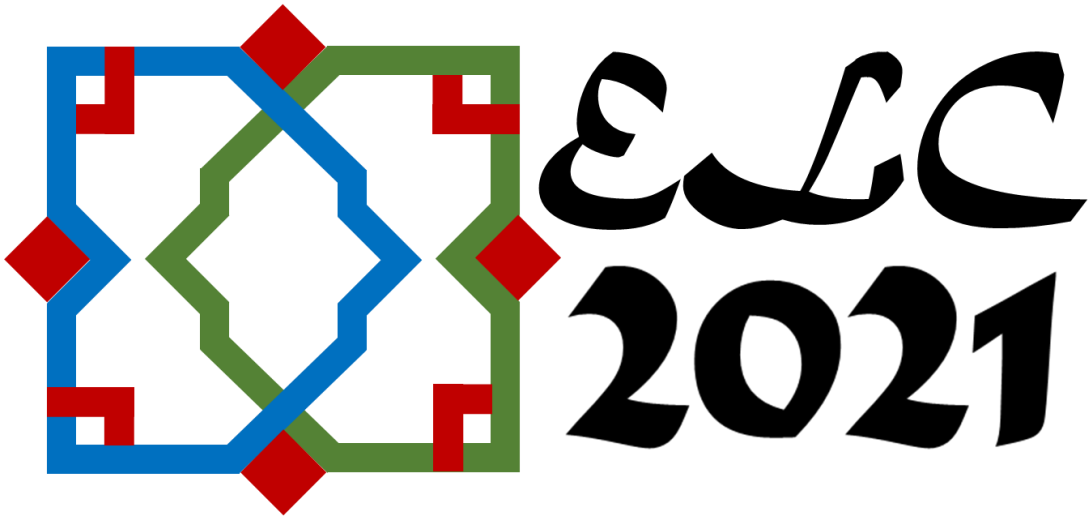

European Lidar Conference 2021

Granada

Scientific Program

Organized by the Atmospheric Physics Research Group

Andalusian Institute for Earth System Research (IISTA-CEAMA), University of Granada

Content

Preface

We are pleased to invite you to the 3rd edition of the European Lidar Conference (ELC), which will take place in Granada (Spain) from the 16th to the 18th of November 2021, hosted by the University of Granada, in a hybrid format.

The European Lidar Conference is settling down in the lidar community after two successful editions. This conference is intended to be organized each two years in between ILRCs, in five different sessions covering a wide range of state-of-the-art lidar-related topics. Each session is structured in oral and poster presentations, as well as a time slot dedicated to open discussion led by the session chairs.

ELC aims to be a friendly environment where lidarists can have a deep and open discussion. During 2.5 days, experts will have the opportunity to network, find new collaborations and develop longstanding ones, exchange ideas, create novel ones, and be inspired by top-level keynote lectures, to further improve the field of lidar research... A place where we can meet and discuss the very technical aspects of our work.

The amazing city of Granada, home of the encharming Alhambra, will be the scenery of ELC2021 that brings European groups active in lidar research, as well as researchers from many other countries worldwide. As in the previous edition, the participation of young researchers is especially encouraged.

Note that there is no board or established committee behind ELC, just a group of scientists who mobilized their resources for this experiment. As such, the involvement of the community for the continuation of this event will be needed. The whole idea is to “keep it simple” and “make it useful”.

This edition we are really looking forward to welcome you in Granada after the difficult time we all have been through.

Dr. Juan Antonio Bravo-Aranda

Marie Skłodowska-Curie

Cofund Postdoc

Dr. María J. Granados-Muñoz

Marie Skłodowska-Curie

IF Postdoc

Dr. Juan Luis Guerrero-Rascado

Tenured Professor

ELC2021 Local Organizing Committee

Committees

Conference Chairs

Lucas Alados-Arboledas (University of Granada, Spain)

Doina Nicolae (National Institute for Research and Development for Optoelectronics, Romania)

Alexandros Papayannis (National Technical University of Athens, Greece)

Local Organizing Committee

Juan Antonio Bravo-Aranda (University of Granada, Spain)

María José Granados-Muñoz (University of Granada, Spain)

Juan Luis Guerrero-Rascado (University of Granada, Spain)

Scientific Committee

Chair: Adolfo Comerón (Universitat Politècnica de Catalunya, Spain)

Session 1: Lidar technology

Paolo di Girolamo (Università degli Studi della Basilicata, Italy)

Igor Veselovskii (A.M. Prokhorov General Physics Institute, Russia)

Session 2: Lidar algorithms and data products

Ina Mattis (Deutscher Wetterdienst, Germany)

Ewan O'Connor (Finnish Meteorological Institute, Finland)

Session 3: Lidar applications

Iwona Stachlewska (University of Warsaw, Poland)

Patrick Rairoux (University of Lyon, France)

Session 4: Challenges - Atmospheric boundary layer and low altitude profiling

Romain Ceolato (ONERA, France)

Lucas Alados-Arboledas (University of Granada, Spain)

Session 5: Open topic - Synergies

Anca Nemuc (National Institute for Research and Development for Optoelectronics, INOE, Romania)

Rodanthi-Elisavet Mamouri (Cyprus University of Technology, Cyprus)

Open forum: Companies and users

Livio Belegante (National Institute for Research and Development for Optoelectronics, INOE, Romania)

Aldo Amodeo (Institute of Methodologies for Environmental Analysis, CNR-IMAA, Italy)

Technical Program Committee

Responsible for abstracts reviewing:

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Antonella Boselli (Institute of Methodologies for Environmental Analysis, CNR-IMAA, Italy)

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Michael Sicard (Universitat Politècnica de Catalunya, Spain)

Nikos Siomos (Aristotle University of Thessaloniki, Greece)

Scott Spuler (National Center for Atmospheric Research, NCAR, USA)

Kevin Strawbrigde (Environment and Climate Change Canada, Canada)

Sponsors

The organizers wish to acknowledge the support offered by the following sponsors, who made possible the "Participation Grants" for young researchers:

- EUMETSAT (https://www.eumetsat.int/)
- Raymetrics (https://www.raymetrics.com/)
- GRASP (https://www.grasp-sas.com/)
- IMAP (https://informaticaimap.es/)
- Cost Action PROBE (http://www.probe-cost.eu/)
- Atmospheric Physics Group, University of Granada (https://atmosphere.ugr.es/)
- Faculty of Sciences, University of Granada (https://fciencias.ugr.es/)
- Andalusian Institute for Earth System Research (IISTA) (https://www.iista.es/)
- Cimel Electronique (https://www.cimel.fr/)

And the following companies participating with a stand:

- Lumibird (https://www.lumibird.com/)
- Alava Ingenieros (https://www.grupoalava.com/)

General Information

Contact

Technical Secretariat ELC2021

C/ Luis Amador, 26

Centro de Negocios de Cámara de Comercio de Granada

18014 – Granada (Spain)

