

Luka Ilić

Recognized Researcher
BARCELONA SUPERCOMPUTING CENTER
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EDUCATION

JULY 2022

PhD, Meteorology, University of Belgrade, Belgrade Serbia
PhD thesis: Modeling of Ice-nucleating Properties of Atmospheric Mineral Dust

OCTOBER 2012

MSc, Meteorology, University of Belgrade, Belgrade Serbia
MSc thesis: Improved wind forecasts for wind power generation using the Eta model andMOS (Model Output Statistics) Method

WORK EXPERIENCE

DECEMBER 2021 – PRESENT

Recognized Researcher

Barcelona Supercomputing Center, Barcelona, Spain

Earth system model development

- Multiscale Online Non-hydrostatic AtmospheRe CHemistry model (MONARCH)
- Mineral dust direct radiative effects

www.bsc.es

JUNE 2013 – NOVEMBER 2021

Research Assistant

Institute of Physics Belgrade, Belgrade, Serbia

- Earth system model development
- Dust Regional Atmospheric Model (DREAM)
- Modeling of Ice Nucleating Properties of Atmospheric Mineral Dust
- Development of Pollen Transport Model
- Aerosol LIDAR measurements in the Framework of EARLINET and ACTRIS

www.ipb.ac.rs

NOVEMBER 2012 - SEPTEMBER 2013

Meteorologist

South East European Virtual Climate Change Centre (SEEVCCC), Belgrade, Serbia

- Model Output Statistics (MOS) for Wind Forecast

www.seevccc.rs

OCTOBER 2007 - JUNE 2013

Meteorologist

South Environment and Weather Agency (SEWA), Belgrade, Serbia

- Operational numerical weather prediction based on GFS, Eta, WRF-NMM models
- Tailored forecast products for road weather and energy sector
- Porting of Eta and WRF-NMM code to SEE-GRID and Maxeler

www.sewa-weather.com

TEACHING

SEPTEMBER 2018 - JUNE 2021

Teacher

International School Savremena, Belgrade, Serbia Cambridge International AS/A Level
Mathematics teacher

<https://eng.savremena-gimnazija.edu.rs/>

PUBLICATIONS

Ničković, S., Petković, S., **Ilić, L.**, Pejanović, G., Mijić, Z., Huete, A., Marks, G., (2022) Prediction of airborne pollen and sub-pollen particles for thunderstorm asthma outbreaks assessment, *Science of The Total Environment*, Volume 864, 2023, 160879, ISSN 0048-9697, <https://doi.org/10.1016/j.scitotenv.2022.160879>

Ilić, L., Jovanović, A., Kuzmanoski, M., Lazić, L., Madonna, F., Rosoldi, M., et al. (2022). Mineralogy sensitive immersion freezing parameterization in DREAM. *Journal of Geophysical Research: Atmospheres*, 127, e2021JD035093. <https://doi.org/10.1029/2021JD035093>

Barreto, Á., Cuevas, E., García, R. D., Carrillo, J., Prospero, J. M., Ilić, L., Basart, S., Berjón, A. J., Marrero, C. L., Hernández, Y., Bustos, J. J., Ničković, S., and Yela, M. (2022) Long-term characterisation of the vertical structure of the Saharan Air Layer over the Canary Islands using lidar and radiosonde profiles: implications for radiative and cloud processes over the subtropical Atlantic Ocean, *Atmos. Chem. Phys.*, 22, 739–763, <https://doi.org/10.5194/acp-22-739-2022>.

Vudragovic, D., **Ilic, L.**, Jovanovic, P., Nickovic, S., Bogojevic, A., and Balaz, A., (2018) VI-SEEM DREAMCLIMATE Service, *Scalable Computing: Practice and Experience*, 19(2), <https://doi.org/10.12694/scpe.v19i2.1396>.

Ilić, L., Kuzmanoski, M., Kolarž, P., Nina, A., Srečković, V., Mijić, Z., Bajčetić, J., Andrić, M., (2018) Changes of atmospheric properties over Belgrade, observed using remote sensing and in situ methods during the partial solar eclipse of 20 March 2015, *Journal of Atmospheric and Solar-Terrestrial Physics*, Volume 171, 2018, Pages 250-259, ISSN 1364-6826, <https://doi.org/10.1016/j.jastp.2017.10.001>.

