

Anna Gialitaki

Applied Physics – Environmental Physics and Meteorology

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Education

PH. D. candidate (ENVIRONMENTAL PHYSICS)

Dec. 2018 – today

Aristotle University of Thessaloniki, Greece

- Laboratory of Atmospheric Physics, Physics Department
- Proposed dissertation title: “Physical, optical and chemical properties of the aerosols with the use of remote sensing techniques and in-situ measurements in background conditions”

MASTER OF SCIENCE (ENVIRONMENTAL PHYSICS AND METEOROLOGY)

Sept. 2016 – Feb. 2018

National and Kapodistrian University of Athens, Greece

- Specialization in Remote Sensing of the atmosphere
- Diploma Thesis: “Characterization of aerosol elevated layers detected during the Pre-TECT campaign”

BACHELOR OF SCIENCE (PHYSICS)

June 2016

National and Kapodistrian University of Athens, Greece

- Specialization in Atmospheric Physics
- Diploma Thesis: “Study of spatial and temporal distribution of NO_x in the Athens Basin using Air Quality Indicators (AQI)”

Professional Experience

Institute for Astronomy, Astrophysics, Space Applications and Remote Sensing (IAASARS), National Observatory of Athens (NOA), Greece

- Atmospheric aerosol characterization in terms of their optical and microphysical properties
- Algorithm development for data processing of atmospheric lidars
- Data analysis of active and passive atmospheric remote sensing sensors
- Main operator of the lidar system Polly^{XT} of PANGEA (PANhellenic GEophysical observatory of Antikythera) that monitors the vertical distribution and concentration of aerosols in the atmosphere
- Implementation of quality assurance procedures established from EARLINET (European Aerosol Research Lidar Network) on the Polly^{XT} lidar system

June 2017 – today

June 2018 – today

- Member of ReACT (Remote sensing of Aerosols Clouds and Trace gases) team

Technical Skills

Software Programs

- Python, Matlab

Scholarships and awards

- Scholarship from Stavros Niarchos Foundation under the EKAD³ project: “Creating in NOA a national center for collection, analysis and dissemination of satellite data for monitoring land, air and sea”, (2017–2018, P.I.: Dr. V. Amiridis, NOA, Role: Master student) Dec. 2017
- “Roland Schlich grant” for participation with an oral presentation, to the European Geosciences Union (EGU) General Assembly 2019 in Vienna, Austria April 2019

Research Projects and Experimental Campaigns

- PANACEA - Panhellenic infrastructure for atmospheric composition and climate change, NSRF Research-Create-Innovate 2014-2020 (2018-2021, P.I. for NOA/IAASARS: Dr. V. Amiridis, NOA, Role: PhD candidate, responsible for the operation, product quality assurance and data analysis/provision of the lidar system Polly^{XT} of ReACT) Jan. 2019 – today
- PANGEA 1st experimental campaign organized in the framework of the ERC Consolidator Grant “D-TECT” (Does dust triboelectrification affect our climate?) (P.I.: Dr. V. Amiridis, NOA, Coordinator: ReACT/IAASARS, Role: study desert dust properties using remote sensing techniques) Aug. – Sep. 2018
- EKAD³ - Creating in NOA a national center for collection, analysis and dissemination of satellite data for monitoring land, air and sea (P.I.: Dr. V. Amiridis, NOA, Role: Master student, data analysis for active/passive remote sensing sensors, aerosol properties characterization) Dec. 2017 – Dec. 2018
- Pre-TECT experimental campaign (Coordinator: NOA/IAASARS, Role: Master student, data analysis for active/passive remote sensing sensors) April 2017
- Participation in field experimental campaign for measurements of momentum, heat and humidity turbulent fluxes over the north-eastern Mediterranean, Karpathos island, Greece (Coordinator: Dr. V. Kostopoulos, Role: Undergraduate student, data analysis) Aug. 2012

