The 8th International Workshop on Biomonitoring of Atmospheric Pollution (BIOMAP 8)

Dubna, July 2 – 7, 2018

Programme & Abstracts

Dubna • 2018

http://www.biomap-international.com
http://indico.jinr.ru/event/biomap8

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Organizers:

Programme comittee

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Konstantin Vergel
Nikita Yushin
Pavel Nekhoroshkov
Gergana Hristozova
Julia Aleksiayenak

PROGRAMME

Monday 2nd July, 2018

16:00 – 19:00 Registration (Hotel "Dubna")

Tuesday 3d July, 2018

08:30 Late registration and putting up posters (International Conference Hall)

09:30 – 11:00 Plenary session **Chair: *Marina Frontasyeva***

09:30 Welcome address – JINR Director, Academician *Victor A. Matveev*

09:50 Welcome address – *Bert Wolterbeek*

10:00 *Sergey Gromov* – Global air pollution

10:40 – 11:00 Conference photo

11:00 – 11:30 Coffee/tea and poster viewing

11:30 – 12:50 Plenary session **Chair: *Sergey Gromov***

11:30 *Danas Ridikas et al.* – Support of IAEA to studies related to atmospheric pollution: Past and present projects

12:10 *Marina Frontasyeva et al.* – Twenty five years (1990 – 2015) of European moss surveys: trends and remaining hotspots for heavy metals and nitrogen

12:50 – 15:00 Lunch and poster viewing

15:00 – 16:00 Session 1 **Chair: *Sergey Gromov***

15:00 *Ole William Purvis et al.* – Element signatures and lichens: a historical perspective in air pollution studies

15:20 *Bruno Vieira et al.* – Lichens as biomonitors of long-range transported trace elements under different altitudes and different air mass influences

15:40 *Eiliv Steinnes et al.* – Monitoring atmospheric deposition of organic pollutants in Norway using terrestrial moss

16:00 – 16:30 Coffee/tea and poster viewing

16:30 – 17:50 Session 2 **Chair: *Richard Hoover***

16:30 *Elva Cecconi et al.* – Background element content of the lichen *Pseudevernia furfuracea*: a comprehensive overview. From the supranational state of art to a new methodological framework for the assessment of regional benchmarks

16:50 *Edyta Łokas et al.* – High airborne radioactivity in terrestrial environments of arctic region

17:10 *Gergana Hristozova et al*. – Atmospheric deposition studies in Bulgaria based on moss biomonitors, neutron activation analysis and inductively coupled plasma atomic emission spectroscopy

17:30 *Omar Chaligava et al.* – Distribution of major and trace element atmospheric deposition in Georgia (2014-2017 moss survey)

19:00 – 21:00 Welcome party

Wednesday 4th July, 2018

Plenary session: 9:00 – 11:00 **Chair: *Danas Ridikas***

09:00 *Ilia Ilyin*– Assessment of transboundary atmospheric pollution by heavy metals in the EMEP region using biomonitoring information and modelling results

09:40 *Alexander Bolsunovsky et al.* – Monitoring sources of radioactive contamination of the environment based on pine tree analysis

10:20 *Boris Revich*– Particulate matter, heat waves and wildfires as risk for health

11:00 – 11:30 Coffee/tea and poster viewing

11:30 – 12:50 Session 3 **Chair: *Ilia Ilyin***

11:30 *Bernd Markert et al.* – Bioindication and biomonitoring (B & B) technologies with special consideration of lithium and its effects on human

11:50 *Slavisa Popovic et al.* – Development of ecosystem data base in Serbia

12:10 *Murty P.V.S. Prabhakara et al.* – Personal exposure monitoring of air pollution – priorities and challenges

12.30 *Ilija Arsenic et al.* – Kolmogorov complexity of heavy metals and radionuclide's spatial distribution

12:50 – 14.30 Lunch and poster viewing

14:30 – 16:00 Session 4 **Chair: *Steinnes Eiliv***

14:30 *Yulia Aleksiayenak et al.* – Biomonitoring study of trace elements atmospheric deposition in Belarus

14:50 *Sabina Dołęgowska*– Uncertainty of selected steps of moss sample analyses for trace elements