Granados-Muñoz, M. J., Navas-Guzmán, F., Guerrero-Rascado, J. L., Bravo-Aranda, J. A., Binietoglou, I., Pereira, S. N., Basart, S., Baldasano, J. M., Belegante, L., Chaikovsky, A., Comerón, A., D'Amico, G., Dubovik, O., **Ilic, L.**, Kokkalis, P., Muñoz-Porcar, C., Nickovic, S., Nicolae, D., Olmo, F. J., Papayannis, A., Pappalardo, G., Rodríguez, A., Schepanski, K., Sicard, M., Vukovic, A., Wandinger, U., Dulac, F., and Alados-Arboledas, L. (2016) Profiling of aerosol microphysical properties at several EARLINET/AERONET sites during the July 2012ChArMEX/EMEP campaign, *Atmos. Chem. Phys.*, 16, 7043–7066, <https://doi.org/10.5194/acp-16-7043-2016>.

Lazić, L., Aničić Urošević, M., Mijić, Z., Vuković, G., **Ilić, L.** (2016) Traffic contribution to air pollution in urban street canyons: Integrated application of the OSPM, moss biomonitoring and spectral analysis, *Atmospheric Environment*, Volume 141, 2016, Pages 347-360, ISSN 1352-2310, <https://doi.org/10.1016/j.atmosenv.2016.07.008>.

- Stojic, A., Stanišić Stojic, S., Šoštaric, A., **Ilic, L.**, Mijic, Z., Rajšic, S., (2015) Characterization of VOC sources in an urban area based on PTR-MS measurements and receptor modelling. *Environ Sci Pollut Res* 22, 13137–13152, <https://doi.org/10.1007/s11356-015-4540-5>
- Biniotoglou, I., Basart, S., Alados-Arboledas, L., Amiridis, V., Argyrouli, A., Baars, H., Baldasano, J. M., Balis, D., Belegante, L., Bravo-Aranda, J. A., Burlizzi, P., Carrasco, V., Chaikovskiy, A., Comerón, A., D'Amico, G., Filioglou, M., Granados-Muñoz, M. J., Guerrero-Rascado, J. L., **Ilic, L.**, Kokkalis, P., Maurizi, A., Mona, L., Monti, F., Muñoz-Porcar, C., Nicolae, D., Papayannis, A., Pappalardo, G., Pejanovic, G., Pereira, S. N., Perrone, M. R., Pietruczuk, A., Posyniak, M., Roca-den Bosch, F., Rodríguez-Gómez, A., Sicard, M., Siomos, N., Szkop, A., Terradellas, E., Tsekeri, A., Vukovic, A., Wandinger, U., and Wagner, J. (2015) A methodology for investigating dust model performance using synergistic EARLINET/AERONET dust concentration retrievals, *Atmos. Meas. Tech.*, 8, 3577-3600, <https://doi.org/10.5194/amt-8-3577-2015>
- Papayannis, D. Nicolae, P. Kokkalis, I. Biniotoglou, C. Talianu, L. Belegante, G. Tsaknakis, M.M. Cazacu, I. Vetres, **L. Ilic** (2014) Optical, size and mass properties of mixed type aerosols in Greece and Romania as observed by synergy of lidar and sunphotometers in combination with model simulations: A case study, *Science of the Total Environment* 500–501 (2014) 277–294 <https://doi.org/10.1016/j.scitotenv.2014.08.101>
- Lazić, L., Pejanović, G., Živković, M., **Ilić, L.**, (2014) Improved wind forecasts for wind power generation using the Eta model and MOS (Model Output Statistics) method, *Energy*, Elsevier, vol. 73(C), pages 567-574 <https://doi.org/10.1016/j.energy.2014.06.056>
- Kotroni, V., Floros, E., Lagouvardos, K., Pejanovic, G., **Ilic, L.**, and Zivkovic, M., (2010) Multi-model multi-analysis ensemble weather forecasting on the Grid for the South Eastern Mediterranean Region, *Earth Science Informatics*, 3, 209-218, <http://dx.doi.org/10.1007/s12145-010-0071-2>