Publications

Peer – Reviewed Publications

2020

- **Gialitaki, A.**, Tsekeri, A., Amiridis, V., Ceolato, R., Paulien, L., Kampouri, A., Gkikas, A., Solomos, S., Marinou, E., Haarig, M., Baars, H., Ansmann, A., Lapyonok, T., Lopatin, A., Dubovik, O., Groß, S., Wirth, M., and Balis, D.: Is the near-spherical shape the new black for smoke?, *Atmos. Chem. Phys. Discuss.*, <https://doi.org/10.5194/acp-2020-22>, 2020 (**accepted for publication**)
- Papagiannopoulos, N., D'Amico, G., **Gialitaki, A.**, Ajtai, N., Alados-Arboledas, L., Amodeo, A., Amiridis, V., Baars, H., Balis, D., Binietoglou, I., Comerón, A., Dionisi, D., Falconieri, A., Fréville, P., Kampouri, A., Mattis, I., Mijić, Z., Molero, F., Papayannis, A., Pappalardo, G., Rodríguez-Gómez, A., Solomos, S., and Mona, L.: An EARLINET early warning system for atmospheric aerosol aviation hazards, *Atmos. Chem. Phys.*, 20, 10775–10789, <https://doi.org/10.5194/acp-20-10775-2020>, 2020.
- Daskalopoulou, V., Mallios, S. A., Ulanowski, Z., Hloupis, G., **Gialitaki, A.**, Tassis, K., and Amiridis, V.: The Electrical Activity of Saharan Dust as perceived from Surface Electric Field Observations in Greece, *Atmos. Chem. Phys. Discuss.*, <https://doi.org/10.5194/acp-2020-668>, **in review**, 2020.

2019

- Baars, H., Ansmann, A., Ohneiser, K., Haarig, M., Engelmann, R., Althausen, D., Hanssen, I., Gausa, M., Pietruczuk, A., Szkop, A., Stachlewska, I. S., Wang, D., Reichhardt, J., Skupin, A., Mattis, I., Trickl, T., Vogelmann, H., Navas-Guzmán, F., Haefele, A., Acheson, K., Ruth, A. A., Tatarov, B., Müller, D., Hu, Q., Podvin, T., Goloub, P., Vesselovski, I., Pietras, C., Haeffelin, M., Fréville, P., Sicard, M., Comerón, A., Fernández García, A. J., Molero Menéndez, F., Córdoba-Jabonero, C., Guerrero-Rascado, J. L., Alados-Arboledas, L., Bortoli, D., Costa, M. J., Dionisi, D., Liberti, G. L., Wang, X., Sannino, A., Papagiannopoulos, N., Boselli, A., Mona, L., D'Amico, G., Romano, S., Perrone, M. R., Belegante, L., Nicolae, D., Grigorov, I., **Gialitaki, A.**, Amiridis, V., Soupiona, O., Papayannis, A., Mamouri, R.-E., Nisantzi, A., Heese, B., Hofer, J., Schechner, Y. Y., Wandinger, U., and Pappalardo, G.: The unprecedented 2017–2018 stratospheric smoke event: Decay phase and aerosol properties observed with EARLINET, *Atmos. Chem. Phys. Discuss.*, <https://doi.org/10.5194/acp-2019-615>, in review, 2019.
- Pauly, R. M., Yorks, J. E., Hlavka, D. L., McGill, M. J., Amiridis, V., Palm, S. P., Rodier, S. D., Vaughan, M. A., Selmer, P. A., Kupchock, A. W., Baars, H., and **Gialitaki, A.**: Cloud-Aerosol Transport System (CATS) 1064 nm calibration and validation, *Atmos. Meas. Tech.*, 12, 6241–6258, <https://doi.org/10.5194/amt-12-6241-2019>, 2019.
- Proestakis, E., Amiridis, V., Marinou, E., Binietoglou, I., Ansmann, A., Wandinger, U., Hofer, J., Yorks, J., Nowottnick, E., Makhmudov, A., Papayannis, A., Pietruczuk, A., **Gialitaki, A.**, Apituley, A., Szkop, A., Muñoz Porcar, C., Bortoli, D., Dionisi, D., Althausen, D., Mamali, D., Balis, D., Nicolae, D., Tetoni, E., Liberti, G. L., Baars, H., Mattis, I., Stachlewska, I. S., Voudouri, K. A., Mona, L., Mylonaki, M., Perrone, M. R., Costa, M. J., Sicard, M., Papagiannopoulos, N., Siomos, N., Burlizzi, P., Pauly, R., Engelmann, R., Abdullaev, S., and Pappalardo, G.: EARLINET evaluation of the CATS Level 2 aerosol backscatter coefficient product, *Atmos. Chem. Phys.*, 19, 11743–11764, <https://doi.org/10.5194/acp-19-11743-2019>, 2019.

