

# HEAVY METALS IN THE ATMOSPHERE NEAR THE NORTHERN EURASIAN COAST: VARIATIONS FROM YEAR TO YEAR IN WINTER AND SUMMER

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**Abstract.** This work studies variations from year to year in long-range atmospheric transport to 4 points situated along the coast of Northern Eurasia (2 – in European part and 2 – in Asian one). Winter (January) and summer (July) conditions are analyzed together with indexes of atmospheric circulation (IAC) during 2000–2013. Surface air concentrations of 7 anthropogenic heavy metals (HM) have been calculated, their spatial and seasonal variations are discussed. The main conclusions are: in summer the northern air transport prevails at all four points, in contrast with wintertime when the southern air transport prevails; correlations between air transport directions and index POL are available for European points, indexes SCA and EA/WR can be seen as possible connections for Asian points; air pollution decreases from the West to the East through the Eurasian Northern coast; at each point the most HM concentrations are in winter, the less ones – in summer; strong variations in air pollution from year to year are caused by air transport differences, especially for HM with extreme distant sources. We'd like to highlight that measurement results from only one season or even one year should not be used by ecologists, economists or politicians for long-term conclusions or forecasts. Also, it's not right to do any conclusions on environmental conditions from measurements of only one pollution component or at only one point.

*Keywords:* environment, Russian Arctic, nature reserves, heavy metals, long-range atmospheric transport, anthropogenic sources, temporal variations.