CONFERENCES

- Ilić, L.**, Gonçalves, M., Obiso, V., Miller, R. L., Escibano, J., Klose, M., Jorba, O., García-Pando, C., P., (2022) The role of soil mineralogy atlas and iron oxide mixing assumptions upon global and regional dust radiative effects in the MONARCH model, Abstract, A55O-1321 presented at 2022 AGU Fall Meeting, 12-16 Dec.
- Costa-Surós, M., Gonçalves, M., Chatziparaschos, M., Georgakaki, P., **Ilić, L.**, Myriokefalitakis, S., van Noije, T., Kanakidou, M., Nenes, A., García-Pando, C. P. (2022) Dust-sensitive Heterogeneous Ice Nucleation in the EC-Earth3 Earth System Model: comparison with INP observations and radiative effects, Abstract, A54e-10 presented at 2022 AGU Fall Meeting, 12-16 Dec.
- Ilić, L.**, Marinou, E., Jovanović, A., Kuzmanoski, M., and Ničković, S. (2021) Ice nucleating particle concentrations in Dust Regional Atmospheric Model (DREAM) – going one step further, *Geophysical Research Abstracts*, EGU2021-7754, 2020, EGU General Assembly 2021, <https://doi.org/10.5194/egusphere-egu21-7754>
- Ilić, L.**, Cvetković, B., Pejanović, G., Petković, S., Kuzmanoski, M., Ničković, S. (2020) Mineralogy sensitive ice nucleation parameterizations in Dust Regional Atmospheric Model (DREAM), *Geophysical Research Abstracts*, EGU2020-15857, 2020, EGU General Assembly 2020, <https://doi.org/10.5194/egusphere-egu2020-15857>
- Ilić, L.**, Jovanović, A., Kuzmanoski, M., Ničković, S., (2019) Modeling of immersion freezing initiation of mineral dust in dust regional atmospheric model DREAM, The 7th international WeBIOPATR Workshop and Conference, Belgrade
- Ilić, L.**, Cvetković, B., Pejanović, G., Petković, S., Kuzmanoski, M., Ničković, S. (2018) Modeling of mineral composition effects on ice nucleation due to dust in Dust Regional Atmospheric Model (DREAM), *Geophysical Research Abstracts*, Vol. 20, EGU2018-16921, 2018, EGU General Assembly 2018, <https://meetingorganizer.copernicus.org/EGU2018/EGU2018-16921.pdf>

