



**Centre for  
Ecology & Hydrology**

NATURAL ENVIRONMENT RESEARCH COUNCIL



## **31<sup>st</sup> Task Force Meeting**

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**Dessau-Roßlau, Germany**



# **Programme & Abstracts**



**Organizers:**

**ICP Vegetation Programme Coordination Centre**  
**Centre for Ecology & Hydrology**  
**Bangor, UK**

*Dr. Harry Harmens*  
*Prof. Gina Mills*

**Local organizers:**

*Prof. Ludger Grünhage (Justus-Liebig-University Giessen)*  
*Dr. Jürgen Bender (Thünen Institute of Biodiversity)*  
*Gudrun Schütze (German Environment Agency)*

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the German Environment Agency**



# LIST OF POSTERS

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Baumgarten M., Grünhage L.	Ozone Risk for Trees – phytotoxic ozone dose and future effects on tree growth in Germany
Danh N.T., Oanh N.T.K.	Assessment of surface ozone effects on rice production in Southern Vietnam for possible alternative cropping systems
Drapikowska M., Borowiak K., Pagórek C., Lisiak M., Byczkowska K., Drapikowski P.	Image based estimation of anatomical ozone injury responses of <i>Nicotiana tabacum</i> L.
Gerosa G., Finco A., Marzuoli R., Chiesa M.	15 years of measurements of ozone deposition fluxes over forests, crops and bare soils in Italy
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Sicard P., Anav A., De Marco A., Paoletti E.	Projected global tropospheric ozone impacts on vegetation under different emission and climate scenarios
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## MOSS SURVEY

Author(s)	Title
Allajbeu Sh., Bekteshi L., Qarri F., Kane S., Lazo P., Stafilov T.	Distribution of trace elements influence from sea coastal line by using moss biomonitoring
Aničić Urošević M., Vuković G., Vasić P., Jakšić T., Nikolić D., Škrivanj S., Popović A.	Environmental implication indices by elemental characterisation of the co-located topsoil and moss samples
Aslani M.A.A., Hacıyakupoglu S., Belivermis M., Kılıç O., İleri R.K., Erenturk S.	Atmospheric deposition of radionuclides by moss biomonitoring technique in Thrace region of Turkey
Borowiak K., Lisiak M., Budka A., Kanclerz J., Janicka E., Adamska A., Żyromski A., Biniak-Pieróg M., Podawca K., Mieczek M., Niedzielski P.	Rare earth elements in <i>Taraxacum officinale</i> collected in three different cities
Budka A., Mieczek P., Borowiak K., Niedzielski P.	Relationship between concentration of rare earth elements in soil and their distribution in plants growing near a busy road
Bukharina I.L., Zhuravleva A.N., Volkov N.A., Vasileva N.A., Bakuleva Y.A., Plotnikova K.V., Frontasyeva M.V.	Moss monitoring of trace elements in the Republic of Udmurtia, Russia
Chaligava O., Shetekauri S., Shetekauri T., Kvilidze A., Kalabegishvili T., Frontasyeva M.V., Chepurchenko O.E., Tselmovich V.A.	Atmospheric deposition study of major and trace elements by the moss biomonitoring technique in Georgia: 2014–2016
Ene A., Stihl C., Frontasyeva M., Radulescu C., Iacoban I.	Spatial distribution of heavy metals and nitrogen deposition in Romania based on moss analysis in 2015
Fettig, I., Horvat, M., de Krom, I., Douglas, D., Rajamaki, T.	MERCOCX – Metrology for oxidised mercury
Fränzle S., Retschke D., Erler M., Blind F.	Chitin-covered sorbent slides for acquiring data on air- or waterborne pollution, subterranean biochemical activities and secondary contributions to climate change
Godyń P., Zielińska M., Ziembik Z., Dolhańczuk-Śródka A.	Concentrations of natural radioactive gamma isotopes in <i>Pleurozium schreberi</i> moss
Gorelova S.V., Frontasyeva M.V., Vergel K.N., Babicheva D.E., Ignatova T.Yu.	Moss monitoring of atmospheric deposition in Central Russia: Tula region (2015-2016)
Hacıyakupoglu S., Erenturk S.	Atmospheric deposition of major and trace elements by moss biomonitoring technique in Northwest of Turkey
Hacıyakupoglu S., Genceļi E., Erenturk S.	Atmospheric nitrogen deposition in moss samples in Northwest of Turkey
Koroleva Y., Zhurilo D., Ananyan A., Sokhar L., Zegalina L.	Active monitoring of air pollution in the historic area of the city Kaliningrad using Sphagnum mosses
Lisiak M., Borowiak K., Budka A., Kanclerz J., Janicka E., Adamska A., Żyromski A., Biniak-Pieróg M., Podawca K., Mieczek M., Niedzielski P.	Relations between land use structure and rare earth elements concentrations in plants
Maňkóvská B., Oszlányi, J., Izakovičová, Z., Frontasyeva, M.	Trends of heavy metal accumulation in mosses in Slovakia (1990-2015)
Nurgaliyeva D.Zh., Nurkassimova M.U., Makhambet A., Omarova N.M., Glushenko V.N., Solodukhin V.P., Frontasyeva M.V., Chepurchenko O.	Atmospheric deposition of trace elements in Kazakhstan
Nurgaliyeva D.Zh., Nurkassimova M.U., Omarova N.M., Dalelova A.M., Frontasyeva M.V., Morzhuhina S.V.	Atmospheric depositions of heavy metals and radionuclides in Lrytsh areas of Kazakhstan
Qarri F., Lazo P., Allajbeu Sh., Bekteshi L., Stafilov T.	Trends of atmospheric deposition of trace elements in Albania studied by the moss biomonitoring technique.
Radulescu C., Bintintan A., Gligor M., Ion R.M., Dulama I.D., Stihl C., Teodorescu S., Stîrbescu R.M.	Pollution effects on painted pottery of Romanian cultural heritage
Salahova S.Z., Topchiyeva Sh.A., Mehrabova M.A., Humbatov F.Y.	State of atmospheric air in different territories of Azerbaijan
Saxena D.K., Karuna M.S.	Atmospheric lead deposition during 2011-2014: estimation based on moss analysis
Schröder W., Nickel S.	Geostatistically mapping spatial structures of measurement values and percentile statistics of heavy metals and nitrogen accumulation in mosses sampled 1990-2015
Steinnes E., Uggerud H.T.	Metal pollution around Norwegian industries studied by analysis of natural growing moss samples
Stihl C., Ene A., Frontasyeva M., Radulescu C., Culicov O., Zinicovscaia I.	Temporal trends of heavy metal concentrations in mosses collected from Romania in 2010 and 2015
Thöni L., Strok M., Mazej D., Schnyder E., Kosonen Z., Jeran Z., Skudnik, M.	Lead concentration and stable lead isotopes in moss in Slovenia and Switzerland
Vergel K.N., Frontasyeva M.V., Zinicovscaia I.I., Vikhrova I.M., Strelkova L.P.	Biomonitoring of heavy metals and trace elements in North Russia: Tikhvin case study 2017
Vuković G., Aničić Urošević M., Herceg Romanić S., Mendaš Starčević G., Ilić M., Milčević T., Frontasyeva, M.V.	Organochlorine pesticides and polychlorinated biphenyls in the moss <i>Hypnum cupressiforme</i> and topsoil sampled in Serbia
Zia A., Ahmad M.N.	Atmospheric nitrogen induced heavy metal leaching