15:10 *Pranvera Lazo et al.* – Combination of naturally growing bryophyte moss biomonitoring, instrumental analyses, statistical analysis and GIS technique for evaluating trace elements atmospheric deposition – 2010, 2015 moss biomonitoring in Albania

15:30 *Claudia Stihi et al.* – Survey of heavy metal deposition in Romania; temporal trends and spatial distribution: 2010 and 2015

15:50 *Gevorg Tepanosyan et al.*– Atmospheric deposition of iodine and potential sources in Armenia

16:10 – 16:30 Coffee/tea and poster viewing

16:30 – 17:30 Session 5 **Chair: *Lazo Pranvera***

16:30 *Zbigniew Ziembik et al.* – Biomonitoring of heavy-metal contamination of forest areas in Southern and North-eastern Poland using moss

16:50 *Maria Zielińska et al.* – The use of *Pleurozium schreberi* in biomonitoring of the forest areas of Southern and North-eastern Poland

17:10 *Dinesh K. Saxena*– Mapping seasonal atmospheric metal precipitation of last 15 years from India using active moss approach

19:00– 20:30 Concert (The Boys' Choral School "Dubna")

Thursday 5th July, 2018

Plenary session: 9:00 – 11:00 **Chair: *Bernd Markert***

09:00 *Roeland Samson* – Biomonitoring of particulate matter

09:40 *Richard Hoover et al.* – Cosmic Dust in the Earth's Atmosphere

10:20 *Oldřich Motyka* – Nanoparticle pollution and bryophytes – possibilities

10:40 *Rainer Schenk*– The dispersion model for air pollutants AUSTAL2000 understands deposition as loss and not storage

11:00 – 11:30 Coffee/tea and poster viewing

11:30 – 12:50 Session 6 **Chair: *Samson Roeland***

11:30 *Ana Castanheiro* – The PMF project; towards biomagnetic monitoring for source attribution of urban PM and associated early-health effects

12:00 *Aničić Urošević et al.* – Moss bag biomonitoring of air pollution: urban vs. *Mira* agricultural scenario

12:30 *Valeria Spagnuolo et al.* – A novel approach using moss bags to explore indoor vs outdoor elemental pollution sources

13:00 – 15.00 Lunch and poster viewing

15:00 – 16:00 Session 7 **Chair: *Mira Aničić Urošević***

15:00 *Tijana Milićević et al.* – The grapevine leaves as bioindicators of air pollution by toxic elements and magnetic particles in experimental, commercial and organic vineyards

15:20 *Inga Zinicovscaia*– Active moss biomonitoring of trace elements with *Sphagnum girgensohnii* in relation to atmospheric bulk deposition: Chisinau case study

15:40 *Miodrag Krmar et al.* – Additional view in the moss technique by employing of some simple statistics

16:00 – 16:30 Coffee/tea, taking down posters

16:30 – 18:00 Session 8 **Chair: *Alexander Bolsunovsky***

16:30 *Alexandra Ioannidou et al.* – Activity size distribution of radioactive ^{7}Be aerosols at different environments in Northern Italy

16:50 *Silvana Munzi et al.* – $^{\delta 15}$N in lichens reflects the isotopic signature of ammonia source

17:10 *Önder Kılıç et al.* – Determination of ^{210}Po and ^{210}Pb by moss monitoring technique in Thrace region of Turkey

17:30 – 18:00 Closing procedure

19:00 Conference Dinner

Friday 6th July, 2018

07:30 Excursion to Moscow by bus. Participants may either return to Dubna or stay in a hotel in Moscow or take a late flight on Friday.

List of Abstracts of Oral Presentations

Steinnes E., Uggerud H.T. Schlabach M. *Monitoring atmospheric deposition of organic pollutants in Norway using terrestrial moss* ***45***

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Zielińska M., Kłos A., Bochenek Z., Bjerke J.W., Tømmervik H., Zagajewski B., Ziółkowski D., Rajfur M., Dołhańczuk-Śródka A., Ziembik Z. *The use of Pleurozium schreberi in biomonitoring of the forest areas of Southern and North-eastern Poland* ***49***

Ziembik Z., Kłos A., Rajfur M., Dołhańczuk-Śródka A. *Biomonitoring of heavy-metal contamination of forest areas in Southern and North-eastern Poland using moss* ***50***

