



## Site-dependent decrease of odour-related peak-to-mean factors with distance

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In Austria, a peak-to-mean approach is used to transform half-hourly concentrations calculated by the Austrian Odour Dispersion Model AODM to instantaneous values depending on the stability of the atmosphere describing the biologically relevant exposure. The reduction of the peak-to-mean ratio with distance due to turbulent mixing is described with an exponential attenuation function which involves knowledge of the standard deviations of the three wind components. The approach is described in detail in Schaubberger et al. (2013) and Piringer et al. (2013). Apart from obtaining these values via prescribed relations from the known average wind speed, they can be derived directly from 3D ultrasonic anemometer measurements. In the course of a project in which the peak-to-mean approach developed for AODM will be transferred to the Lagrangian dispersion model LASAT we investigated the influence of the methodology to determine atmospheric stability on the dependence of the peak-to-mean ratio with distance. Atmospheric stability has been determined by the Austrian Reuter-Turner and the Monin-Obukhov stability parameter derived directly from the ultrasonic anemometer measurements. Data from five sites across Austria have been used. The results are sensitive to the sites and the methods applied. They will be presented, and implications on the calculated separation distances will be discussed.

### References:

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