Monday to Friday

09:00 to 14:00 h and 15:00 to 18:00 h (CET)

Tel: +34 958 536 820

e-mail: congresosgranada@viajeseci.es

For general information

Local Organizing Committee: elc2021@ugr.es

Certificate of attendance

Certificates will be available upon request at: elc2021@ugr.es

Online participants

Connection to the conference for the online participants

The links to the conference virtual room are:

Tuesday, November 16

https://oficinavirtual.ugr.es/redes/SOR/SALVEUGR/accesosala.jsp?IDSALA=22982866
Password: 367851

Wednesday, November 17

https://oficinavirtual.ugr.es/redes/SOR/SALVEUGR/accesosala.jsp?IDSALA=22982865
Password: 936028

Thursday, November 18

https://oficinavirtual.ugr.es/redes/SOR/SALVEUGR/accesosala.jsp?IDSALA=22982864
Password: 149885

Due to IT limitations, the number of simultaneous connections to the virtual room is restricted. Please, consider minimizing the number of connections per institution if several participants can join with the same connection.

Please consider using an ethernet cable instead of Wi-Fi for a more stable connection. This is especially recommended for presenting authors.

Face-to-face participants

Venue

The European Lidar Conference 2021 venue is the Paraninfo hall in the "Parque Tecnológico de la Salud" campus of the University of Granada. The Paraninfo, founded in 2015 with a capacity for 840 people, is available for hosting conferences, symposiums and cultural events. The plenary, oral, poster and discussion sessions, as well as exhibitions, will take place in the Paraninfo. Lunch will be provided at the "Cafeteria" next to the Paraninfo in the same building.

The new and spacious venue with large capacity allows the accommodation up to 300 keeping the minimum social distance. We will put in place a wide range of precautionary measures, aligned with the directives of the European authorities.

Address: Paraninfo UGR - Av. de la Ilustración, 4P, 18016 Granada

How to get there

Subway/Metro:

Line 1 (stop: 'Dílar'). 13 min from 'Recogidas' stop near "Hotel Occidental". Attendants staying at "Andalucia Center" can take this metro line from "Hípica" stop.

More metro details: https://www.lovegranada.com/transport/granada-metro

Bus

Lines 4 and U3 will take you from the city center to the "Avda. Ilustración – Dílar" stop, located at 3 minutes walking distance from Paraninfo.

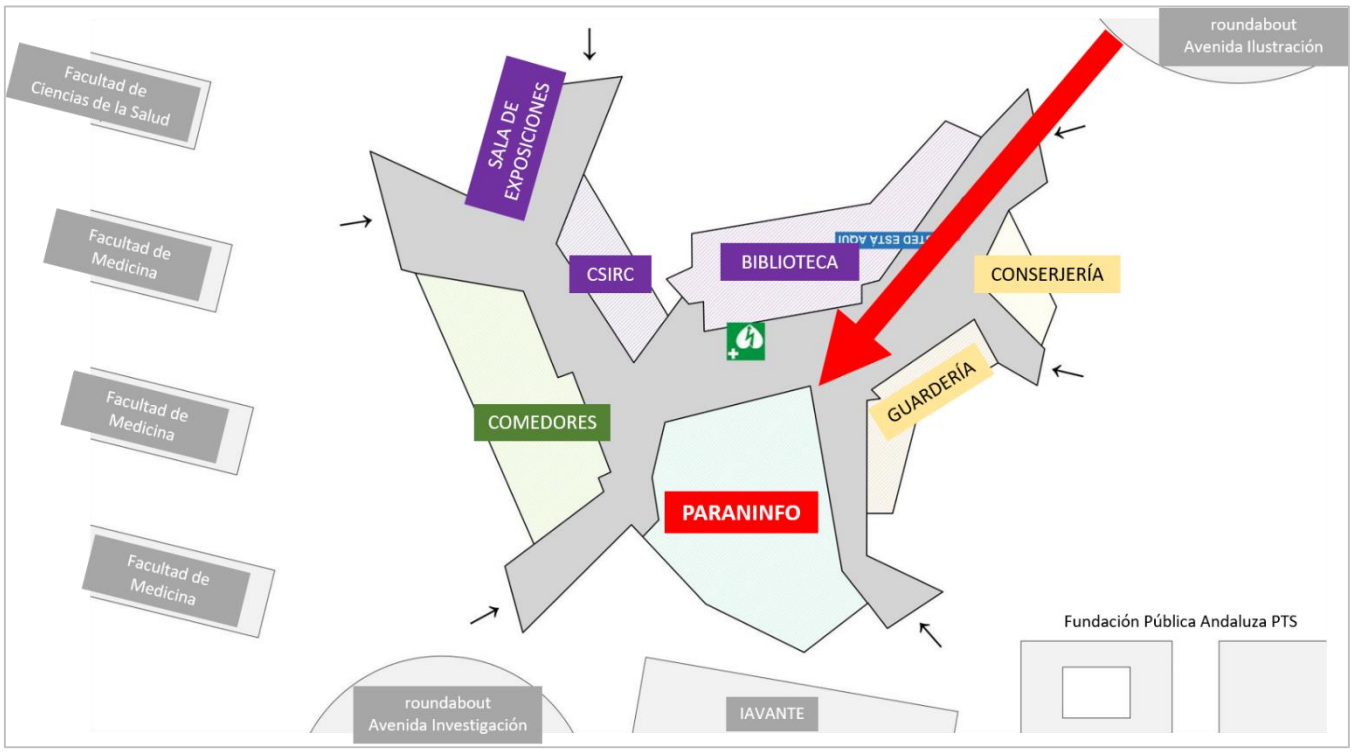
More bus details: https://www.lovegranada.com/transport/granada-buses/

Taxi:

Tele-Radio-Taxi: +34 958 280 000

Radio-Taxi-Genil: +34 958 132 323

*A typical taxi fare from the Conference Centre to the city centre is 8 €.



Discover Granada

The Alhambra Palace is definitely the top attraction in the city of Granada. Both a palace and a fortress, it is the most visited monument in Spain and it is. Tickets should be purchased in advance since they sell out quite quickly. For further details, https://www.lovegranada.com/alhambra/

The districts of Albaicín and Sacromonte are worth a walk along their sinuous streets. The Albaicín, located opposite to the Alhambra, offers a unique view of the Palace, especially in the evening. The Mirador de San Nicolás offers one of the most wonderful sunsets in the world. The Sacromonte is famous for its flamenco shows in gypsy caves, a unique spectacle offered in Granada. The Sacromonte is also home of the Sacromonte Abbey, a historic building located in a privileged environment with views above both the city and Sierra Nevada (https://www.lovegranada.com/monuments/sacromonte-abbey/)

Granada Charterhouse (Spanish: Cartuja de Granada) is a Carthusian monastery, one of the finest examples of Spanish Baroque architecture. The charterhouse was founded in 1506. While the exterior is a tame ember in comparison, the interior of the monastery is a flamboyant explosion of ornamentation. Its complex echoing geometric surfaces make of it one of the masterpieces of Churrigueresque style. For further details: https://www.lovegranada.com/monuments/cartuja-monastery/

The Parque de las Ciencias is an interactive museum, of more than 70,000 m^2, placed a few minutes from the historical center of Granada with one of the most varied offers of Europe's cultural and scientific leisure (www.parquedelasciencias.es).

