

Trends in airborne concentrations at the EMEP stations in Latvia

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Abstract

Latvia is a pollutant net importing country. The transboundary pollution with oxidized sulphur and oxidized nitrogen may constitute up to 93- 98%, reduced nitrogen 55-71%, lead and cadmium –65-73% of the total modelled deposition of the substances on entire territory of Latvia. The depositions of sulphur and reduced nitrogen have been stable since 1993, while the deposition of oxidized nitrogen had increased by 30% by 1998 compared to the level of 1993.

In significant reductions in emissions of sulphur dioxide and nitrogen dioxide in Europe and the stabilized depositions of the substances in Latvia, trends in the airborne concentrations at the EMEP stations in Latvia are reviewed.

Long –term observations at the EMEP station Rucava show statistically significant decrease in the average concentrations of SO₂-S and NO₂-N in the air and in the weighted average concentrations of SO₄²⁻-S, NO₃⁻-N, Na⁺, K⁺ and Ca²⁺ in the precipitation during 1986-2000 and Pb during 1995-2000.

Statistically significant decrease in average concentrations of the substances is shown at the EMEP station Zoseni during the observation period 1995-2000.

An analysis of the trajectories of air mass transport over the Latvia's territory in 1986-2000 has shown the predominance of W - SW transport. Concentrations of sulphur and nitrogen compounds at both stations would be 2-3 times as high in SW, W and SE transport as in N and N-W transport.





