

Quantifying the impact of vehicle fleet electrification on local aerosol concentrations in Helsinki using high-resolution Large Eddy Simulation

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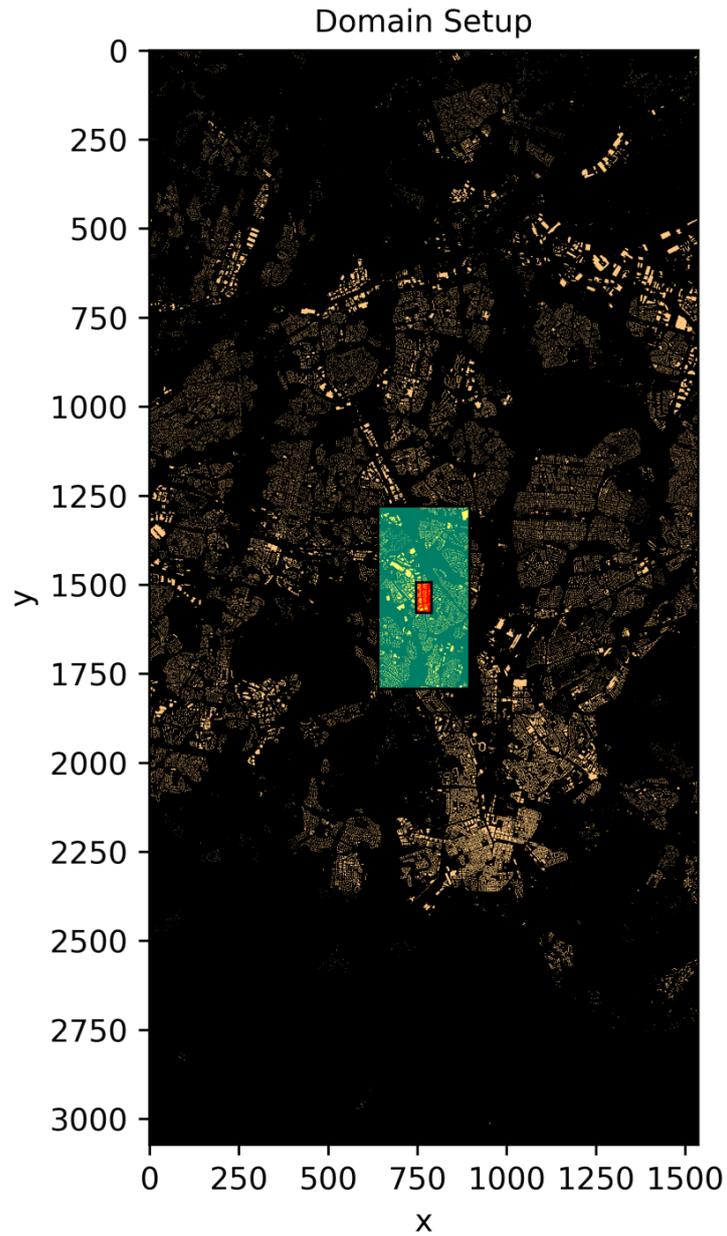


Figure S1. Simulation domains: root (black), parent (green), and child (red). The x and y axis refer to the number of grid cells. Detailed information for the root domain was obtained from a 2-m elevation model (National Land Survey of Finland, 2024) and for the parent and child domains from high-resolution (1 m) raster maps (Strömberg et al., 2022). The newly planned area within the child domain was generated based on the Vihdintie plan provided by the City of Helsinki and integrated in the map by the authors.