- Solomos S., **Gialitaki A.**, Marinou E., Proestakis E., Amiridis V., Baars H., Komppula M., and Ansmann A.: Modeling and remote sensing of an indirect Pyro-Cb formation and biomass transport from Portugal wildfires towards Europe, *Atmospheric Environment*, Volume 206, 2019, Pages 303-315, ISSN 1352-2310, <https://doi.org/10.1016/j.atmosenv.2019.03.009>

2018

- Proestakis E., Amiridis V., Kottas M., Marinou E., Biniotoglou I., Ansmann A., Wandinger U., Yorks J., Nowottnick E., Makhmudov A., Papayannis A., Pietruczuk A., **Gialitaki A.**, Apituley A., Muñoz-Porcar C., Bortoli D., Dionisi D., Althausen D., Mamali D., Balis D., Nicolae D., Tetoni E., Liberti G. L., Baars H., Stachlewska I. S., Voudouri K. A. , Mona L. , Mylonaki M., Perrone M. R., Costa M. J., Sicard M., Papagiannopoulos N., Siomos N., Burlizzi P., Engelmann R., Abdullaev S. F., Hofer J., Pappalardo G.: Earlinet validation of CATS L2 product, *EPJ Web Conf.* 176 02005 (2018), DOI: 10.1051/epjconf/201817602005

Conference Proceedings

2019

- Amiridis, V., Tsekeri, A., Marinou, E., Proestakis, E., Gkikas, A., **Gialitaki, A.**, Daskalopoulou, V., Paschou, P., Siomos, N., Biniotoglou, I., Gasteiger, J., Freudenthaler, V., Mamouri, R. E., Ansmann, A., Mona, L.: Advancing the remote sensing of desert dust, *Proceedings of SPIE, Volume 11152, Remote Sensing of Clouds and the Atmosphere XXIV* , <https://doi.org/10.1117/12.2530322>, Strasbourg, France, 2019
- **Gialitaki A.**, Tsekeri A., Amiridis V., Ceolato R., Paulien L., Proestakis E., Marinou E., Haarig M., Baars H., Balis D.: Is the near – spherical the “new black” for smoke?, 29th International Laser Radar Conference (ILRC), Hefei, Anhui, China, June 2019, <https://doi.org/10.1051/epjconf/202023702017>
- Ceolato R., Paulien L., Gaudfrin F., Fossard F., **Gialitaki A.**, Tsekeri A., Amiridis V., On the accuracy of equivalent – spherical models for backscattering of black carbon particles, 29th International Laser Radar Conference (ILRC), Hefei, Anhui, China, June 2019
- Voudouri K. A., Giannakaki E., Komppula M., Tsekeri A., **Gialitaki A.**, Natsis A., Balis D.: Monitoring ice crystal clouds: investigation of the lidar depolarization ratios, 29th International Laser Radar Conference (ILRC), Hefei, Anhui, China, June 2019
- Paschou P., Proestakis P., Tsekeri A., Siomos N., Gkikas A., **Gialitaki A.**, Marinou E., Biniotoglou I., Meleti C., Freudenthaler V., Georgoussis G., Doxastakis G., Von Bismarck J., Amiridis V.: The ESA-EVE polarization lidar for assessing the Aeolus aerosol product performance, 29th International Laser Radar Conference (ILRC), Hefei, Anhui, China, June 2019
- **Gialitaki A.**, Tsekeri A., Amiridis V., Marinou E., Haarig M., Baars H., Ansmann A.: Interpreting the Particle Linear Depolarization Ratio spectral dependence of aged stratospheric smoke using T-matrix simulations, *Geophysical Research Abstracts Vol. 21, EGU2019-1678*, 2019 EGU General Assembly 2019
- Daskalopoulou V., Mallios S.A., Ulanowski J., Hloupis G., **Gialitaki A.**, Amiridis V., Monitoring of Saharan dust electrification using a ground-based electrometer in Crete & Antikythera, *Geophysical Research Abstracts Vol. 21, EGU2019-1417*, 2019 EGU General Assembly 2019

