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Assessment of chemical contamination of Kaliningrad soils

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Abstract. A comprehensive study of Kaliningrad soils was conducted to assess the level and structure of chemical pollution. The study demonstrates the fundamental importance of using a local background, rather than global clarkes, for reliable assessment of anthropogenic impact. The stable polycomponent pollution of soils in Kaliningrad was identified, with the formation of clearly localized geochemical anomalies. The methods of statistical analysis and geographic information mapping revealed two main sources of pollution, spatially coinciding with the zones of intensive industrial and port activity. The most significant accumulation was found for lead and zinc, the levels of which reached the levels of "severe" pollution. The application of the index system (Igeo, PI, EF, NPI, PLI, Zc) made it possible to differentiate the territory by the degree of soil pollution and identify the nature of the sources of pollutants. The results obtained prove the need for geoecological monitoring and the development of targeted environmental protection measures for identified areas of environmental pollution.

Keywords:
urbanized area, soils, heavy metals, background concentrations, pollution index, spatial distribution, geochemical anomalies

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