CURRICULUM VITAE

Panagiotis N. Kokkalis

PERSONAL INFORMATION:

Date and place of Birth:	5 December, 1981, Greece
Gender:	Male
Marital status:	Single
Citizenship:	Hellenic

CONTACT INFORMATION:

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Summary of Research Interests and Achievements

Panagiotis Kokkalis (PK) was born in Greece, in 1981. He received his B.Sc. and M.Sc. in School of Applied Mathematics and Physical Sciences (field of optoelectronics and laser) and his Ph.D. in Atmospheric Physics from the National Technical University of Athens (NTUA), Greece in 2007, 2009 and 2014, respectively. As an undergraduate and graduate research assistant at NTUA he has been working in the field of ground based and space borne active and passive remote sensing techniques. His Ph.D. thesis was mainly focused on the upgrade/optimization of NTUA's Raman lidar, as well as on the atmospheric aerosol characterization (optical and microphysical properties) through the synergy of Raman/depolarization lidar and sunphotometric measurements. During the implementation of his Ph.D., he worked for 3 months (2009), at the Ludwig Maximilians University for the development of a software tool for lidar optimization in near field, based on paraxial approximation.

For the time period 2009-2014, he was responsible for the maintenance, operation and data processing of the EARLINET multi-wavelength lidar station of NTUA and the Atmospheric Remote Sensing Station (ARSS) of National Observatory of Athens (NOA) in Greece (NASA's AERONET site). During 2010-2011 he was awarded with a Networking / Partnering Initiative (NPI) program from European Space Agency (ESA-ESTEC). After his Ph.D. and for the time period 2014-2017 he worked as a postdoctoral researcher at National Observatory of Athens (NOA-ISSARS) in the framework of ESA's MULTIPLY project, for the development of the first European HSRL airborne facility. In October 2017, he moved to Kuwait University as Assistant Professor and he joined the Remote Sensing Group in the Department of Physics.

He is mainly interested in lidar active remote sensing technique (wind, backscatter, Raman and depolarization) for ground based operation. Among his interests, is system optimization and performance through optical design and ray tracing simulations (Zemax optical design code). In addition, he is also interested in software development (development of user friendly executables-GUIs), for the retrieval of higher level products from raw lidar signals. His computer skills include a very good knowledge of programming languages (Matlab, Zemax, Lascad, Mathematica, ITT IDL, LabVIEW, C, Java, Python, etc.).

He has participated in 14 research projects and in 14 experimental campaigns (11 European and 3 National). He has 27 publications in peer-reviewed scientific journals and more than 40 publications in conference proceedings, various scientific and technical reports and has participated in 11 international conferences. Moreover, from 2009 up to now, he worked as education assistant in remote sensing, guiding also more than 10 B.Sc - M.Sc. students and 2 Ph.D. candidates. He was a member of the conference organization committee of the 26th International Laser Radar Conference (2012), and co-editor of the proceedings. PK has been an active reviewer in 6 scientific Journals.

EDUCATION

National Technical University of Athens (NTUA) 2009-2014

- School of Applied Mathematics and Physical Sciences,
  Dept. of Physics, Laser Remote Sensing Laboratory, Ph.D. in Atmospheric Physics

  PhD Thesis: "Study of tropospheric aerosols using ground-based and space borne techniques – Data processing and statistical analysis"

National Technical University of Athens (NTUA) 2007-2009

- School of Applied Mathematics and Physical Sciences,
  Master of Science in *Physics and Technical Applications*, (M.Sc.) (GPA 7.67/10.0).

  M.Sc. Thesis: "Study of the aerosol optical depth over Athens as retrieved from ground based and satellite measurements"
  Supervisor: Assoc. Prof. Dr. Alexandros Papayannis.