2018

- **Gialitaki A.**, Tsekeri A., Amiridis V., Marinou E., Giannakaki E., Solomos S., Ceolato R., Tetoni E., Kottas M., Proestakis E., Engelmann R., Baars H.: Should we consider the non-sphericity of smoke particles for radiative transfer?, 14th International Conference on Meteorology, Climatology and Atmospheric Physics (COMECAP), Alexandroupolis, Greece, October 15-17, 2018
- Tetoni E., Amiridis V., Giannakaki E., Marinou E., Kottas M., **Gialitaki A.**, Proestakis E., Solomos S., Georgoulas A., Stachlewska I., Baars H., Engelmann R., Hofer J.: EARLINET validation of CALIPSO v4 product and comparisons with v3, 14th International Conference on Meteorology, Climatology and Atmospheric Physics (COMECAP), Alexandroupolis, Greece, October 15-17, 2018

2017

- Holger Baars and the EARLINET consortium: Tropospheric and stratospheric smoke over Europe as observed within EARLINET in summer 2017, European Geosciences Union, General Assembly 2018, Vienna, 8-13 April 2018

Conference Presentations

2020

- **Gialitaki A.**, Tsekeri, A., Marinou, E., Paschou, P., Tsihla, M., Kampouri, A., Tsikoudi, I., Balis, D., and Amiridis, V.: Properties of biomass burning particles as observed in PANGAEA observatory, Second scientific conference PANACEA (virtual)
- Marinou, E., **Gialitaki A.**, Tsihla, M., Tsikoudi, I., Paschou, P., Siomos, N., Drakaki, E., Kampouri, A., and Amiridis, V.: Observations of aerosol load in PANGAEA during COVID-19 lock-down and relaxation period, Second scientific conference PANACEA (virtual)
- Gkikas, A., **Gialitaki A.**, Binietoglou, I., Proestakis, E., Paschou, P., Siomos, N., Kampouri, A., Kosmopoulos, P., Marinou, E., Voudouri, K., Mylonaki, M., Balis, D., Papayannis, A., and Amiridis, V.: First assessment of AEOLUS L2A products in the framework of PANACEA: Cal/Val aspects and evaluation results, Second scientific conference PANACEA (virtual)
- Kampouri, A., Amiridis, V., Solomos, S., Spyrou, C., **Gialitaki A.**, Papagiannopoulos, N., Mona, L., Georgoulas, A. K., Akritidis, D., and Zanis, P.: Investigation of volcanic emissions in the Mediterranean: “The EtnaAntikythera connection”, Second scientific conference PANACEA (virtual)
- Paschou, P., Siomos, N., Tsekeri, A., Gkikas, A., Marinou, E., **Gialitaki A.**, Meleti, C., and Amiridis, V.: EVE lidar: The passport of EARLINET lidar systems towards Aeolus Cal/Val studies, Second scientific conference PANACEA (virtual)
- Tsikoudi, I., Marinou, E., **Gialitaki A.**, Tsihla, M., Paschou, P., Giannakaki, E., Flocas, H., Vakkari, V., Komppula, M., and Amiridis, V.: Planetary Boundary Layer Height retrievals using Polly-XT Lidar water vapor acquisitions, Second scientific conference PANACEA (virtual)
- Konsta, D., Tsekeri, A., Solomos, S., Siomos, N., **Gialitaki A.**, Tetoni, E., Amiridis, V., and Nastos, P.: The potential of a synergistic lidar and sunphotometer retrievals for aerosol model evaluation, Second scientific conference PANACEA (virtual)

