

Ádám Leelőssy

Meteorologist, assistant research fellow

Summary

A PhD candidate in atmospheric chemistry and transport modelling at ELTE University, Budapest, Hungary. My main interest is the modelling of atmospheric transport processes and air quality on different scales.

Education

PhD candidate at the Doctoral School of Geosciences
Eötvös Loránd University, Budapest, Hungary, 2015 –

PhD student at the Doctoral School of Geosciences
Eötvös Loránd University, Budapest, Hungary, 2012–2015
Research topic: Development and application of a model system to predict atmospheric concentration of air pollutants

MSc in Meteorology
Eötvös Loránd University, Budapest, Hungary, 2012
MSc thesis: Local scale modelling of atmospheric dispersion of pollutants from an accidental release

BSc in Physics
Eötvös Loránd University, Budapest, Hungary, 2010

Research experience

Assistant research fellow at ELTE University, Budapest (since 2015)

Participation in project EFOP-1.8.0: *Methodological development of the health care system, pollen forecasting group* (since 2017)

Participation in research project OTKA 116506: *Development of the components of an atmospheric dispersion model system* (since 2015)

Participation in research project OTKA 109361: *Analyses of the interactions between local air pollution and urban vegetation by in situ measurements and model simulations* (since 2013)

Application and development of atmospheric dispersion models on different scales

Development of plume and trajectory models for nuclear risk assessment

Meteorological data processing and analysis

Teaching experience

Instructor of *Atmospheric chemistry, Synoptic meteorology* and *Computer simulation* courses at ELTE University, Budapest (since 2012)

Instructor of *Introduction to hydrodynamics* course at PPCU University, Budapest (2011–2016)

Thesis supervisor for graduate and undergraduate students in Meteorology, Environmental and Geosciences (since 2013)

Co-writer of *Atmospheric Chemistry* e-book (2013) and lecture notes in *Synoptic meteorology* (2016)

Short courses

Advances in Air Quality Analysis and Prediction: The Interaction of Science and Policy, NCAR Advanced Study Program Summer Colloquium, Boulder, Colorado, 2016 (2 weeks)

First Educational Symposium on Radiation and Health by Young Scientists (ESRAH), Hirosaki University, Japan, 2014 (1 week)

Online Integrated Modelling of Meteorological and Chemical Transport Processes, Young Scientist Summer School, COST Action ES1004, University of Aveiro, Portugal, 2014 (1 week)

European Research Course on Atmospheres (ERCA), Grenoble, France, 2014 (5 weeks)

Kovacs Language Bursary Program, University of Regina, Canada, 2006 (8 weeks)

Language and software skills

Languages: English – professional working proficiency
French – basic knowledge

Programming languages: Python, C, MATLAB/Octave, Fortran, bash

Awards and scholarships

Scholarship of the New National Excellence Program of the Hungarian Ministry of Human Capacities (2016-2017)

Secretary of the Youth Section of the Hungarian Meteorological Society (2012–)

Alfréd Hille Award, Hungarian Meteorological Society, 2012
“For the best thesis of the year in meteorology”

Hungarian Students’ Conference on Environmental Studies, 1st Prize, 2012

Scholarship of the Hungarian Republic, 2011-2012

Excellent Student of the Faculty, 2011
Faculty of Science, Eötvös Loránd University

National Scientific Students’ Association Conference, 3rd Prize, 2011

Publications in peer-reviewed journals:

1. Leelőssy Á., Lagzi I., Kovács A., Mészáros R., 2018: A review of numerical models to predict the atmospheric dispersion of radionuclides, *Journal of Environmental Radioactivity*, 182, 20-33.
2. Leelőssy Á., Lagzi I., Mészáros R., 2017: Spatial and temporal pattern of pollutants dispersed in the atmosphere from the Budapest Chemical Works industrial site, *Időjárás*, 121(2), 101-115.
3. Leelőssy Á., Mészáros R., Kovács A., Lagzi I., Kovács T., 2017: Numerical simulations of atmospheric dispersion of iodine-131 by different models, *PLoS ONE*, 12(2), e0172312, doi:10.1371/journal.pone.0172312
4. Leelőssy Á., Holló G., Suzuno K., Ueyama D., Lagzi I., 2016: Numerical Simulation of Maze Solving Using Chemotactic Particles, *International Journal of Unconventional Computing*, 12(5-6), 439-452.
5. Mészáros R., Leelőssy Á., Kovács T., Lagzi I., 2016: Predictability of the dispersion of Fukushima-derived radionuclides and their homogenization in the atmosphere, *Scientific Reports*, doi:10.1038/srep19915
6. Leelőssy Á., Molnár F., Izsák F., Havasi Á., Mészáros R., Lagzi I., 2014: Dispersion modelling of air pollutants: a review, *Central European Journal of Geosciences*, 6(3), 257-278.
7. Leelőssy Á., Ludányi E.L., Kohlmann M., Lagzi I., Mészáros R., 2013: Comparison of two Lagrangian dispersion models: a case study for the chemical accident in Rouen, 21-22 January 2013, *Időjárás*, 117(4), 435-450.
8. Mészáros R., Leelőssy Á., Vincze Cs., Szűcs M., Kovács T., Lagzi I., 2012: Estimation of the dispersion of radionuclides and toxic materials based on weather type classification, *Theoretical and Applied Climatology*, 107(3-4): 375-387.
9. Leelőssy Á., Mészáros R., Lagzi I., 2011: Short and long term dispersion patterns of radionuclides in the atmosphere around the Fukushima Nuclear Power Plant, *Journal of Environmental Radioactivity*, 102(12): 1117-1121.

