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**17.01.22 – 21.01.2022**

**Day 1 17.01.22 Arctic, Climate, Cities**

**9:30:-10:00 Registration, Small talks with participants**

**10:00 - 10:15 Welcome talk Sergey A. Dobrolyubov, Member of Russian Academy of Sciences, Dean of Faculty of Geography, MSU, Russia**

**10:15 - 11:00 Lecture: Arctic Climate Change Member of Russian Academy of Sciences, Vladimir Semenov, A.M. Obukhov IAP, Russia**

**11:00 - 11:20 Lecture: «Two hundred years of urban climate research: history and modern challenges» Gerard Mills, UCD, Ireland**

**11:20 - 12:00 Lecture: «Surface UHI research in Arctic» Igor Esau, University of Tromso, Norway**

**Lunch / Breakfast/ break 12:30 - 14:00**

**14:00 - 15:00 Self-introduction of Students and Instructors (3 min per each)**

**15:00 - 15:45 Online Presentation from Laboratory of Northern Lights "Space Weather out the door!" Jaroslav Sakharov, KSC, Russia**

**16:00 -17:00 Practice: Linux basics: bash commands and scripting. NetCDF files: NCO package Vladimir Platonov MSU Russia**

**Day 2 18.01.22 Arctic, Climate, Modeling**

**10:00 - 10:10 Welcome remarks from Nature-based-solutions-climate-sensitive-urban-design-training-school**, Dragan Milosevic, Serbia

**10:15 - 11:00 Lecture: Earth system models hierarchy** Alexey Eliseev, A.M. Obukhov IAP, Russia

**11:00 - 12:00 Lecture: Urban Air quality: measuring and modeling** Alexander Baklanov WMO, Switzerland

**12:00 - 12:20 Lecture: Urban Climate research in Arctic** Pavel Konstantinov MSU, Russia

**Lunch / Breakfast/ break 12:30 - 14:00**

**14:00 -15:00 Practice: Introduction to Python. How to work with geo-data** Pavel Shabanov IO RAS Russia + Alen Kospanov MSU Russia

**15:00 -16:00 Practice: MATLAB elements and its applications in atmospheric data processing and visualization.** Vladimir Platonov MSU Russia

**16:00 -17:00 Practice: Arctic regional reanalyses and hindcasts. Reinterpolation of gridded datasets using MATLAB** Irina Zheleznova MSU Russia

**Day 3 19.01.22 Arctic, Urban, Ecology**

**9:50 - 10:00 Welcome remarks from SUMMER SCHOOL**

**ANTHROPOGENIC AND NATURAL SOIL LANDSCAPES IN EUROPEAN RUSSIA,**  
Anastasia Konstantinova, RUDN, RUSSIA

**10:00 - 10:45 Lecture: Changing environment and infectious diseases in the Arctic** Varvara Mironova MSU, Russia

**10:45 - 11:15 Lecture: Creation of phenological network in Russia,** Anton Iurmanov, RGO, Russia

**11:15 - 12:00 Lecture: Microbiological urban researches + Urban Greening in the Murmansk region** Maria Korneykova RUDN, Russia; Marina Slukovskaja KSC, Russia

**11:45 - 12:30 Lecture: Modern view on Urban Ecology** Viacheslav Vasenev, RUDN, Russia

**Lunch / Breakfast/ break 12:30 - 14:00**

**14:00 -15:00 Practice: Introduction to QGIS. How to make a map** Andrey Karpachevskiy MSU Russia

**15:00 -16:00 Practice: Introduction to R: Spatiotemporal Analysis and Mapping** Timofey Samsonov, MSU Russia

**Day 4 20.01.22 Arctic, Thermal Comfort, Cryology**

**9:00- 9:50 Lecture: Cryosphere and Risks** Sergey Sokratov, MSU, Russia

**9:50 - 10:00 Welcome remarks from CITES School for young Scientists** , Yulia Gordova, SCERT, Russia

**10:00 - 10:30 Lecture: Drone Sounding in Polar boundary Layer** Mikhail Varentsov, MSU, Russia

**10:30 - 11:00 Lecture: Severe convective events and long-term changes of convective activity in the Arctic and Northern Eurasia**, Alexander Chernokulsky, A.M.Obukhov IAP, Russia

**11:00 - 12:00 Lecture: Intoduction to Thermal Comfort Studies**, Andreas Matzarakis, DWD Germany

**Lunch / Breakfast/ break 12:30 - 14:00**

**14:00 -15:00 Practice: ools for decision-making in urban bioclimate – SkyHelios**, Marcel Gangwisch, DWD Germany

**15:00 -16:00 Practice: Decomposition of climatological time series: estimation of trend, seasonality and noise component.** Yulia Mukhartova, MSU Russia