- Daskalopoulou, V., Mallios, S., Ulanowski, Z., Hloupis, G., **Gialitaki, A.**, Tassis, K., and Amiridis, V.: Electrified Saharan Dust: Does it reach Greece? An overview of the electrical activity of Saharan dust inferred from surface electric field observations, Second scientific conference PANACEA (virtual)
- Voudouri, K. A., Marinou, E., **Gialitaki, A.**, Amiridis, V., Tsihla, M., Tsikoudi, I., Siomos, N., Balis, D.: Aerosol Typing in the Eastern Mediterranean during Pre-TECT campaign over Finokalia, Crete, ELC conference, Granada, Spain (virtual)
- Tsihla, M., **Gialitaki, A.**, Marinou, E., Tsekeri, A., Tsikoudi, I., Amiridis, V., Kalivitis, N., Mihalopoulos, N.: Utilizing active remote sensing to characterize marine aerosol properties in the Eastern Mediterranean, ELC conference, Granada, Spain (virtual)
- Tsikoudi, I., **Gialitaki, A.**, Marinou, E., Tsihla, M., Drakaki, E., Kampouri, A., Vakkari, V., Komppula, M., Giannakaki, E., Amiridis, V., Flocas, H.: Planetary Boundary Layer Height during the Pre-TECT campaign using remote sensing observational datasets and WRF model, ELC conference, Granada, Spain (virtual)
- Siomos, N., Bais, A., Balis, D., **Gialitaki, A.**, Koukouli, M. E., Natsis, A., Voudouri, K. A., Amiridis, V. and Michailidis, K.: Investigating the Radiative Effects of a Persistent Stratospheric Aerosol Layer Observed over Thessaloniki, Greece, during 2019, submitted to International Radiation Symposium 2020, Thessaloniki, Greece, 6-10 July 2020

2019

- **Gialitaki, A.**, Tsekeri, A., Amiridis, V., Ceolato, R., Paulien, L., Kampouri, A., Gkikas, A., Solomos, S., Marinou, E., Haarig, M., Baars, H., Ansmann, A., Lapyonok, T., Lopatin, A., Dubovic, O., Groß, S. and Balis D.: Let's discuss on a new aerosol shape, ACTRIS Remote Sensing Workshop, Rome, Italy, 18-22 November 2019
- Paschou, P., Proestakis, E., Tsekeri, A., Siomos, N., Gkikas, A., **Gialitaki, A.**, Marinou, E., Binietoglou, I., Meleti, C., Freudenthaler, V., Georgoussis, G., Doxastakis, G., Louridas, A., Von Bismarck, J. and Amiridis, V.: The ESA-EVE polarization lidar for AEOLUS Cal/Val activity in ASKOS campaign, ACTRIS Remote Sensing Workshop, Rome, Italy, 18-22 November 2019
- Tsihla, M., Tsikoudi, I., **Gialitaki, A.**, Marinou, E., and Amiridis, V.: Two methodologies for lidar-based marine characterization in the near range, ACTRIS Remote Sensing Workshop, Rome, Italy, 18-22 November 2019
- Papagiannopoulos N., D' Amico G., Amiridis V., Binietoglou I., Falconieri A., **Gialitaki A.**, Kampouri A., Mattis I., Solomos S. and Mona L.: On the near-real-time monitoring of airborne hazards: applications and discussion, ACTRIS Remote Sensing Workshop, Rome, Italy, 18-22 November 2019
- Tsikoudi, I., Tsihla, M., Kampouri, A., **Gialitaki, A.**, Marinou, E., Solomos, S. and Amiridis, V.: Aerosol properties during two experimental campaigns in Eastern Mediterranean, ACTRIS Remote Sensing Workshop, Rome, Italy, 18-22 November 2019
- Varlas, G., Marinou, E., Tsekeri, A., **Gialitaki, A.**, Tsarpalis, K., Spyrou, C., Solomos, S., Papadopoulos, A., Amiridis, V., Vervatis, V., and Katsafados, P.: Implementation and evaluation of a wavedependent sea spray parameterization scheme in modeling system CHAOS, First scientific conference PANACEA, Heraklion, Greece, 23 – 24 September 2019
- Tsihla, M., Tsikoudi, I., **Gialitaki, A.**, Marinou, E., and Amiridis, V.: A new methodology for lidar-based characterization of marine particles, First scientific conference PANACEA, Heraklion, Greece, 23 – 24 September 2019