You can find more information in the official tourism webpage (http://en.granadatur.com/) and the following web, which includes a lot of information and tips on what to do in Granada to enjoy your stay here: https://www.lovegranada.com/granada/things-to-do/

And do not forget to enjoy Granada's wonderful gastronomy (https://www.lovegranada.com/food/)!!

Presentation Information

Abstracts

All accepted abstracts are published in the ELC2021 Electronic Proceedings Book, included in your virtual conference bag and available at the website http://www.elc2021.iista.es/. In case you do not want us to share your abstract with the conference participants, please, let us know.

ELC2020 and ELC2021 participants are invited to submit a paper to the Special Issue of the Journal 'Remote Sensing' (Impact factor: 4.848, Q1) dedicated to the Conference and entitled "Selected Papers of the European Lidar Conference". A special discount will be offered to the conference participants.

How to submit your paper?

1. Prepare your paper as soon as possible. The final and last deadline to submit your paper is 30th June 2022.

2. Submit your paper according the journal's guidelines on the online submission system of the journal: https://susy.mdpi.com/. In the box 'Special Issue' do not forget to select 'Selected papers of the European Lidar Conference.

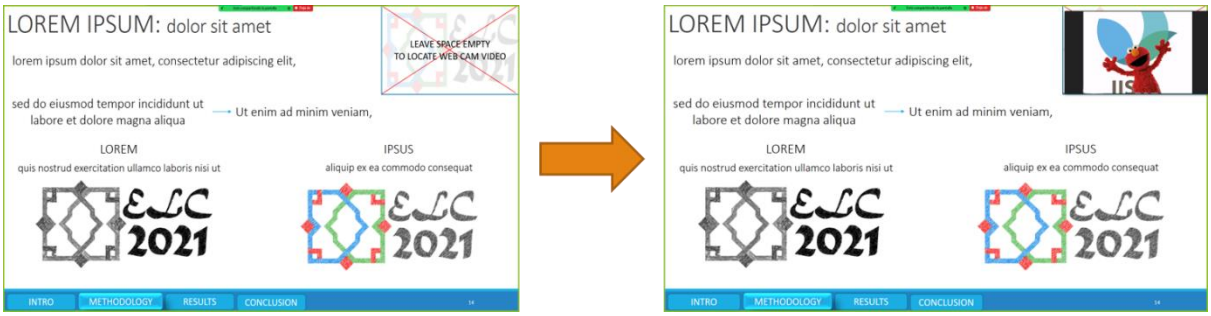
3. After submission of your paper, please send an email to elc2021@ugr.es with the details of your submission (title of the paper, authors and reference).

Instructions for face-to-face oral presentations

Oral presentations will have a 12-minute time slot plus 3 minutes for short questions. Additional time for questions will be available during the Discussion Sessions.

Instructions for <u>online oral</u> presentations

Speakers will share their presentations in the plenary virtual room. An ethernet connection is advised for the speakers in order to avoid connection problems during their presentations. Oral presentations would have a 12-minute time slot plus 3 minutes for short questions. Additional time for questions will be available during the Discussion Sessions. Power-point presentation design is free but a small rectangle (5,5x9,0 cm) in the upper right corner must be empty to locate the speaker webcam.



Online speakers are encouraged to send a pre-recorded video of their oral presentation in mp4 format (not mandatory). This video will be played instead of the live presentation in case of any technical issue. Please, send the video before 9 November 2021.

Instructions for <u>face-to-face poster</u> presentations

Posters should be printed in portrait A0 pdf format and with enough resolution. Presenting authors are kindly asked to stand by their posters during the poster session.

Please submit your poster in pdf format to elc2021@ugr.es before 9 November 2021 for organizational purposes. Posters will be made publicly available together with the Proceedings Book. In case you do not want us to share your poster or abstract with the conference participants, please, let us know.

Instructions for <u>online poster</u> presentations

Posters should be in landscape A4 pdf format and with enough resolution to be readable when displayed on your shared screen. Presenting authors are kindly asked to present their posters during the poster session. Posters are presented in individual virtual rooms where the presenting authors would display their posters by sharing their screens.

The conference participants can join the authors to discuss their work during the poster sessions in the individual virtual room using a link with the following format:

https://meet.jit.si/elc2021_POSTERCODE

For example, https://meet.jit.si/elc2021_S01P00

Please submit your poster to elc2021@ugr.es before 9 November 2021 for organizational purposes. Posters would be made publicly available together with the Proceedings Book. In case you do not want us to share your poster or abstract with the conference participants, please, let us know.

Scientific Program

ELC2021 - 3rd European Lidar Conference					
Duration	**Time**		**16-11-2021**	**17-11-2021**	**18-11-2021**
00:45	08:30	08:45	Registration		
	08:45	09:00			
	09:00	09:15			
00:15	09:15	09:30	Welcome and logistics		
00:30	09:30	09:45	Invited talk	Session 3 - oral 1	Session 5 - oral 1
	09:45	10:00		Session 3 - oral 2	Session 5 - oral 2
01:15	10:00	10:15	Session 1 - oral 1	Session 3 - oral 3	Session 5 - oral 3
	10:15	10:30	Session 1 - oral 2	Session 3 - oral 4	Session 5 - oral 4
	10:30	10:45	Session 1 - oral 3	Session 3 - oral 5	Session 5 - oral 5
	10:45	11:00	Session 1 - oral 4	Session 3 - oral 6	Session 5 - oral 6
	11:00	11:15	Session 1 - oral 5	Coffee Break	Coffee Break
01:15	11:15	11:30	Coffee Break	Session 3&4 - posters	Session 5 - posters
	11:30	11:45	Session 1&2 - posters		
	11:45	12:00			
	12:00	12:15		Open forum: companies and users	
	12:15	12:30			Session 5 - Discussion
00:45	12:30	12:45	Session 1 - Discussion		
	12:45	13:00			
	13:00	13:15			Concluding remarks & next conference
01:30	13:15	13:30	**Lunch Break**	**Lunch Break**	
	13:30	13:45			
	13:45	14:00			
	14:00	14:15			
	14:15	14:30			
	14:30	14:45			
01:15	14:45	15:00	Session 2 - oral 1	Session 4 - oral 1	
	15:00	15:15	Session 2 - oral 2	Session 4 - oral 2	
	15:15	15:30	Session 2 - oral 3	Session 4 - oral 3	
	15:30	15:45	Session 2 - oral 4	Session 4 - oral 4	
	15:45	16:00	Session 2 - oral 5	Session 4 - oral 5	
01:15	16:00	16:15	Coffee Break	Coffee Break	
	16:15	16:30	Session 1&2 - posters	Session 3&4 - posters	
	16:30	16:45			
	16:45	17:00			
	17:00	17:15			
00:45	17:15	17:30	Session 2 - Discussion	Session 3&4 - Discussion	
	17:45	18:00			
	20:00	-		Social dinner	