Conference publications:

1. Magyar D., Mányoki G., Csépe Z., Kajtor-Apatini D., Udvardy O., Leelőssy Á., Fejős Á., Páldy A., Pándics T., Szigeti T., 2017: Meeting new challenges of personalized information for allergenic patients in Hungary – introduction to a nationwide survey, *Palynology-Aerobiology-Allergy Symposium*, Vienna, Austria
2. Lagzi I., Leelőssy Á., Mészáros R., Göndöcs J., 2017: Autoregressive temperature and air quality prediction in Budapest in the winter of 2016-2017, *EMS Annual Meeting Abstracts 14*, EMS2017-530
3. Kovács A., Leelőssy Á., Lagzi I., Mészáros R., 2017: Modeling urban air pollution in Budapest using WRF-Chem model, *Geophysical Research Abstracts 19*, EGU2017-1461

4. Mészáros R., Leelőssy Á., Csapó P., Boda B., Kovács A., Lagzi I., 2016: Monitoring of atmospheric trace gases in Budapest by mobile measurements, *EMS Annual Meeting Abstracts* 13, EMS2016-501
5. Leelőssy Á., Dezső Zs., Mona T., Zsilinszki A., Merics A., 2016: Project-based learning: interactive weather forecast laboratory at the Eötvös Loránd University, Budapest, *EMS Annual Meeting Abstracts* 13, EMS2016-652
6. Kovács A., Mészáros R., Leelőssy Á., Lagzi I., 2016: Air pollution modeling in urban environment using WRF-Chem model, *17th International Conference on Harmonization within Atmospheric Dispersion Modelling for Regulatory Purposes*, Budapest, Hungary
7. Leelőssy Á., Kovács A., Lagzi I., Mészáros R., Kovács T., 2016: Simulation of dispersion of radionuclides in the atmosphere from regional to global scale, *V. Terrestrial radioisotopes in the environment: International Conference on Environment Protection*, Veszprém, Hungary
8. Leelőssy Á., Mona T., Mészáros R., Lagzi I., Havasi Á., 2016: Eulerian and Lagrangian Approaches for Modelling of Air Quality, *Mathematical Problems in Meteorological Modelling workshop*, Budapest, Hungary
9. Hrotkó K., Steiner M., Forrai M., Tóth E.G., Vértesy M., Leelőssy Á., Kardos L., Sütöriné D.M., Magyar L., Mészáros R., 2014: Investigations on environmental benefits of urban trees at Corvinus University of Budapest, *Plants in Urban Areas and Landscape*, Nitra, Slovakia
10. Mészáros R., Leelőssy Á., Lagzi I., Kovács T., 2014: Numerical simulations of atmospheric dispersion of iodine-131 emitted from a point source, *The 9th International Symposium on the Natural Radiation Environment (NRE-9)*, Hiroasaki, Japan
11. Kovács T., Lagzi I., Leelőssy Á., Mészáros R., 2012: Simulations of Atmospheric Dispersion from Point Sources, *II. Terrestrial radioisotopes in environment: International Conference on Environment Protection*, Veszprém, Hungary
12. Leelőssy Á., Lagzi I., Mészáros R., 2012: Sensitivity study of OpenFOAM model for local scale atmospheric dispersion simulations, *Geophysical Research Abstracts* 14, EGU2012-11925
13. Leelőssy Á., Lagzi I., Mészáros R., 2011: Local scale statistical analysis of the accidental release from Fukushima Nuclear Power Plant, *EMS Annual Meeting Abstracts* 8, EMS2011-735
14. Leelőssy Á., Mészáros R., Lagzi I., Kovács T., 2011: Statistical application of ALOHA local scale air dispersion model for non-radioactive accidental releases at Paks Nuclear Power Plant, *Geophysical Research Abstracts* 13, EGU2011-10578
15. Mészáros R., Lagzi I., Molnár F., Vincze Cs., Leelőssy Á., Kovács T., 2010: Modelling dispersion process of hypothetical nuclear accident release on different scales, *EMS Annual Meeting Abstracts* 7, EMS2010-450

Educational materials:

1. Breuer H., Dezső Zs., Leelőssy Á., 2016: Synoptic meteorology lecture notes, Eötvös Loránd University

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2. Lagzi I.L., Mészáros R., Gelybó Gy., Leelőssy Á., 2013: Atmospheric Chemistry, e-book, Eötvös Loránd University