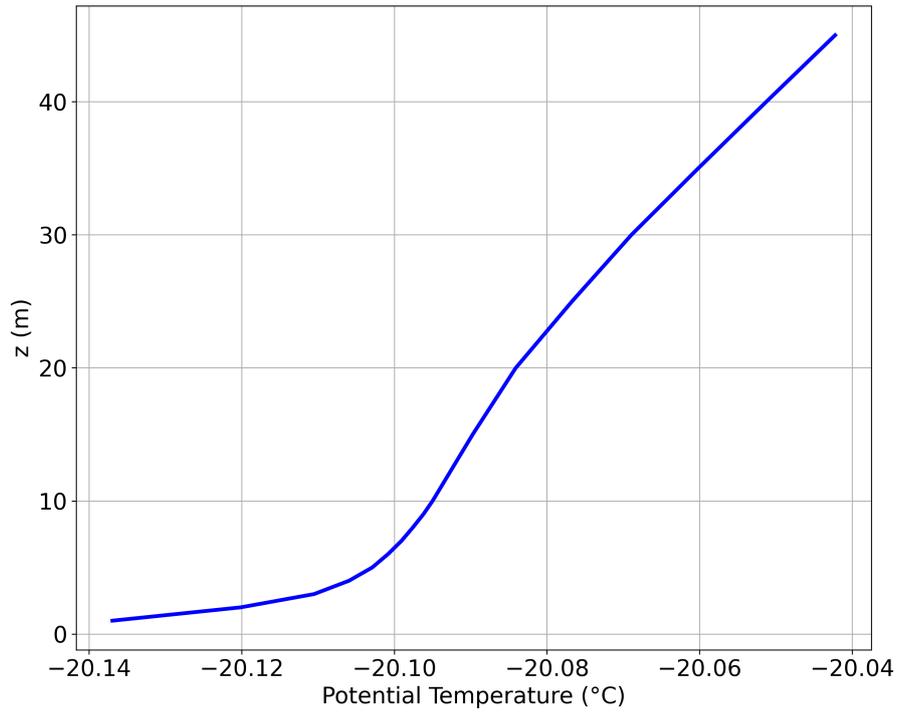


Figure S2. Potential temperature averaged over time (08:00 to 09:00) within the child domain, showing relatively weak stable boundary condition

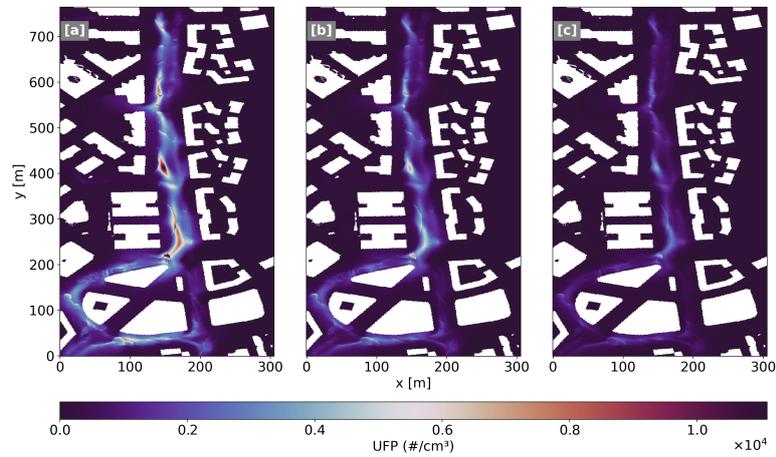


Figure S3. Spatial variability of the ultra fine particles (UFP) concentration ($\# \text{ cm}^{-3}$) for (a) the baseline scenario (S1), (b) S2 (2035), and (c) S3 (2040) at 2 m height from 08:00 to 09:00.

References

- National Land Survey of Finland: 2-meter elevation model for Finland, available at: <https://www.maanmittauslaitos.fi/en/maps-and-spatial-data/datasets-and-interfaces/product-descriptions/elevation-model-2-m> (last access: 18 April 2024), 2024.
- 5 Strömberg, J., Karttunen, S., and Auvinen, M.: Raster4H 2.0 (v2.1), Zenodo [data set], <https://doi.org/10.5281/zenodo.7442799>, 2022.