National Technical University of Athens (NTUA) 2000-2007

- Bachelor of Science Degree (B.Sc.) School of Applied Mathematics and Physical Sciences, Major in Applied Physics (GPA 6.76/10.0)

COMPUTATIONAL SKILLS

- **Programming Languages:** Matlab, Mathematica, ITT IDL, LabVIEW, C, Java, Python
- **Operating Systems:** Windows, Linux.
- **Specialized software:** ZEMAX, LASCAD

FOREIGN LANGUAGES

Greek: Native
English: Cambridge FCE – December 1996
Spanish: Initial level

RESEARCH INTERESTS / EXPERIENCE

- Backscatter/Raman/depolarization lidar system development (hardware)
- Optical design (ray tracing) for lidar optimization
- Development of methodologies for the optimization of the overlap effect on lidar technique
- Software development for the retrieval of higher level products from raw lidar signals
- Application of inversion algorithms for the retrieval of microphysical aerosol properties
- Synergetic use of ground-based and space-borne active and passive remote sensing techniques for aerosol characterization
- Validation of aerosol-related satellite products using collocated ground-based measurements

TEACHING EXPERIENCE

- PHYS 102: General Physics II (Electrodynamics) — Spring Semester 2017-2018
  Textbook: University Physics with Modern Physics, 14th Edition, Hugh D. Young, Roger A. Freedman, University of California, Santa Barbara, 2016
- PHYS 475: Visible and IR Remote Sensing — Spring Semester 2017-2018
  Textbook: Microwave Radar and Radiometric Remote Sensing Fawwaz Ulaby and David Long, The University of Michigan press, 2014
- PHYS 479: Radar Image and Signal Processing — Spring Semester 2017-2018
  Textbook: Microwave Radar and Radiometric Remote Sensing Fawwaz Ulaby and David Long, The University of Michigan press, 2014
- PHYS 476: Microwave Remote Sensing — Fall Semester 2017-2018
  Textbook: Microwave Radar and Radiometric Remote Sensing Fawwaz Ulaby and David Long, The University of Michigan press, 2014
- PHYS 479: Radar Images and Signal Processing — Fall Semester 2017-2018
  Textbook: Microwave Radar and Radiometric Remote Sensing Fawwaz Ulaby and David Long, The University of Michigan press, 2014

Teaching Assistant:

- Air pollutants and Particulate Matter, M.Sc. In Environment and Health. Capacity building for decision making, Medical School of UoA & NTUA — 2015-2016
- Fundamental of Remote Sensing, M.Sc. in Space Science Technologies and Applications, NOA & UoP — 2015-2016
- Optoelectronics and Lasers, B.Sc. in School of Applied Mathematics and Physical Science, NTUA — 2009-2012
- Atmospheric Physics, B.Sc. in School of Applied Mathematics and Physical Science, NTUA — 2009-2012

Supervising and Guidance:

B.Sc. diplomas (10), M.Sc. Thesis (6), Ph.D. thesis (2) at NTUA, NOA and KU — 2009-current

PROFESSIONAL ACTIVITIES

Reviewer in International Scientific Journal

- Atmospheric Chemistry and Physics – ACP *[IF 5.318]*
- Atmospheric Measurement Techniques – AMT *[IF 3.089]*
- Atmospheric Environment *[IF 3.629]*
- Tellus B-Chemical and Physical Meteorology *[IF 2.854]*
- International Journal of Quantitative Spectroscopy and Radiative Transfer *[IF 2.419]*
- International Journal of Remote Sensing *[IF 1.724]*

Member of Conference Organization Committees

- 26th International Laser Radar Conference, 25-29 June 2012, Porto Heli, Greece (http://ilrc26-2012.gr/mdlcms/index.php?option=118&client=1&langid=2)

PARTICIPATION IN FIELD CAMPAIGNS

- *THERMOPOLIS* (ESA)
  During summer of 2009, the *THERMOPOLIS* campaign was performed in Athens Greece, for the study of the *UHI's* (*Urban Heat Island*) phenomenon in Athens. My participation on this campaign was focused on the operation of various sun photometers and meteorological sensors across the city as well as the operation of NTUA's Raman lidar system (EOLE system).

Atmospheric data collected during the campaign have been used for atmospheric corrections needed for UHI retrievals.

- *CarbonExp* (ESA)
  The Carbon Experiment (*CarbonExp*) took place in Crete, Greece, during August-September 2011. The FAAM aircraft of UK MetOffice supplied with the suitable scientific instrumentation was used for sampling aerosol characteristics below the flight path of GOSAT satellite (Greenhouse Gases Observing Satellite, ESA/JAXA). The primary aim was to further optimize scattering corrections on GOSAT retrievals through the retrieved aerosol information. My participation on this campaign was focused on the operation of various sun photometers and meteorological sensors across the city as well as the operation of NTUA's Raman lidar system (EOLE system).