Sessions
S1 Lidar Technology
S2 Lidar Algorithms and Data Products
S3 Lidar applications
S4 ABL and low altitude profiling
S5 Open topic – Synergies
S6 Open forum – companies and users

TUESDAY 16th NOVEMBER

(Central Europe Time)

08:30-09:15	**REGISTRATION**
09:15-09:30	**WELCOME AND LOGISTICS**
09:30-10:00	**INVITED TALK: A wind, temperature, H_2O and CO_2 scanning lidars mobile observatory to study surface-atmosphere interaction. Application in temperate and semi-arid region** F. Gibert, D. Edouart, P. Monnier, C. Cénac, J. Lopez and J. Collignan

Session 1: Lidar Technology

Chairs: Paolo di Girolamo and Igor Veselovskii

(Central Europe Time)

10:00-10:15	S01O01 Face-to-face	**Picosecond short-range elastic backscatter lidar technique for measuring ultrafine particles including smoke** R. Ceolato, A. E. Bedoya-Velásquez, F. Fossard, V. Mouysset, L. Paulien, S. Lefebvre, C. Mazzoleni, C. Sorensen, M. Berg and J. Yon
10:15-10:30	S01O02 Online	**Identification of atmospheric aerosol composition from Raman-scattering and fluorescence spectra: results from laboratory investigations** B. Tatarov and D. Müller
10:30-10:45	S01O03 Face-to-face	**Development of a satellite altimeter for the planetary defence program HERA** L. Belegante, A. Nemuc, T. Sousa, V. Granadeiro and P. Gordo
10:45-11:00	S01O04 Online	**Polarization lidar: a laboratory Pi-polarimeter to evaluate the lidar particles depolarization ratio of mineral dust, soot and pollens at 180.0° lidar backscattering angle** A. Miffre, D. Cholleton and P. Rairoux
11:00-11:15	S01O05 Online	**The atmospheric Raman temperature and humidity sounder, technical challenges through three years of measurements** D. Lange, A. Behrendt and V. Wulfmeyer
11:15-11:30		**COFFEE BREAK**

11:30-12:30	**POSTER SESSION (Sessions 1 and 2)**
12:30-13:15	**DISCUSSIONS SESSION 1: Lidar Technology** All attendants
13:15-14:45	**LUNCH BREAK**

Session 2: Lidar Algorithms and Data Products

Chairs: Ina Mattis and Ewan O'Connor

(Central Europe Time)

14:45-15:00	S02O01 Face-to-face	**Microphysical particle parameter retrieval from Raman lidar: Arctic case study from the MOSAiC winter** C. Böckmann, C. Ritter and J. Dube
15:00-15:15	S02O02 Face-to-face	**Statistical intercomparison of Aeolus B10 SCA and SCAmb backscatter coefficient with ground-based measurements of ACTRIS/EARLINET stations in South-Western Europe** J. Abril-Gago, J. L. Guerrero-Rascado, M. J. Costa, J. A Bravo-Aranda, M. Sicard, D. Bermejo-Pantaleón, D. Bortoli, M. J. Granados-Muñoz, A. Rodríguez-Gómez, C. Muñoz-Porcar, A. Comerón, P. Ortiz-Amezcua, V. Salgueiro, M. M. Jiménez-Martín and L. Alados-Arboledas
15:15-15:30	S02O03 Face-to-face	**Retrieval of aerosol properties from lidar measurements based on the Maximum Likelihood Estimation method** Y. Chang, Q. Hu and P. Goloub
15:30-15:45	S02O04 Online	**Robust filtering of Doppler lidar returns** M. Kayser, V. Lehmann, C. Detring, E. Paeschke and R. Leinweber
15:45-16:00	S02O05 Face-to-face	**Statistical analysis applied to Doppler lidar wind profiles: Weibull, Von Misses distributions and complex principal components** P. Ortiz-Amezcua, A. Martínez-Herrera, J. L. Guerrero-Rascado and L. Alados-Arboledas
16:00-16:15		**COFFEE BREAK**
16:15-17:15		**POSTER SESSION (Sessions 1 and 2)**
17:15-18:00		**DISCUSSIONS SESSION 2: Lidar Algorithms and Data Products** All attendants

Poster Session 1 and Session 2

S01P01 Online	**Comparison of a dual-polarisation Raman lidar with a novel Vaisala CL61 Ceilometer with depolarisation capability** J. Buxmann, M. Osborne, D. O'Sullivan and R. Roininen
S01P02 Online	**Sensitivity study for the development of a dual-channel HSRL system for aerosol and cloud studies** P. Kokkalis, A. Tavernarakis, G. Georgousis, G. Tskanakis, V. Amiridis and A. Papayannis
S01P03 Online	**Aeronautics application of direct-detection Doppler wind Lidar: alleviation of airframe structural loads caused by turbulence and gusts** P. Vrancken, N. Fezans, D. Kiehn, O. Kliebisch, Ph. Linsmayer and J. Thurn
S01P04 Face-to-face	**Development of a satellite altimeter for the planetary defence program HERA** L. Belegante, A. Nemuc, T. Sousa, V. Granadeiro and P. Gordo
S01P05 Online	**Fixed and mobile multi-wavelength Raman lidar at CNR-IMAA in Potenza in the frame of ACTRIS** B. De Rosa, A. Amodeo, G. D'Amico, A. Giunta, L. Mona and D. Summa
S01P06 Online	**Development and validation of a scanning depolarization lidar system for studying urban aerosols in a tropical valley** M. Hoyos-Restrepo and E. Montilla-Rosero
S01P07 Online	**Laboratory evaluation of the (UV,VIS) lidar depolarization ratio of pure pollen grains at exact backscattering angle** D. Cholleton, E. Bialic, A. Dumas, P. Kaluzny, P. Rairoux and A. Miffre
S01P08 Online	**Dual Comb Spectroscopy (DCS) for atmospheric trace gas detection towards DCS in the UV range** C.Pivard, S.Galtier and P.Rairoux
S02P01 Face-to-face	**Intense Saharan dust outbreak over the Iberian Peninsula in springtime 2021: monitoring and characterization of transported dust particles** M. A. López-Cayuela, C. Córdoba-Jabonero, D. Bermejo-Pantaleón, M. Sicard, V. Salgueiro, F. Molero, C. V. Carvajal-Pérez, M. J. Granados-Muñoz, A. Comerón, M. J. Costa, R. Barragán, M. P. Zorzano, J. A. Bravo-Aranda, C. Muñoz-Porcar, D. Bortoli, B. Artíñano, M. M. Jiménez-Martín, A. Rodríguez-Gómez, M. Pujadas, J. Abril-Gago, L. Alados-Arboledas and J. L. Guerrero-Rascado

