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INTERPRETING AIR QUALITY IN REAL TIME

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There is a need for public information on the environment (the obligation to inform the public is part of the EU guidelines on air quality, the Aarhus convention, etc.) Several organisations present pollutant concentrations in real time on the internet. Apart from showing the data, there is a need for real time interpretation: the public wants to know whether the air quality is good or bad. However, air quality standards are often based on yearly averages. Judging hourly values by the year average standard is not feasible as most concentrations show daily and seasonal patterns. Some web sites address this problem by showing moving (24 hours) averages. However, this makes the presentation less attractive and informative as it becomes rather static. This paper proposes a method of interpreting the quality of an hourly value by using a statistical hourly distribution of the year average limit value. The method assesses the likelihood of a certain air quality at a given time of the day, day of the week and month of the year. This creates flexible criteria to judge hourly measurements. For example, NO2 is expected to be less on a Sunday afternoon in summer than on a Monday morning rush hour in winter, and a relatively high rush hour value may get adequate compensation at another moment. Therefor expected values are used as a flexible measure to determine whether air quality at a particular moment is adequate or not.