Zinicovscaia I. *Active moss biomonitoring of trace elements with Sphagnum girgensohnii in relation to atmospheric bulk deposition: Chisinau case study* ***51***

List of Abstracts of Poster Presentations

MOSS MONITORING OF TRACE ELEMENTS IN THE REPUBLIC OF UDMURTIA, RUSSIA

Bukharina I.L[1]., Zhuravleva A.N.[1], Volkov N.A.[1], Vasileva N.A.[1], Bakuleva Y.A. [1], Plotnikova K.V. [1], Frontasyeva M.V.[2]

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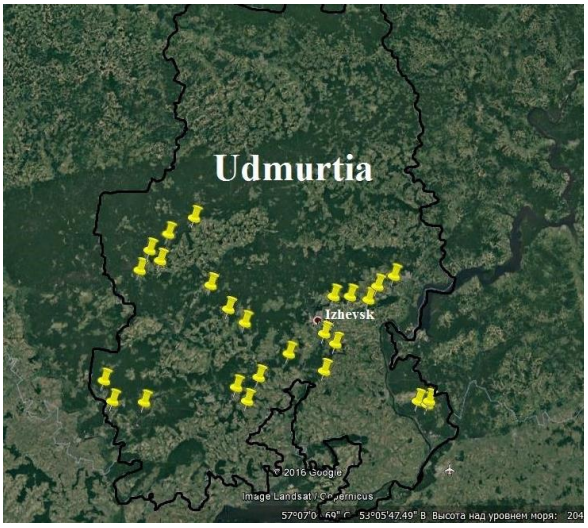
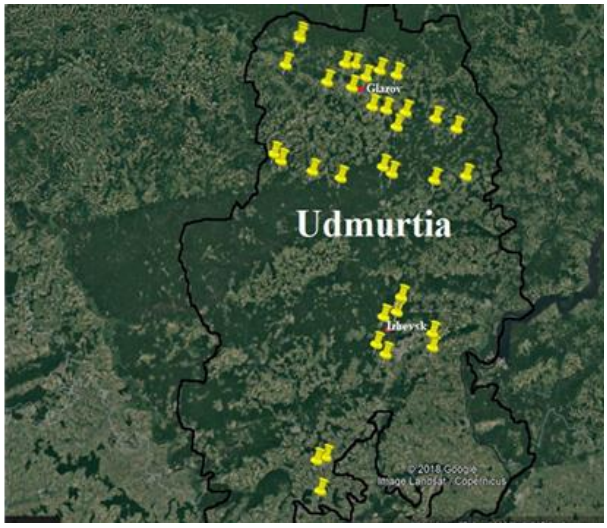
Results on atmospheric deposition of trace elements in the moss survey in 2016-2017 in the Republic of Udmurtia, Russia, are reported. Udmurtia is an industrial region allocated in the east of the East-European Plain, where it goes to the Western Urals. An important role in its economy belongs to enterprises of the military-industrial complex, machine tools and automotive, building materials and mining. Samples of moss were collected over the territory Republic in accordance with the guidelines of the Moss Manual 2015/2016 of the UNECE ICP Vegetation. Coordinates of the sampling sites were very close to those used in the first moss survey in Udmurtia carried out in 2005-2006 (Pankratova et al., 2007, 2008). Conducted research to Supplement and expand the information charges of the samples of moss that were conducted in 2005 and 2006 and 2016 (Pankratova et al, 2007, Bukharin, etc., 2017).A total of 39 elements were determined by neutron-activation analysis and atomic absorption spectrometry (Pb, Cd, and Cu). Multivariate statistics (factor analysis) and geochemical mapping were applied for data interpretation.



Moss monitoring network in Udmurtia, Wester Urals, in 2016



Moss monitoring network in Udmurtia, Wester Urals, in 2017

Reference

Yu.S. Pankratova, M.V. Frontasyeva, A.A. Berdnikov, and S.S. Pavlov. Air pollution studies in the Republic of Udmurtia, Russian Federation, using moss biomonitoring and INAA. In *Nuclear Physics Methods and Accelerators in Biology and Medicine-2007*", Edts: C. Granja, C. Leroy, I. Stekl, AIP Conference Proceedings, Vol. 958, American Institute of Physics, New York, 2007, p. 236-237; http://www1.jinr.ru/Preprints/2008/096(P18-2008-96).pdf