S02P02 Face-to-face	**Short-wave and long-wave radiative effect during the summer 2019 heatwave produced partly by an inter-continental Saharan dust outbreak: impact of the fine and coarse dust particles** C. Córdoba-Jabonero, M. Sicard, M. A. López-Cayuela, A. Ansmann, A. Comerón, M. P. Zorzano, A. Rodríguez-Gómez and C. Muñoz-Porcar
S02P03 Face-to-face	**Inverse methods for retrieving aerosol products from ceilometers** A. E. Bedoya-Velásquez, S. Lefebvre, M. Herreras-Giralda, R. Román, C. Toledano, T. Huet and R. Ceolato
S02P04 Face-to-face	**Aeolus L2A optical product: algorithm performances and example data** A. Lacour, D. Trapon, T. Flament, A. Dabas and F. Ehlers
S02P05 Online	**Comparison between the 2D wind fields retrieved by a scanning Doppler lidar and anemometric measurements** J. A. Benavent-Oltra, D. Romanic, M. Lompar and M. Burlando
S02P06 Online	**Alignment optimization and overlap function estimation in stepper motor controlled lidars** M. Di Paolantonio, D. Dionisi and G. L. Liberti
S02P07 Online	**Aerosol monitoring at high mountains remote station: an example from the Yunnan campaign at 3200 m altitude above sea level** A. Sannino, A. Boselli, X. Wang and S. Amoruso
S02P08 Face-to-face	**Cirrus cloud properties over the European Arctic (Ny-Ålesund, Svalbard)** K. Nakoudi, M. Goldrina, I. Stachlewska and C. Ritter
S02P09 Online	**ESA's wind lidar mission Aeolus** J. von Bismarck, T. Fehr, T. Parrinello, A. Straume-Lindner and D. Wernham
S02P10 Online	**Databank of backscattering matrices for ice atmospheric particles with sizes of 10-100 microns for problems of laser sensing of the atmosphere** D. Timofeev, I. Tkachev, V. Shishko, A. Konoshonkin, N. Kustova and A. Borovoi
S02P11 Online	**Application of aerosol typing to separate three-component aerosol mixture from Raman lidar data measured in West Africa, December 2015** A. Kolgotin, I. Veselovskii, M. Korenskiy, P. Goloub, Q. Hu and T. Podvin
S02P12 Online	**Algorithm to determine the aerosol pollution layers from ceilometer profiles** M. Adam, V. Nicolae and M. Boldeanu
S02P13 Online	**Aerosol layer identification and segmentation from lidar and ceilometer profiles using unsupervised deep learning** M. Boldeanu, C. Manolache, H. Cucu, C. Burileanu and C. Talianu

S02P14 Online	**An end-to-end simulator and gas concentration retrieval processor applied to the MERLIN lidar mission to check its performance and study its sensitivity to geophysical parameters** V. Cassé, R. Armante, Ph. Bousquet, O. Chomette, C. Crevoisier, T. Delahaye, D. Edouart, F. Gibert, B. Millet, F. Nahan and C. Pierangelo
S02P15 Online	**First ever observations of mineral dust in wintertime over Warsaw, Poland** D. M. Szczepanik, P. Ortiz-Amezcua, Ł. Janicka, W. Kumala, B. Heese, D. Althausen, G. D'Amico and I. S. Stachlewska
S02P16 Online	**Observations of wildfire smoke aerosols from PollyXT and CL51 lidars in Finland** X. Shang, T. Mielonen, A. Lipponen, E. Giannakaki, A. Leskinen, V. Buchard, A. S. Darmenov, A. Kukkurainen, A. Arola, E. O'Connor, A. Hirsikko and M. Komppula
S02P17 Online	**End-to-end simulation of a space-borne Raman lidar for the thermodynamic profiling of the atmosphere** N. Franco, P. Di Girolamo, D. Summa, B. De Rosa, A. Behrendt, A. Comerón and V. Wulfmeyer
S02P18 Online	**Gravity wave parameters and their seasonal variations study near 120°E China based on Na LIDAR observations** X. Zou, G. Yang, P. Batista, J. Wang, V. Andrioli, J. Jiao and L. Du
S02P19 Online	**Observation of corner reflections from oriented ice crystals according to the data of the scanning lidar LOSA IAO SB RAS (Tomsk)** V. Shishko, G. P. Kochanenko, Y.S. Balin, A. Konoshonkin, N. Kustova, D. Timofeev and A. Borovoi
S02P20 Online	**Development of an automatic optimal estimation-based aerosol typing scheme** A. A. Floutsi, H. Baars, M. Haarig and U. Wandinger
S02P21 Online	**CALIPSO aerosol observations during an intense pollen episode in Kuopio, Finland at 2016** V. Gouliaditis, E. Giannakaki, M. Gatou, X. Shang, S. Bohlmann and M. Komppula

WEDNESDAY 17th NOVEMBER

Session 3: Lidar applications

Chairs: Iwona S. Stachlewska and Patrick Rairoux

(Central Europe Time)

09:30-09:45	S03O01 Online	**Vertically highly resolved climatology of cloud base heights and the Covid-19 induced anomaly in cloud occurrence in spring 2020** I. Mattis, W. Thomas and A. Mödl
09:45-10:00	S03O02 Face-to-face	**Aerosol hygroscopic properties from Raman lidar measurements** F. Navas-Guzmán, G. Martucci, M. Collaud-Coen, M. Hervo, A. Barreto, J. López-Solano, J. A. Ruiz-Arias, H. Lyamani, C. Hüglin, D. Pérez-Ramírez, G. Titos, M. Alonso, L. Alados-Arboledas, B. T. Brem, M. Gysel-Beer and A. Haefele
10:00-10:15	S03O03 Face-to-face	**Application of fluorescence lidar for characterization of smoke particles in upper troposphere and inside cirrus clouds** I. Veselovskii, Q. Hu, P. Goloub, T. Podvin, A. Ansmann and M. Korenskiy
10:15-10:30	S03O04 Online	**CALIPSO lidar observations of changes in cirrus cloud properties over the European Mid-Latitudes during the COVID-19 related air traffic reduction** S. Groß and Q. Li
10:30-10:45	S03O05 Online	**Sensitivity analysis of a ground-based lidar system for detecting ultrafine particles in the Amazon upper troposphere** M. T. Silva, D. A. Gouveia, J. L Guerrero-Rascado, A. L. Correia and H. M. J Barbosa
10:45-11:00	S03O06 Online	**Airborne lidar observations of seasonal differences in transatlantic Saharan dust transport towards the Caribbean** M. Gutleben, S. Groß and M. Wirth
11:00-11:15		**COFFEE BREAK**
11:15-12:00		**POSTER SESSION (Sessions 3 and 4)**
12:00-13:15		**OPEN FORUM: Companies and users** ***Chairs: Livio Belegante and Aldo Amodeo***
13:15-14:45		**LUNCH BREAK**