- *Aegean Game* (EUFAR)
  The primary aim of Aegean GAME campaign was the evaluation of atmospheric chemical models in the Aegean sea, against measurements collected during the experiment. . My participation on this campaign was focused on the operation of EMORAL Raman lidar system in Crete.

- *ACEMED* (EUFAR)
  ACEMED objective was the evaluation of CALIPSO's aerosol classification scheme over Eastern Mediterranean. For this purpose, the FAAM aircraft was utilized along with ground-based measurements in Greece during CALIPSO overpasses. My participation on this campaign was focused on the operation of EMORAL Raman lidar system in Crete.

  CarbonExp, Aegean Game and ACEMED, were a cluster of three different campaigns that took place at the same time in the island of Crete Greece. During this time period I was the main lidar operator and responsible for the retrieval of qualitative aerosol profiles (backscatter coefficient at 355 and 532nm, extinction coefficient at 355nm and linear particle and volume depolarization at 355nm) obtained by the Esa's MObile RAman Lidar (EMORAL system). In addition, my duties were also extended in the operation and the data processing of sunphotometers

- *PEGASOS*
  The main focus of the Pan European Gas Aerosol Climate Interaction Study (PEGASOS), was the study of the oxidizing capacity as well as the aerosol vertical distribution in the atmosphere.

- *CHARMEX*
  The objectives of CHARMEX campaign was: the study of pollution transported south of Marseille, the study of recirculation east of Barcelona and the assimilation of lidar data from different EARLINET stations.

  In both PEGASOS and CHARMEX campaigns the NTUA's Raman lidar (EOLE system) and depolarization lidar (AIAS system), were continuously operating as official stations of EARLINET network.

- *Argon (NOA)*
  Aerosol and TRace Gases Observational Campaign at Navarino (ARGON), took place in Messinia Greece, during June-July 2012, in order to study the impact of advection routes on atmospheric composition and processes at the South Western part of Greece. My responsibilities concerned the operation and the data processing of the depolarization lidar (AIAS system) providing vertical aerosol profiles at 532 nm (backscatter coefficient, linear particle and volume depolarization ratios).

- *MEGAMEX (NTUA) and TAMEX (NTUA)*

MEGAMEX and TAMEX were two campaigns in two different regions in Greece and both had a common scope: the study of the aerosol load correlatively with incidents of emergency respiratory infections, recorded by hospitals, in highly industrialized cities. During these campaigns I was responsible for the installation/maintenance and data processing for the entire instrumentation (scanning lidar, sun photometers, meteorological sensors, PM counters).

- *HYFLEX (ESA)*
  HYperspectral FLuorescense EXperiment (HYFLEX) was initialized by ESA in collaboration with Jülich Forschungszentrum in order to produce a sensor, for future satellite launch, dedicated to monitor the photosynthetic activity of the terrestrial vegetation layer. The campaign took place in the forests of Czech Republic and the fields of Germany during August-September of 2012. My mission was the operation of the EMORAL lidar system and the provision of qualitative aerosol profiles (backscatter at 532 and 355nm, extinction at 355nm, linear particle and volume depolarization profiles at 355nm), for the appropriate atmospheric corrections needed by the vegetation-related operational algorithm.

- *AQUA-GRO (NTUA)*
  Main objective of this experiment was the air quality assessment and study of transport processes along the axis Athens-Aegean Sea (Greece) and Bucharest (Romania) using lidar techniques (September-November 2012). For the needs of this campaign I was responsible for the operation and the data processing of the depolarization lidar (AIAS system; backscatter at 532nm, linear particle and volume depolarization ratios at 532nm) and the NTUA's Raman lidar (EOLE system; backscatter and extinction profiles at 355 and 532nm, water vapor).

- *Sen2Exp (ESA)*
  Sen2Exp was initiated by ESA to support geophysical algorithm development, validation and the simulation of future Sentinel-2 biophysical products. The campaign took place during June 2013 and my deliverables were the qualitatively assured aerosol profiles (backscatter at 532 and 355nm, extinction at 355nm, linear particle and volume depolarization ratios at 355nm) obtained by the operation of EMORAL system in Mulhouse France.

