



# **A 15-Year Analysis of Surface Ozone Pollution in the Context of Hot Spells Episodes over Poland**

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## **A b s t r a c t**

Analysis of summertime temperature characteristics and ozone exposure indexes were carried out for eight locations in Poland for a 15-year period (1997-2011). The number of days with the maximum temperature exceeding 25°C and 30°C was calculated for each year. The analysis covered the 8-hour running average and daily maximum of near surface ozone concentrations. Also, the accumulated exposure when ozone concentrations were above 120  $\mu\text{g}/\text{m}^3$  (AOT60) was calculated as a diagnostic indicator of adverse health effects for each year. Although high ozone concentrations are associated with hot temperatures, the exposure to values higher than 120  $\mu\text{g}/\text{m}^3$  is correlated with the length of the hot weather period rather than with the occurrence of days with extremely high temperatures. In most cases the elevated ozone concentrations occurred during days when the maximum temperature was higher than 24°C. Episodes of very high ozone concentrations, exceeding 180  $\mu\text{g}/\text{m}^3$ , were not associated with heat wave periods at analysed locations.

**Key words:** hot spells, heat waves, ozone pollution, ozone exposure, ozone episodes.