Session 4: Challenges - Atmospheric boundary layer and low altitude profiling

Chairs: Romain Ceolato and Lucas Alados-Arboledas

(Central Europe Time)

14:45-15:00	S04O01 Face-to-face	**Comparison in the estimation of mixing layer height from ceilometer profiles using the STRATfinder algorithm with IFS and WRF model predictions** R. Barragán, F. Molero, M. R. Theobald, M. García-Vivanco, A. Rodríguez-Sánchez, V. Gil, J. L. Garrido, M. Pujadas and B. Artíñano
15:00-15:15	S04O02 Online	**The role of dry layers and cold pools in the activation of mesoscale convective systems: a characterization study based on the combined use of Raman lidar and DIAL measurements and MESO-NH model simulations** P. Di Girolamo, M.-N. Bouin, C. Flamant, D. Summa, B. De Rosa and N. Franco
15:15-15:30	S04O03 Online	**Exploring the application boundaries of stochastic theories regarding turbulent atmospheric ceilometer data** I.-A. Roşu, M. M. Cazacu, A. Timofte and M. Agop
15:30-15:45	S04O04 Online	**Planetary boundary layer height retrievals using remote sensing observational datasets** I. Tsikoudi, E. Marinou, A. Gialitaki, M. Tsichla, V. Amiridis, E. Giannakaki, M. Tombrou, V. Vakkari, M. Komppula and H. Flocas
15:45-16:00	S04O05 Face-to-face	**The characteristics of planetary boundary layer over Măgurele, Romania investigated using a synergy between Doppler wind lidar, cloud radar, and radiometer** R. Pîrloagă, F. Țoancă, S. Andrei, C. Marin, D. Ene, B. Antonescu and D. Nicolae
16:00-16:15		**COFFEE BREAK**
16:15-17:15		**POSTER SESSION (sessions 3 and 4)**
17:15-18:00		**DISCUSSIONS SESSION 3 AND 4: Lidar Algorithms and Data Products; Challenges - Atmospheric boundary layer and low altitude profiling** All attendants
20:00		**SOCIAL DINNER (optional): La Chumbera Restaurant**

Poster Session 3 and Session 4

S03P01 Face-to-face	**Observations and analysis of California smoke in Lille (France) with a Mie-Raman polarization-fluorescence lidar** Q. Hu, P. Goloub, I. Veselovskii and T. Podvin
S03P02 Online	**COLOR: CDOM-proxy retrieval from aeOLus ObseRvations** D. Dionisi, S. Bucci, C. Cesarini, S. Colella, D. D'Alimonte, L. Di Ciolo, P. Di Girolamo, M. Di Paolantonio, N. Franco, G. Gostinicchi, T. Kajiyama, G. L. Liberti, E. Organelli and R. Santoleri
S03P03 Online	**Triple-wavelength depolarization and lidar ratio observations in Saharan dust and comparison to AERONET retrievals** M. Haarig, R. Engelmann, A. Ansmann, H. Baars, D. Althausen and U. Wandinger
S03P04 Online	**Lidar depolarization ratio of atmospheric pollen at multiple wavelengths** S. Bohlmann, X. Shang, V. Vakkari, E. Giannakaki, A. Leskinen, K. E. J. Lehtinen, S. Pätsi and M. Komppula
S03P05 Online	**The ERATOSTHENES CoE part of PollyNET, First observations of the PollyXT-CYP in the complex atmosphere over the Eastern Mediterranean** R. E. Mamouri, A. Nisantzi, R. Engelman, J. Bühl, P. Seifert, H. Baars, Z. Yin, D. Hadjimitsis and A. Ansmann
S03P06 Online	**Aerosol typing over Europe during the COVID-19 campaign: possible changes in the dominant aerosol types during the lockdown** K. A. Voudouri, D. Nicolae, L. Mona, G. D'Amico, V. Amiridis, E. Marinou, A. Gialitaki, A. Kampouri, A. Tsekeri, M. Sicard, A. Rodriguez, S. Romano, M. R. Perrone, A. Floutsi, X. Shang, S. Bohlmann, N. Papagiannopoulos, N. Siomos, C. Talianu, I. Stachlewska, R. Fortuna, M. Mylonaki and D. Balis
S03P07 Face-to-face	**Early seasonal dust intrusions over Central and Eastern Europe observed using ground based lidar systems and satellite products** A. Mereuta, H. Stefanie, C. Botezan, A. Ozunu, L. Deaconu, A. Radovici and N. Ajtai
S03P08 Online	**Aerosol vertical hygroscopic growth from multi-wavelength lidar measurements in Barcelona, NE Spain: a spectral analysis** D. C. F. S. Oliveira, C. Muñoz-Porcar, A. Comerón, A. Rodríguez-Gómez and M. Sicard
S03P09 Online	**Aerosol typing from remote sensing techniques and in situ data over Thessaloniki, Greece** K. A. Voudouri1, N. Siomos, K. Michailidis, A. Chatzopoulou, A. Natsis, I. Fountoulakis, A. Karanikolas, G. Kouvarakis, K. Garane, A. Bais and D. Balis