- *HygrA (*ITaRS, Marie Curie Initial Training Network*)*
  The HygrA-CD (From Hygroscopic Aerosols to Cloud Droplets) campaign was an international field campaign bringing together different instruments and expertise, for the purpose of understanding more about the impact of aerosols and clouds on weather and climate. The idea of this experiment was initiated by the National Technical University of Athens under the framework of ITaRS, a Marie Curie Initial Training Network in the field of Atmospheric Remote Sensing and it was further supported by the ITaRS partners, University of Cologne, UPC Barcelona, and INOE 2000.

- *CHARADMexp (*ESA*)*
  The CHARADMExp campaign aimed to derive optical, microphysical and chemical properties of marine component and its mixture with dust, employing sophisticated instrumentation installed on an appropriate site. Specifically, aerosol characterization could be established by ground-based active/passive remote sensing techniques, surface in-situ measurements and airborne UAV observations. The campaign took place during June-July 2014 at Finokalia site, Creta Greece, and my deliverables are the qualitatively assured aerosol profiles.

RESEARCH EXPERIENCE

- Main responsible for the maintenance, operation and data processing of the NTUA multi-wavelength Raman lidar EOLE (2007-2014)
- Main responsible for the maintenance, operation and data processing of the NTUA depolarization lidar AIAS (2009-2013)
- Responsible for the maintenance, operation and data processing of the ESA's mobile depolarization Raman lidar EMORAL, from 2010 up to now
- Main responsible for the maintenance and operation of ATHENS_NOA sunphotometric station (part of the NASA's Global Aerosol Robotic Network - http://aeronet.gsfc.nasa.gov) (2008-2013)

ACADEMIC AWARDS AND FELLOWSHIPS

- Greek State Scholarship Foundation (IKY), Scholarship for Postdoctoral Studies, Ministry of Education-Research and Religious Affairs, Hellenic Republic (25k €, 2017-2019).
- "HRAKLEITOS II", Scholarship for Doctoral Studies, Ministry of Education-Research and Religious Affairs, Hellenic Republic (45k €, 2011-2014).
- Scholarship for basic research obtained from the European Space Agency (ESA), in the framework of ESA's Networking, Partnering Initiative (NPI), European Space Research and Technology Center (ESTEC), Optoelectronics Department, The Netherlands, (20k€, 2010-2011)
- "Thomaidio" Award (x4). Internal awards of National Technical University of Athens, for publishing papers in highly ranked international scientific journals (2k€, 2009-2014).

COLLABORATIONS

- European Space Agency / ESTEC, Noordwjik, Netherlands (http://www.esa.int/esaCP/index.html), collaboration with Dr. Georgios Tzeremes (georgios.tzeremes@esa.int) and Dr. Dirk Schuettenmeyer (Dirk.Schuettemeyer@esa.int).

  My collaboration with ESA is based on my participation in various field campaigns, initiated by the Agency. During 2010-2011, I was involved as main researcher to the project entitled "Synergetic Atmospheric aerosol measurements", under ESA's Networking / Partnering Initiative (NPI) support program. The deliverables of this project were:
  - Systematic operation of ESA's MObile RAman Lidar (EMORAL)
  - Vertical profiles of aerosol optical properties (backscatter at 532 and 355nm, extinction at 355nm, linear particle and volume depolarization ratios at 355nm) at different conditions concerning aerosol load and type
  - Statistical analysis of ground based and space borne atmospheric products of passive remote sensing technique, at selected geolocations
  - Software package (GUI) for data processing of EMORAL's signals
  - Software package (GUI) for lidar signal simulation at different aerosol conditions

- Raymetrics S.A., Athens Greece (http://www.raymetrics.gr/), collaboration with Dr. Georgios Georoussis (georgoussis@raymetrics.gr).

  During the course of my Ph.D. a strong collaboration was established with Raymetrics S.A., concerning hardware and software implementation. Specifically, my interaction with Raymetrics S.A. concerned:
  - The collaboration for the optimization and upgrade of NTUA's Raman lidar (EOLE system)

- The collaboration for the development of the NTUA's depolarization lidar (AIAS system)
- The development of a software package (GUI) for the retrievals of vertical profiles of linear particle and volume depolarization ratios, from AIAS lidar signals.
- The development of a software package (GUI) for the retrievals of vertical profiles of temperature in the upper atmosphere (> 7km), obtained by a Raman lidar. Application in lidar system operating in India.

