transfer of solar ultraviolet (UV) radiation through the atmosphere, the physics and variations of stratospheric ozone and processes related to global change. Particular emphasis is given in processes related to the effects of different atmospheric variables, such as ozone, aerosols and clouds, on UV radiation, as well as in investigation of ecosystem and health impacts of solar UV radiation changes. Experimental work includes monitor-

ing of UV radiation, ozone, other trace gasses with DOAS/MAX-DOAS techniques, and aerosol optical properties, as well as instrumentation technology for these measurements, data management and QA/QC procedures. Emphasis in given also on the development and testing of calibration procedures for spectral, broadband, and narrowband solar radiation instruments. Modelling studies are focused on the interpretation, simulation and predictions of solar radiation changes, including solar energy.

Membership with Scientific Societies and Panels

Member, Greek Union of Physics

Member, Hellenic Meteorological Society

Member, American Society for Photobiology

Member, European Geophysical Union

Member, American Geophysical Union

Member of the Instrumentation Working Group of the WMO AD HOC Scientific Steering Committee on UV Monitoring, 1994-2011.

Member of the Environmental Effects Assessment Panel to the parties of the Montreal Protocol, UNEP, since 2000

Member of the International Ozone Commission, 2008-2016

Member of the International Radiation Commission, 2013-2020

Chairman of the Scientific Advisory Group for Ozone (SAG-O3) of WMO, 2013-2019

Member of the Scientific Advisory Group for Ozone and UV radiation (SAG-O3-UV) of WMO, since 2019

Co-editor, special issue Quadrennial Ozone Symposium 2016, Jointly between Atmospheric Chemistry and Physics and Atmospheric Measurement Techniques

Associate Editor, Photochemical & Photobiological Sciences, since 2021

Teaching

Undergraduate program - Physics Dept. - A.U.Th.

Introduction to Atmospheric Physics

Atmospheric Technology

Renewable Energy Resources

Graduate program in Environmental Physics - Physics Dept. - A.U.Th.

Atmospheric Radiation

Technology of atmospheric monitoring

Solar radiation modelling

Atmospheric Physics Lab

Renewable energy resources

Supervising MSc and PhD theses

Graduate program in Environmental physics: 33 M.Sc. theses since 1995

Physics Department, AUTh: 19 Ph.D. theses since 2000 (1 in progress)

Participation and management of selected research projects

A full list of projects can be found HERE

1. H.F.R.I.'s 2nd Call for the procurement of High Value Research Equipment, "Long term monitoring of total ozone and spectral UV radiation in Thessaloniki", Principal Investigator, 2025
2. ESA, Fiducial Reference Measurements for Ground-Based DOAS Air-Quality Observations 2.0, Principal Investigator, 2021.
3. Ministry of Developments and Investments, Panhellenic infrastructure for Atmospheric composition and climate change, Co-Investigator, 2018.
4. Ministry of Education, Optimization and application of methods for ground-based remote sensing of aerosols and ozone in the lower troposphere for investigating their variability, Principal Investigator, 2018.
5. BIRA/ESA, Participation of AUTh with Phaethon system in CINDI-2 maxDOAS campaign, Principal Investigator, 2016.
6. EURAMET, EMRP Researcher Grant, Traceability for atmospheric total column ozone, 2014.
7. EC - FP7-SPACE-2013-1, Quality Assurance for Essential Climate Variables (QA4ECV), Principal Investigator, 2014.
8. EC - Information Society and Media Directorate General, A single multi-purpose SOA platform that delivers environmental permissions services through the cloud of e-Government services and applications, Principal Investigator, 2012.

Publications

Peer reviewed papers (222) citations: 12108/8149 (w/wo co-authors) h-index: 55/44

Assessment reports (13)

Conference proceedings (128)

Conference presentations-posters (100)

Other publications (18)

A full list of these publications can be found HERE

Selected publications (last 10 years)

