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Separation distances around livestock buildings derived with two models

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In Austria, a peak-to-mean approach is used to transform half-hourly mean concentrations calculated by the Austrian Odour Dispersion Model AODM to instantaneous values depending on the stability of the atmosphere describing the stimulus concentration of the odour perception. 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. These values can be derived directly from 3D ultrasonic anemometer measurements using the Obukhov stability parameter OSP. This approach is transferred to the Lagrangian particle dispersion model LASAT in post-processing mode. Using the same source data and meteorological time series, differences in the calculated separation distances will then be due to the different model physics. Results for two sites with different settings and local meteorology will be presented and implications for expertises on odour pollution will be discussed.