- Ludwig Maximilians University, Munich, Germany (http://www.en.uni-muenchen.de/index.html), collaboration with Dr. Volker Freudenthaler (volker.freudenthaler@meteo.physik.uni-muenchen.de).

  On September of 2009 I visited Ludwig Maximilians University, for 3 months. During my presence there, a software tool was developed for max/min optimization of lidar systems based on paraxial approximation. This tool has been provided to all the members of EARLINET network. In parallel, I followed lectures on real ray tracing concerning optical systems in general and more specifically lidars, through the professional opto-mechanical software Zemax.

- Russian Academy of Science, Troitsk, Russia (www.optosystems.ru), collaboration with Dr. Igor Veselovskii (igorv@mail.pic.troitsk.ru).

  One week of training on an inversion algorithm, developed by the Russian institute for obtaining aerosol microphysical properties from optical properties (3 backscatter + 2 extinction + 1 particle depolarization ratio) retrieved by advanced lidar systems (Raman and depolarization lidars).

- National Observatory of Athens, Greece (http://www.noa.gr/), collaboration with Dr. Vassilis Amiridis (vamoir@noa.gr)

  Through the whole period of my studies and research, my collaboration with different institutes of National Observatory of Athens (NOA), lead me to participate as a co-author in more than five publications in peer reviewed journals. Those were the outcome of several field campaigns and time series analysis of sunphotometric measurements.

PARTICIPATION IN GROUND-BASED NETWORKS

- Member of the European Aerosol Lidar Network (EARLINET; http://www.earlinet.org/)
- Member of the Aerosols, Clouds, and Trace gases Research InfraStructure European Network (ACTRIS; http://actris2.nilu.no/)
- Member of European Facility for Airborne Research (EUFAR; http://www.eufar.net/)

PARTICIPATION IN RESEARCH PROJECTS

1) Research associate at the European Space Agency (ESA) Project, entitled: "ESA-CALIPSO: EARLINET's spaceborne-lidar-related activity during the CALIPSO mission" (2007-2009).

2) Research associate at National Technical University of Athens (NTUA) in the framework of the European Space Agency (ESA) Project, entitled: "ESA-ALADIN: EARLINET's spaceborne-lidar-related activity during the ALADIN mission" (2009-2010).

3) Researcher at the National Technical University of Athens (NTUA) in the Operational Project entitled: "TAMEX, Tamyneon Experiment-Air pollution monitoring in an industrial site by in-situ and lidar measuring techniques" (2008).

4) Researcher at the National Technical University of Athens (NTUA) in the Operational Project entitled: "MEGAMEX, Megalopolis Experiment-Air pollution monitoring in an industrial site by in-situ measuring techniques" (2009).

5) Research associate at the National Observatory of Athens (NOA) in the framework of European Field Campaign (ESA), entitled: "THERMOPOLIS" (Contract: RFQ/3-12741/09/I-EC) (2009-2010).

6) Researcher at the NTUA in the framework of HERAKLEITOS II Greek Project entitled: "Study of tropospheric aerosols using ground-based and spaceborne techniques – Data processing and statistical analysis" (2010-2013)

7) Researcher under the ESA's Networking / Partnering Initiative (NPI) support, to the project entitled: "Synergetic Atmospheric aerosol measurements" (Contract: 4200022921/10/NL/PA) (2010-2011).

8) Researcher at the NTUA in the framework of the Greek-Romania R&D Cooperation, GSRT funded project, entitled: "Air quality assessment and study of transport processes along the axis Athens-Aegean Sea (Greece) and Bucharest (Romania) using lidar techniques" (2012-2014)

9) Research associate at National Technical University of Athens (NTUA) in the framework of ESA's Project, entitled: "Q-Switched Master Oscillator based on Multidoping Nd:YAG Technology for Optoelectronics Space Applications – QOMA" (2011-2013).

