



## **Air pollution in Polish cities during January 2017 – an episode study**

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Poor air quality is a health issue in Poland, especially during winter. Six cities in Poland are in the top 10 and 33 cities are in the top 50 most polluted cities in Europe.

In the first days of January 2017, there was a drastic change in the weather patterns over Central Europe. Temperatures dropped below  $-20^{\circ}\text{C}$  in only a couple of days with calm wind conditions. Meteorological soundings showed inversions up to hundreds of meters above the surface. In such conditions PM10 and PM2.5 concentrations were unusually high. Thresholds were exceeded in most of the cities in Poland. In some of the cities PM concentrations were very high: reaching  $1600\ \mu\text{g}/\text{m}^3$  in Rybnik,  $1300\ \mu\text{g}/\text{m}^3$  in Zabrze,  $1000\ \mu\text{g}/\text{m}^3$  in Gliwice,  $700\ \mu\text{g}/\text{m}^3$  in Katowice. Most likely the main source of the pollution event were domestic emissions as well as traffic emissions. High concentration values were due to the stratification of the atmosphere. Nearly all cities issued smog alerts. The majority of the cities introduced free public transportation and schools were closed.

We will show the evolution of this episode in the selected cities for the period when the highest concentrations measured and forecasted - from 7 to 11 January 2017. The synoptic situation for the episode will be discussed.