S03P10 Online	**Synoptic environment associated with a large wildfire and a dust outbreak affecting Portugal** F. T. Couto, V. Salgueiro, N. Andrade, M. J. Costa, R. Salgado, D. Bortoli and J. L. Guerrero-Rascado
S03P11 Online	**Radiative forcing of marine and dust aerosols over the Eastern Mediterranean** M. Tsichla, A. Tsekeri, V. Amiridis, A. Nersesian, S. Kazadzis, A. Gialitaki, E. Marinou, I. Tsikoudi, N. Kalivitis, and N. Mihalopoulos
S03P12 Online	**Aerosol typing using AERONET data products** E. Giannakaki, G. Giagkogiakis, M. Gatou and M. Komppula
S03P13 Online	**Highlights of aerosols multiwavelength lidar measurements over Athens, Greece (2020-2021)** M. Gidarakou, A. Papayannis, D. Anagnou, M. Mylonaki, O. Soupiona, C. A. Papanikolaou, R. Foskinis, E . Kralli and P. Kokkalis
S03P14 Online	**Long-term characterization of the vertical impact of the Saharan Air layer in the North Atlantic subtropical atmosphere** A. Barreto, E. Cuevas, R. D. García, J. Carrillo, J. M. Prospero, L. Illic, S. Basart, A. Berjón, C. L. Marrero, Y. Hernández, J. J. Bustos, S. Nickovic and M. Yela
S03P15 Online	**Optical and Microphysical Properties of Biomass Burning Aerosols and Mixtures Lidar Observations in Athens, Greece (2011-2019)** M. Mylonaki, A. Papayannis, D. Anagnou, I. Veselovskii, C.-A. Papanikolaou, P. Kokkalis, O. Soupiona, R. Foskinis, M. Gidarakou and E. Kralli
S03P16 Online	**Statistics over three years of near real time alert system for tropospheric aerosol pollution using ceilometer, photometer and backtrajectory analysis** M. Adam, K. Fragkos, I. Binietoglou, D. Wang and I. S. Stachlewska
S03P17 Online	**Estimation of cloud base and top using 3D Lidar measurements the frame of SAFE-TRANS project** O. Soupiona, H.–X. Delastic, A. Papayannis, G. Georgoussis and V. Kostopoulos
S03P18 Online	**Long-range transport of aerosols over Athens, Greece during Autumn 2020** C. A. Papanikolaou, A. Papayannis, M. Mylonaki, O. Soupiona, E. Kralli, P. Kokkalis, R. Foskinis, D. Anagnou and M. Gidarakou
S03P19 Online	**An intercomparison study of the retrieval algorithm for water vapour mixing Ratio profiles using the Raman lidar technique and the ERA5 model** E. Kralli, R. Foskinis, A. Papayannis, O. Soupiona, H.–X. de Lastic, M. Mylonaki, C.A. Papanikolaou, D. Anagnou and M. Gidarakou

S03P20 Online	**Long-term lidar measurements of Australian wildfire smoke layer in the stratosphere over southern South America in 2020-2021: Potential influence on ozone reduction?** K. Ohneiser, A. Ansmann, B. Kaifler, A. Chudnovsky, B. Barja, H. Baars, P. Seifert, C. Jimenez, M. Radenz and R. Engelmann
S03P21 Online	**First results on the Aeolus L2A validation during ASKOS Campaign** P. Paschou, N. Siomos, G. Georgoussis, E. Marinou, A. Gkikas, V. Freudenthaler, J. Von Bismarck, T. Fehr and V. Amiridis
S03P22 Online	**Optical properties of fresh smoke: a case study from PANGEA observatory** A. Gialitaki, A. Tsekeri, A. Kampouri, M. Tsichla, I. Tsikoudi, E. Marinou, V. Amiridis and D. Balis
S03P23 Online	**Evaluation of the AEOLUS L2A aerosol product over Europe using ground based lidar data from EARLINET** N. Siomos, A. Gkikas, H. Baars, U. Wandinger, V. Amiridis, P. Paschou and the EARLINET consortium
S03P24 Face-to-face	**Identification and tracking of a desert dust plume detected at Ny-Ålesund, Svalbard** S. Herrero-Anta, D. Mateos, R. Román, D. González-Fernández, C. Toledano, R. González, V. E. Cachorro, A. Calle and A. M. de Frutos
S03P25 Face-to-face	**Monitoring and characterization of clouds and aerosols in real homogeneous and dust-induced cloud nucleation scenarios** C. V. Carvajal-Pérez, C. Córdoba-Jabonero, M. Á. López-Cayuela, M. P. Zorzano and M. Sicard
S03P26 Face-to-face	**Tracking with Aeolus the Californian wildfire smoke transported over Atlantic** D. Trapon, A. Lacour, T. Flament, A. Dabas and F. Ehlers
S03P27 Online	**Investigating the relationship between ice crystals clouds and the source of underlying aerosols** K. A. Voudouri, B. Schäfer, M. Flügge, I. Hanssen and M. Gausa
S03P28 Online	**Comparison between lidar observations and reanalysis simulations of dust layer evolution over three EARLINET sites across the Mediterranean region in July 2012** M. Mytilinaios, L. Mona, S. Basart and E. Di Tomaso
S04P01 Face-to-face	**Raman lidar profiling of optical properties of urban winter smog** K. Borek, I. S. Stachlewska and R. Engelmann
S04P02 Face-to-face	**Comparison of spatial aerosol distributions measured in situ and by a scanning LIDAR** H. Zhang, H. Saathoff, C. Rolf, R. Tillmann, F. Wagner, F. Wienhold and T. Leisner

S04P03 Online	**ABL determination by Raman lidar and comparison with different approaches in the frame of HyMeX SOP1** D. Summa, P. Di Girolamo, G. Vivone, G. D'Amico and N. Franco
S04P04 Online	**Combining ceilometer and surface meteorological data with machine learning to estimate the atmospheric boundary layer height at the ACTRIS Granada station** G. de Arruda Moreira, G. Sánchez-Hernandez, J. L. Guerrero-Rascado, A. Cazorla and L. Alados-Arboledas
S04P05 Face-to-face	**Performances and evolution of CIMEL CE376 micro-pulse LIDAR** I. Popovici, S. Victori, L. Proniewski, M. F. Sánchez-Barrero, T. Podvin, P. Goloub, Y. Gonzalez-Ramos and P. Augustin
S04P06 Face-to-face	**Method to retrieve aerosol extinction profiles and aerosol scattering phase functions with a modified CCD laser atmospheric detection system** Y. Bian and C. Zhao

THURSDAY 18th NOVEMBER

Session 5: Open topic – Synergies

Chairs: Anca Nemuc and Rodanthi-Elisavet Mamouri

(Central Europe Time)