10) Research associate at NOA in the framework of ESA's project entitled "Lidar Climatology of Vertical Aerosol Structure for Space-Based Lidar Simulation Studies-LIVAS" Contract No: 4000104104/11/NL/FF/fu) (2011-2013).

11) Research associate at NTUA in the framework of the European project FP7-INFRASTRUCTURE ITN, entitled: "ACTRIS: Aerosols, Clouds, and Trace gases Research InfraStructure Network" (2011-2015).

12) Research associate at the Navarino Environmental Observatory (NEO) project campaign entitled: "ARGON: AeRosol and trace Gases Observational campaign at Navarino" (06 June-13 July 2012).

13) Research associate at NTUA in the framework of the project campaign entitled: "ChArMEx (The Chemistry-Aerosol Mediterranean Experiment)" (2008-2012)

14) Research associate at NTUA in the framework of the European project entitled: "PEGASOS (Pan-European Gas-AeroSOls climate interaction Study)" (2012).

PARTICIPATION IN SCIENTIFIC CONFERENCES

- 1st International Conference: From Deserts to Monsoons, Crete, Greece, 1-6 June 2008.
- European Aerosol Conference, Thessaloniki, Greece, 24-29 August 2008.
- SPIE Europe Remote Sensing, Berlin, Germany, 31 August – 3 September 2009.
- 8th International Symposium on Tropospheric Profiling, Delft, Netherlands, 19-23 October, 2009.
- International Aerosol Conference, Helsinki, Finland, 29 August – 3 September, 2010.
- European Geosciences Union, Vienna, Austria, 2-7 May 2010.
- 25th International Laser Radar Conference, St. Petersburg, Russia, 5-9 July, 2010.
- VI Workshop on Lidar measurements in Latin America, La Paz, Bolivia, September 26 to October 1, 2011
- 26th International Laser Radar Conference, Porto Heli, Greece, 25-29 June, 2012.
- European Geosciences Union, Vienna, Austria, 7-12 April 2013.

LIST OF PUBLICATIONS

PUBLICATIONS IN PEER-REVIEWED JOURNALS

1. Amiridis, V., Kafatos, M., Perez, M., Kazadzis, S., Gerasopoulos, E., Mamouri, R. E., Papayannis, A., **Kokkalis, P.**, Giannakaki, E., Basart, S. and others: The potential of the synergistic use of passive and active remote sensing measurements for the validation of a regional dust model, *Annales Geophysicae*, **27**, 3155–3164, 2009.

2. Papayannis, A., Mamouri, R. E., Amiridis, V., Kazadzis, S., Pérez, C., Tsaknakis, G., **Kokkalis, P.** and Baldasano, J. M.: Systematic lidar observations of Saharan dust layers over Athens, Greece in the frame of EARLINET project (2004–2006), *Annales Geophysicae*, **27**, 3611-3620, 2009,

3. E. Gerasopoulos, **P. Kokkalis**, V. Amiridis, E. Liakakou, C. Pérez, K. Haustein, K. Eleftheratos, M. O. Andreae, T. W. Andreae, and C. S. Zerefos, Dust specific extinction cross-sections over the Eastern Mediterranean using the BSC-DREAM model and sunphotometer data: the case of urban environments, *Annales Geophysicae*, **27**, 2903–2912, 2009.

4. E. Remoundaki, A. Bourliva, **P. Kokkalis**, R.E. Mamouri, A. Papayannis, T. Grigoratos, C. Samara and M. Tsezos, Composition of PM_{10} during a Saharan dust transport event over Athens, Greece, *Science of the Total Environment*, **409**, 4361-4372, 2011.

5. G. Tsaknakis, A. Papayannis, **P. Kokkalis**, V. Amiridis, H. D. Kambezidis, R.E. Mamouri, G. Georgoussis and G. Avdikos, Inter-comparison of lidar and ceilometer retrievals for aerosol and Planetary Boundary Layer profiling over Athens, Greece, *Atmospheric Measurement Techniques*, **4**, 1261-1273, 2011.

6. E. Gerasopoulos, V. Amiridis, S. Kazadzis, **P. Kokkalis**, K. Eleftheratos, M. O. Andreae, T. W. Andreae, H. El-Askary, and C. S. Zerefos, Three-year ground based measurements of aerosol optical depth over the Eastern Mediterranean: the urban environment of Athens, *Atmospheric Chemistry and Physics*, **11**, 2145-2159, 2011.

