Particle spatial distribution in suburban area Celakovice: 
The effect of commuter vehicle traffic.

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Background
Celakovice is a suburban small city. Inhabitants commute daily to work to Prague by public transportation and many of them by car. This situation is typical for the most small cities and satellites around larger cities.

The Aim
to determine the effect of traffic peaks on particle concentrations near main roads and their effect on farther dwellings.

<table>
<thead>
<tr>
<th>Traffic peaks</th>
<th>2x10^4 #/cm^3 with peaks around 4x10^4 #/cm^3</th>
<th>150m far from road</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road</td>
<td>1.5x10^4 #/cm^3</td>
<td>1x10^4 #/cm^3</td>
</tr>
</tbody>
</table>

After traffic peaks
Up to 10:00 AM 1.5-2x10^4 #/cm^3
After 10:00 concentrations gradually decreased to a concentration about 10^4#/cm^3 at midday (3rd February), and 7x10^3#/cm^3 (30th January)

Methods
two mobile sets of instruments:
- Particle classifier with size-resolved measurements of particles in the 5 - 500nm (EEPS, TSI), batteries, GPS, and other accessories
- Condensation particle counter (UF - CPC 200 Palas) counts particles from 5nm to 10µm

Conclusions
- Concentrations along main road were elevated in comparison with places at least 150m far from the road; however, the difference was relatively small.
- Concentration between morning and afternoon traffic peaks (7x10^3 to 1.5x10^4#/cm^3) was elevated in comparison with Prague background concentration, 7.3x10^3 #/cm^3
- Although concentrations followed daily pattern corresponding to traffic intensity, the main road did not seem to be the main source of measured particles in areas 150 m from the road.

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