

## **Basic periodicity features of the time variation of surface ozone in Europe**

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According to the data from about 60 EMEP stations, the following basic periodicity features of the time variation of surface ozone in Europe have been revealed: seasonal, weekly, and diurnal. A quantitative description of the seasonal periodicity of the surface ozone mixing ratio at different stations has been made, and the time of the seasonal maximums and minimums has been determined. The seasonal surface ozone variation about the maximum is shown to have a complicated form; at some stations, two maximums different in nature are observed. The springtime maximum observed at all the stations is proved to be due to an increase of the vertical mixing between the surface layer and the free troposphere during this period. The summer maximum is only noticeably marked at stations situated more south and is evidently due to photochemical ozone formation caused by anthropogenic atmospheric pollutants. Differences in the diurnal ozone variation in different seasons and those in the seasonal variation depending on the time of the day have been revealed. The time variation of ozone over flat terrain and high mountains is shown to be largely different, which is accounted for by the vertical mixing features. Differences in surface ozone levels on weekdays and weekends have been observed.