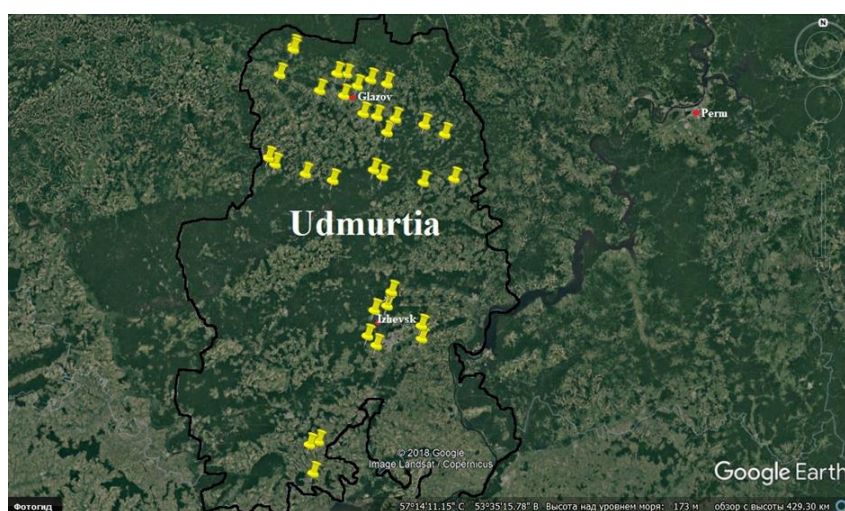
## MOSS MONITORING OF TRACE ELEMENTS IN THE REPUBLIC OF UDMURTIA, RUSSIA

Bukharina I.L.<sup>1</sup>., Zhuravleva A.N.<sup>1</sup>, Volkov N.A.<sup>1</sup>, Vasileva N.A.<sup>1</sup>, Bakuleva Y.A.<sup>1</sup>, Plotnikova K.V.<sup>1</sup>, Frontasyeva M.V.<sup>2</sup>

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The results on atmospheric deposition of trace elements in the moss survey in the summer of 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 of the 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 supplements the information on the moss surveys in Udmurtia in 2005, 2006 and 2016 (Pankratova et al, 2007, Bukharina, 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 2017

### References:

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](http://www1.jinr.ru/Preprints/2008/096(P18-2008-96).pdf)  
I.L. Bukharina, A.N. Zhuravleva, N.A. Volkov, N.A. Vasileva, M.S. Shvetsova, M.V. Frontasyeva Moss monitoring of trace elements in the Republic of Udmurtia, Russia // ICP Vegetation 30th Task Force Meeting : 14th-17th February 2017, Poznan, Poland : Programme & Abstracts / ICP Vegetation Programme Coordination Centre, Centre for Ecology & Hydrology. Poznan, 2017. - P. 58.