09:30-09:45	S05O01 Face-to-face	**Aerosol layer height from ground based active remote sensing and satellite ALH product of S5P/TROPOMI** A. Nemuc, M. Boldeanu, A. Dandocsi, M. Adam and V. Nicolae
09:45-10:00	S05O02 Face-to-face	**Statistical analysis of the atmospheric aerosol radiative properties over a year in Granada** E. Bazo, M. J. Granados-Muñoz, J. A. Bravo-Aranda and R. Román
10:00-10:15	S05O03 Face-to-face	**Aerosol properties retrieved from LIDAR and photometer mobile measurements during FIREX-AQ campaign in 2019** M. F. Sánchez-Barrero, I. Popovici, P. Goloub, S. Victori, T. Podvin, L. Blarel, G. Dubois, A. Lapionak, L. Proniewsky, B. Holben, D. Giles, A. LaRosa, T. Eck, M. Sorokin, J. Schafer, A. Smirnov, A. Sinyuk, I. Slutsker, J. Kraft and B. Torres
10:15-10:30	S05O04 Face-to-face	**Synergy processing of diverse ground-based remote sensing and in situ data using the GRASP algorithm: applications to radiometer, lidar and radiosonde observations** A. Lopatin, O. Dubovik, D. Fuertes, G. Stenchikov, T. Lapyonok, I. Veselovskii, F. G. Wienhold, I. Shevchenko, Q. Hu, S. Parajuli
10:30-10:45	S05O05 Online	**Presenting ASSA: an Aerosol Species Separation Algorithm based on the synergy of lidars and spectrophotometers** N. Siomos, I. Fountoulakis, F. Gkertsi, K. A. Voudouri, K. Michailidis, K. Garane, D. Karagkiozidis, A. Karanikolas, A. Natsis, A. F. Bais and D. Balis
10:45-11:00	S05O06 Face-to-face	**Dealing with the vertical dimension of extreme pollution episodes** L. Alados-Arboledas, J. Abril-Gago, D. Bermejo-Pantaleón, J. A. Bravo-Aranda, A. Casans-Gabasa, J. A. Casquero-Vera, S. Castillo, A. Cazorla, I. Foyo, M. J. Granados-Muñoz, J. L. Guerrero-Rascado, M.M. Jiménez-Martín, I. López-Lozano, H. Lyamani, F. Navas-Guzmán, F.J. Olmo, D. Pérez-Ramírez, F. Rejano, G. Sánchez-Hernández, G. Titos, A. Valenzuela
11:00-11:15		**COFFEE BREAK**
11:15-12:15		**POSTER SESSION (Session 5)**
12:15-13:00		**DISCUSSION SESSION 5: Open topic – Synergies** All attendants

13:00-13:15	**CONCLUDING REMARKS AND NEXT CONFERENCE**

Poster Session 5

S05P01 Face-to-face	**Analysis of a heavy African dust event in South Europe: synergies between lidar and in-situ measurements** F. Mirza-Montoro, S. Castillo, J. A. Bravo-Aranda, M. J. Granados-Muñoz, D. Bermejo-Pantaleón, J. Abril-Gago, J. L. Guerrero-Rascado, L. Alados-Arboledas and I. S. Stachlewska
S05P02 Online	**Algorithm and software package LIRIC-2 for retrieving aerosol parameters from combined CALIOP and AERONET Sun-radiometer measurements** V. Peshcharankou, A. Chaikovsky and A. Bril
S05P03 Face-to-face	**First characterization of aerosol profiles retrieved from ceilometer and Sun-photometer by the GRASP algorithm at the rural Guadiana-UGR station** A. Bereinkua, D. Pérez-Ramírez, H. Lyamani, A. Cazorla, R. Román, R. González, D. Bermejo-Pantaleón, S. D. Aguirre-García, S. Aranda, P. Cariñanos, M. J. Granados-Muñoz, J. A. Bravo-Aranda, J. Abril-Gago, L. Alados-Arboledas and J. L. Guerrero-Rascado
S05P04 Face-to-face	**Expanding the national facilities for aerosol, clouds and trace gases research infrastructure (ACTRIS-UBB) in Cluj-Napoca, Romania** A. Radovici, A.Ozunu, H. Stefanie, L. Deaconu, C. Botezan, A. Mereuta and N. Ajtai
S05P05 Online	**The TROPOMI/Sentinel-5P aerosol layer height product: a validation approach using the EARLINET database** K. Michailidis, M. E. Koukouli, R. E. Mamouri, M. de Graaf, J. P. Veefkind and D. Balis
S05P06 Online	**Profiling of the anthropogenic aerosols in Europe during the ACTRIS/EARLINET COVID-19 campaign** A. Tsekeri, A. Gialitaki, M. Di Paolantonio, D. Dionisi, G. L. Liberti, A. Fernandes, A. Szkop, A. Pietruczuk, D. Pérez-Ramírez, M. J. Granados-Muñoz, J. L. Guerrero-Rascado, L. Alados-Arboledas, D. Bermejo-Pantaleón, J. A. Bravo-Aranda, E. Marinou, V. Amiridis, A. Comerón, C. Muñoz-Porcar, A. Rodríguez-Gómez, M. Sicard, S. Romano, M. R. Perrone, X. Shang, M. Komppula, R. E. Mamouri, A. Nisantzi, D. Hadjimitsis, F. Navas-Guzmán, A. Haefele, I. S. Stachlewska, D. Szczepanik, R. Fortuna, B. Livio, D. Nicolae, P. Fréville, J. L. Baray, K. Eswaran, K. A. Voudouri, D. Balis, A. Floutsi, H. Baars, L. Miladi, N. Pascal, Q. Hu, P. Goloub, O. Dubovik and A. Lopatin
S05P08 Online	**Geometrical and microphysical properties of clouds formed in dust presence above the Eastern Mediterranean**

	E. Marinou, K. A. Voudouri, I. Tsikoudi, M. Rosoldi, D. Ene and C. Meleti
S05P09 Online	**Lidar-photometer combined retrieval of the aerosol layer types** D. Nicolae, J. Vasilescu, C. Talianu, M. Boldeanu, V. Nicolae and I. Binietoglou
S05P10 Online	**Updates on biomass burning in relationship with vegetation type** M. Adam, K. Fragkos, S. Solomos, L. Belegante, D. Ene, V. Nicolae, L. Janicka and V. Amiridis
S05P11 Online	**A laboratory instrument for optical atmospheric aerosols characterization by linear depolarization ratio** D. Bolaños-Marín, M. Hoyos-Restrepo and E. Montilla-Rosero
S05P12 Face-to-face	**Height-resolved optical and microphysical properties of aged smoke plumes as retrieved from GRASP using both polarized Micro-Pulse Lidar and Sun/sky photometer measurements** M. A. López-Cayuela, M. Herrera, C. Córdoba-Jabonero, D. Pérez-Ramírez, C. V. Carvajal-Pérez, O. Dubovik and J. L. Guerrero-Rascado
S05P13 Face-to-face	**CAECENET: columnar and vertically-resolved aerosol products in near-real-time joining Sun/sky photometer and ceilometer measurement networks** R. Román, R. González, A. Cazorla, M. Herreras-Giralda, J.C. Antuña-Sánchez and C. Toledano
S05P14 Face-to-face	**Vertical profiles of aerosol properties retrieved at La Palma, Canary Islands, during the Cumbre-Vieja volcano eruption in September-October 2021** R. Román, R. González, J. C. Antuña-Sánchez, A. Barreto, P. Martín, C. Toledano, R. Ramos, A. Cazorla, S. Herrero-Anta, D. Mateos, O. García, D. González-Fernández, R. Carracedo, M. Herreras-Giralda, V. Carreño, A. Calle, V. E. Cachorro, E. Cuevas and A. M. de Frutos
S05P15 Face-to-face	**Pollen characterization using AERONET, lidar and Burkard data** M. C. Gatou, E. Giannakaki, X. Shang, S. Bohlmann, V. Gouliaditis and M. Komppula