- Cvetković, B., **Ilić, L.**, Madonna, F., Weber, D., Ničković, S., Vuković, A., Pejanović, G., Nikolić, J., Bingemer, H., Vujadinović, M., Đurđević, V. (2018) Modeling heterogeneous ice nucleation due to mineral dust using Dust Regional Atmospheric Model (DREAM-NMME), Geophysical Research Abstracts, Vol. 20, EGU2018-10050, 2018, EGU General Assembly 2018, <https://meetingorganizer.copernicus.org/EGU2018/EGU2018-10050.pdf>
- Ničković, S., Cvetković, B., Pejanović, G., **Ilić, L.**, Madonna, F., Weber, D., Vuković, A., Pejanović, G., Nikolić, J., Petković, S. (2018) Predicting atmospheric dust process from Icelandic soil sources, Geophysical Research Abstracts, Vol. 20, EGU2018-10338, 2018, EGU General Assembly 2018, <https://meetingorganizer.copernicus.org/EGU2018/EGU2018-10338.pdf>
- Vassilis, A., Marinou, E., Tsekeri, A., Solomos, S., Kottas, M., Proestakis, E., Konsta, D., Gkikas, A., Daskalopoulou, V., Tetoni, E., Gialitaki, A., Nicolae, D., Belegante, L., Ene, D., Andrei, S., Carstea, E., Stefanie, H., Dandocsi, A., Komppula, M., Kanakidou, M., Michalopoulos, N., Kalivitis, N., Kouvarakis, G., Rosoldi, M., Pappalardo, G., Campanelli, M., Binietoglou, I., Kazadzis, S., Raptis, P., Ulanowski, J., Tesche, M., Mueller, D., Kezoudi, M., Smith, H., Marenco, F., Balis, D., Voudouri, K., Siomos, N., Nickovic, S., Cvetkovic, B., **Ilić, L.**, Goloub P., Diemoz, H., Aslanoglu, Y., Estelles, V., Basart, S., Eleftheriadis, K., Hloupis, G., Weinzierl, B. (2018) The Pre-TECT campaign - Revealing the secrets of desert dust, ELC, European Lidar Conference
- Kuzmanoski, M., **Ilić, L.**, Mijić, Z., (2017) Aerosol remote sensing study of a Saharan dust intrusion episode in Belgrade, Serbia, XIX International Eco-Conference, September 25-27, Belgrade, Serbia, 73-81
- Ilić, L.**, Cvetković, B., Ničković, S. (2017) Assessment of health effects of exposure to atmospheric mineral dust using the NMME-DREAM model, Earth's climate changes and impacts, Book of Abstracts, p. 67, October 11-13, 2017, Belgrade, Serbia
- Kuzmanoski, M., **Ilić, L.**, Todorović, M., Mijić, Z., (2017) A study of a dust intrusion event over Belgrade, Serbia, The 6th international WeBIOPATR Workshop and Conference, Book of Abstracts, 6-8 September 2017, Belgrade, Serbia, p. 36
- Mijić, Z., **Ilić, L.**, Kuzmanoski, M., (2017) Raman lidar for atmospheric aerosol profiling in Serbia, 49th International October Conference on Mining and Metallurgy, Proceedings, pp.65-68, October 18-21, 2017. Bor Lake, Serbia
- Mijić, Z., **Ilić, L.**, Kuzmanoski, M. (2017) Vertical Raman LIDAR profiling of atmospheric aerosol optical properties over Belgrade, PHOTONICA 2017, Book of Abstracts, p. 210, August 28 - September 1, 2017, Belgrade, Serbia.
- Mijić Z., Perišić, M., Stojić, A., Kuzmanoski, M., **Ilić, L.**, (2017) Estimation of atmospheric aerosol transport by ground-based remote sensing and modeling, XIX International Eco-Conference, September 25-27, 2017, Belgrade, Serbia, 375-382.
- Kuzmanoski, M., Ničković, S., **Ilić, L.**, (2016) Spatial distribution of mineral dust single scattering albedo based on DREAM model, Geophysical Research Abstracts, Vol. 20, EGU2016-4425, 2016, EGU General Assembly 2016, <https://meetingorganizer.copernicus.org/EGU2016/EGU2016-4425.pdf>
- Ilić, L.**, Kuzmanoski, M., Mijić, Z., (2015) Planetary Boundary Layer and Elevated Aerosol Layer Height Retrieval from Lidar Signal in Belgrade, 5th International WeBIOPATR Workshop & Conference Particulate Matter: Research and Management, October 14-16, 2015, Belgrade, Serbia, 77-84

GUEST PRESENTATIONS

Klimatske promjene - koliko je čovjek pokvario svijet? (Climate Change – How Much Have Humans Affected the Planet?) Presentation at The Seventh Symposium Theology in the Public Sphere, Trebinje, Bosnia and Herzegovina, February, 2020.

Presentation of my PhD project, Computational Research of Young Talents in Serbia, The Milanković Day event, Mathematical Institute of the Serbian Academy of Sciences and Arts, May 28th, 2019.

Presentation on parameterization of dust-induced ice nuclei concentration in DREAM model. The talk was organized at Prof. Jennifer Kay's Polar and atmospheric science group meeting, at the Department of Atmospheric and Oceanic Sciences, University of Colorado at Boulder, July 5th, 2017.

Presentation on dust modeling using DREAM model at Prof. Ulrike Lohmann's Atmospheric Physics Group Seminar at Institute for Atmospheric and Climate Science, ETH Zurich on November 26, 2016.