1. Natsis, A., A. Bais, and C. Meleti, Trends from 30-Year Observations of Downward Solar Irradiance in Thessaloniki, Greece, Applied Sciences, 14(1), 252, 2024.
2. Karagkiozidis, D., M.-E. Koukouli, A. Bais, D. Balis, and P. Tzoumaka, Assessment of the NO2 Spatio-Temporal Variability over Thessaloniki, Greece, Using MAX-DOAS Measure-ments and Comparison with S5P/TROPOMI Observations, Applied Sciences, 13(4), 2641, 2023
3. Bernhard, G. H., A. F. Bais, P. J. Aucamp, A. R. Klekociuk, J. B. Liley, and R. L. McKenzie, Stratospheric ozone, UV radiation, and climate interactions, Photochem. Photobiol. Sci., 1-53, 2023.
4. Karagkiozidis, D., M. M. Friedrich, S. Beirle, A. Bais, F. Hendrick, K. A. Voudouri, I. Fountoulakis, A. Karanikolas, P. Tzoumaka, M. Van Roozendael, D. Balis, and T. Wagner, Retrieval of tropospheric aerosol, NO2, and HCHO vertical profiles from MAX-DOAS observations over Thessaloniki, Greece: intercomparison and validation of two inversion algorithms, Atmos. Meas. Tech., 15(5), 1269-1301, 2022.

5. Barnes, P. W., C. E. Williamson, R. M. Lucas, S. A. Robinson, S. Madronich, N. D. Paul, J. F. Bornman, A. F. Bais, B. Sulzberger, S. R. Wilson, A. L. Andrady, R. L. McKenzie, P. J. Neale, A. T. Austin, G. H. Bernhard, K. R. Solomon, R. E. Neale, P. J. Young, M. Norval, L. E. Rhodes, S. Hylander, K. C. Rose, J. Longstreth, P. J. Aucamp, C. L. Ballaré, R. M. Cory, S. D. Flint, F. R. de Gruijl, D.-P. Häder, A. M. Heikkilä, M. A. K. Jansen, K. K. Pandey, T. M. Robson, C. A. Sinclair, S.-Å. Wängberg, R. C. Worrest, S. Yazar, A. R. Young, and R. G. Zepp: Ozone depletion, ultraviolet radiation, climate change and prospects for a sustainable future, *Nature Sustainability*, 2019.
6. Bais, A. F., G. Bernhard, R. L. McKenzie, P. J. Aucamp, P. J. Young, M. Ilyas, P. Jöckel, and M. Deushi: Ozone–climate interactions and effects on solar ultraviolet radiation, *Photochem. Photobiol. Sci.*, 18(3), 602-640, 2019.
7. Drosoglou, T., M. E. Koukouli, N. Kouremeti, A. F. Bais, I. Zyrichidou, D. Balis, R. J. van der A, J. Xu, and A. Li: MAX-DOAS NO2 observations over Guangzhou, China; ground-based and satellite comparisons, *Atmos. Meas. Tech.*, 11(4), 2239-2255, 2018.
8. Drosoglou, T., Bais, A. F., Zyrichidou, I., Kouremeti, N., Poupkou, A., Liora, N., Giannaros, C., Koukouli, M. E., Balis, D., and Melas, D.: Comparisons of ground-based tropospheric NO2 MAX-DOAS measurements to satellite observations with the aid of an air quality model over the Thessaloniki area, Greece, *Atmos. Chem. Phys.*, 17, 5829-5849, DOI:10.5194/acp-17-5829-2017, 2017.
9. Fountoulakis, I., A. F. Bais, K. Fragkos, C. Meleti, K. Tourpali, and M. M. Zempila: Short- and long-term variability of spectral solar UV irradiance at Thessaloniki, Greece: effects of changes in aerosols, total ozone and clouds, Atmos. Chem. Phys., 16(4), 2493-2505, 2016.
10. Fountoulakis, I., Bais, A. F., Tourpali, K., Fragkos, K., and Misios, S.: Projected changes in solar UV radiation in the Arctic and sub-Arctic Ocean: Effects from changes in reflectivity, ice transmittance, clouds, and ozone, Journal of Geophysical Research: Atmospheres, 2014JD021918, 10.1002/2014JD021918, 2014.
11. Bais, A. F., T. Drosoglou, C. Meleti, K. Tourpali, and N. Kouremeti, Changes in surface shortwave solar irradiance from 1993 to 2011 at Thessaloniki (Greece), Int. J. Climatol., DOI: 10.1002/joc.3636, 2013.

Other activities

Participation in about 25 field campaigns related mainly to ozone and solar UV radiation.

Invited lectures (13) at various scientific forums

Participation in the organization of 20 conferences and summer schools, as chair, member of the organizing, program, or technical committees.

Reviewer in more than 14 scientific journals and evaluator of 15 research proposals of the European Commission and National Research Councils of European Countries.

Management Committee member of the EC, COST Action 1207, "A European Brewer Network - EUBREWNET", 2013.

A full list of these activities can be found HERE