7. A. Papayannis, R. E. Mamouri, **P. Kokkalis**, V. Amiridis, N. I. Kristiansen, A. Stohl, D. Balis, E. Giannakaki, D. Nicolae, G. Tsaknakis, L. Belegante, A. Nemuc, I. Veselovskii, M. Korenskiy, K. Allakhverdiev, M. F. Huseyinoglu and T. Baykara, Optical properties and vertical extension of ash layers over the Eastern Mediterranean as observed by Raman lidars during the Eyjafjallajökull eruption (May 2010), *Atmospheric Environment (Special Issue)*, **48**, 56-65, 2012.

8. V. Amiridis, C. Zerefos, S. Kazadzis, E. Gerasopoulos, K. Eleftheratos, M. Vrekoussis, A. Stohl, R.E. Mamouri, **P. Kokkalis**, A. Papayannis, K. Eleftheriadis, E. Diapouli, I. Keramitsoglou, C. Kontoes, V. Kotroni, K. Lagouvardos, E. Marinou, E. Giannakaki, E. Kostopoulou, C. Giannakopoulos, A. Richter, J.P. Burrows and N. Mihalopoulos, Impact of the 2009 Attica wild fires on the air quality in urban Athens, *Atmospheric Environment*, **46**, 536-544, 2012.

9. A. Papayannis, R. E. Mamouri, E. Remoundaki, A. Bourliva, G. Tsaknakis, V. Amiridis, **P. Kokkalis**, I. Veselovskii, S. Kazadzis, A. Kolgotin, A. Nenes, and C. Fountoukis, Optical-microphysical properties and chemical characterization of Saharan dust aerosols using a multi-wavelength Raman lidar, in situ sensors and modelling, *Atmospheric Chemistry and Physics*, **12**, 4011-4032, 2012.

10. **P. Kokkalis**, R.E. Mamouri, M. Todua, G.G. Didebulidze, A. Papayannis, V. Amiridis, S. Basart, C. Perez, and J. M. Baldasano, Strong dust event over Abastumani/Southern Caucasus, Georgia, during May 2009. Sun-photometric/lidar ground based and satellite observations and dust model simulation, *International Journal of Remote Sensing*, **33**, 4886-4901, 2012.

11. R. E. Mamouri, A. Papayannis, V. Amiridis, D. Müller, **P. Kokkalis**, S. Rapsomanikis, E.T. Karegeorgos, G. Tsaknakis, A. Nenes, and, S. Kazadzis and E. Remoundaki, Multi-wavelength Raman lidar, sunphotometric and aircraft measurements in combination with inversion models for the estimation of

the aerosol optical and physico-chemical properties over Athens, Greece, *Atmospheric Measurement Techniques*, **5**, 1793-1808, 2012.

12. E. Remoundaki, A. Papayannis, P. Kassomenos, E. Mantas, **P. Kokkalis**, and M. Tsezos, Influence of Saharan dust transport events on $PM_{2.5}$ concentrations and composition over Athens during 2010, *Water, Air and Soil Pollution*, **224**:1373, 1-14, doi:10.1007/s11270-012-1373-4, 2013.

13. **P. Kokkalis**, A. Papayannis, V. Amiridis, R. E. Mamouri, I. Veselovskii, A. Kolgotin, G. Tsaknakis, N. I. Kristiansen, A. Stohl, and L. Mona, Optical, microphysical, mass and geometrical properties of aged volcanic particles observed over Athens, Greece, during the Eyjafjallajökull eruption in April 2010 through synergy of Raman lidar and sunphotometer measurements, *Atmospheric Chemistry and Physics,* **13**, *9303-9320,* doi:10.5194/acp-13-9303-2013, 2013.

14. A. Tsekeri, A., Amiridis, V., **Kokkalis, P.**, Basart, S., Chaikovsky, A., Dubovik, O., Mamouri, R. E., Papayannis, A., and Baldasano, J. M.: Application of synergetic lidar and sumphotometer, algorithm for the characterization of a dust event over Athens, Greece, *Brit. J. Environ. Climate Change*, **3(4)**: 532-546, 2013.

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