- Tsikoudi, I., Tsihla, M., Kampouri, A., **Gialitaki, A.**, Marinou, E., Solomos, S. and Amiridis, V.: Aerosol properties at Antikythera and Finokalia during two experimental campaigns, First scientific conference PANACEA, Heraklion, Greece, 23 – 24 September 2019
- Paschou P., Proestakis E., Tsekeri A., Siomos N., Gkikas A., **Gialitaki A.**, Marinou E., Binietoglou I., Meleti C., Freudenthaler V., Georgoussis G., Doxastakis G., Louridas A., Von Bismarck J. and Amiridis V.: The ESA-EVE polarization lidar for assessing the Aeolus aerosol product performance, First scientific conference PANACEA, Heraklion, Greece, 23 – 24 September 2019
- Gkikas A., Proestakis E., **Gialitaki A.**, Paschou P., Marinou E., Tsekeri A., Solomos S. and Amiridis V.: First assessment of AEOLUS aerosol products versus groundbased lidar measurements obtained at Antikythera island, First scientific conference PANACEA, Heraklion, Greece, 23 – 24 September 2019
- **Gialitaki A.**, Tsekeri A., Amiridis V., Ceolato R., Paulien L., Proestakis E., Marinou E., Haarig M., Baars H., Balis D.: Properties of stratospheric smoke measured over Europe, Final ACTRIS-2 General Meeting 2019, Darmstadt, Germany

2018

- **Gialitaki A.**, Tsekeri A., Amiridis V., Samaras S., Marinou E., Haarig M., Baars H., Tetoni E., Ansmann A.: Microphysical characterization of smoke from Canadian fires (Let's discuss on a new aerosol shape), Final ACTRIS-2 WP2 Technical meeting, 2018, University of Hertfordshire (UH), Hatfield, UK
- **Gialitaki A.**, Tsekeri A., Amiridis V., Giannakaki E., Solomos S., Marinou E., Tetoni E., Kottas M., Interpreting the observed Particle Linear Depolarization Ratio spectral dependence of aged smoke using T-matrix simulations, 1st European Lidar Conference (ELC), Thessaloniki, Greece, July 2018
- Tetoni E., Amiridis V., Giannakaki E., Marinou E., Kottas M., Proestakis E., Solomos S., **Gialitaki A.**, Georgoulas A., Stachlewska I., Baars H., Engelmann R., Hofer J.: Improvements on CALIPSO v4.10 aerosol product according to EARLINET, 1st European Lidar Conference (ELC), Thessaloniki, Greece, July 2018
- Giannakaki E., Tetoni E., **Gialitaki A.**, Kottas M., Voudouri K. A., Amiridis V., The effect of multiple scattering on aerosol and cloud properties measured during Pre-TECT campaign over Finokalia, Crete, 1st European Lidar Conference (ELC), Thessaloniki, Greece, July 2018
- Amiridis V., Marinou E., Tsekeri A., Kottas M., Proestakis E., Tetoni E., **Gialitaki A.**, Daskalopoulou V., Solomos S., Gkikas A., Konsta D.: The PreTECT Campaign-Revealing the secrets of desert dust, 1st European Lidar Conference (ELC), Thessaloniki, Greece, July 2018

2017

- **Gialitaki A.**, Solomos S., Marinou E., Proestakis E., Giannakaki E., Veselovskii I., Baars H., Engelmann R., Kottas M., Tetoni E., Amiridis V.: Transported smoke from the Portugal PyroCb observed with the PollyXT over Finokalia, 3rd ACTRIS-2 WP2 Workshop 2017, Delft, The Netherlands, 13-17 November 2017

Teaching Experience

- 2-year experience in teaching physics, chemistry and mathematics up to secondary level students