**16:00 -17:00 Practice: Spectral and wavelet analysis of time series.** Yulia Mukhartova, MSU Russia

## **Day 5 21.01.22 Arctic, Cities, Social Sciences**

**10:00 - 10:15 Introduction to Day 5**

**10:15 - 11:00 Lecture: Development of the North 2.0: challenges of making a new theory**  
Alexander Pilyasov, Director of Institute of Regional Consulting, Russia

**11:00 - 11:10 Welcome remarks from European Research Course on Atmospheres – ERCA School**  
Didier Voisin and Olga Zolina, Universite Grenoble Alpes, France

**11:10 - 11:55 Lecture: Arctic as an Urbanized Territory**  
Nadezhda Zamyatina, MSU, Russia

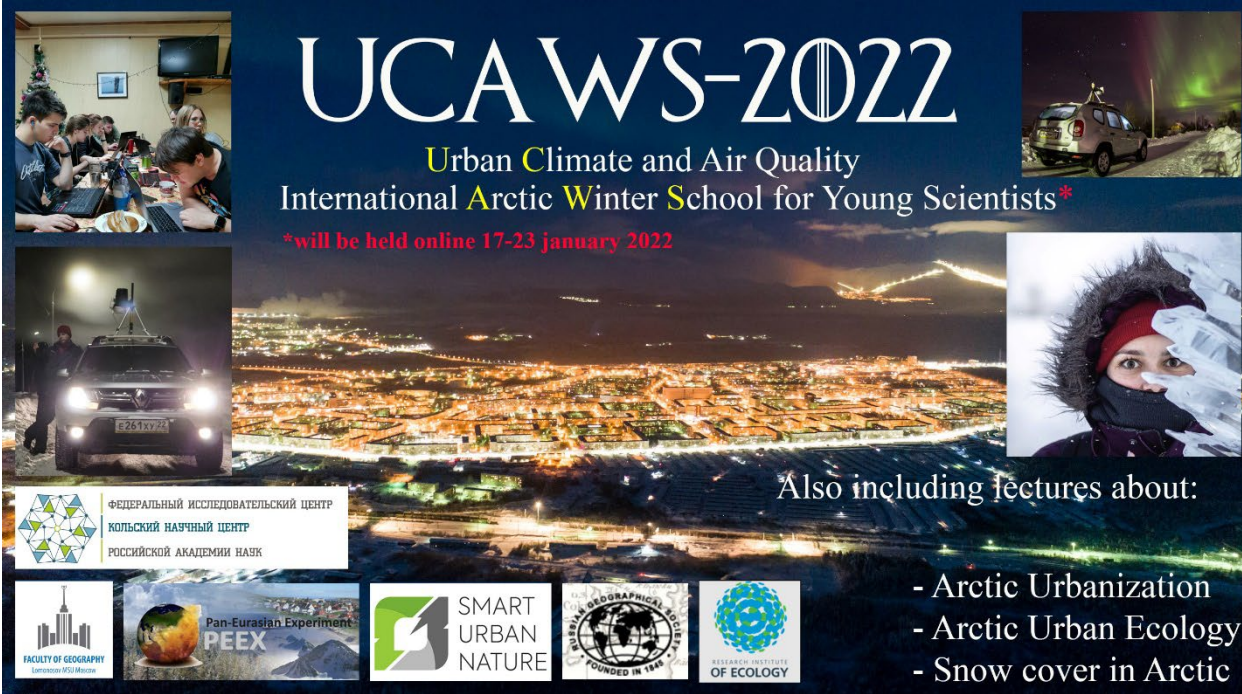
**11:55 - 12:40 Lecture: Living in the ruins of post-Soviet Arctic**  
Maria Gunko, IGRAS, Russia

**Lunch / Breakfast/ break 12:30 - 14:00**

**14:00 - 15:00 Practice: How to run WRF**  
Alexander Timazhev, A.M.Obukhov IAP, Russia

**15:00 - 16:00 Practice: What to do if WRF is not running**  
Alen Kospanov, MSU, Russia

**Closing Remarks**



**UCAWS-2022**  
Urban Climate and Air Quality  
International Arctic Winter School for Young Scientists\*  
\*will be held online 17-23 January 2022

Also including lectures about:

- Arctic Urbanization
- Arctic Urban Ecology
- Snow cover in Arctic

ФЕДЕРАЛЬНЫЙ ИССЛЕДОВАТЕЛЬСКИЙ ЦЕНТР  
КОЛЬСКИЙ НАУЧНЫЙ ЦЕНТР  
РОССИЙСКОЙ АКАДЕМИИ НАУК

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Lomonosov MSU

Pan-Eurasian Experiment  
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FOUNDED IN 1847

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