

Supplementary

Development and Application of the SmartAQ High-Resolution Air Quality and Source Apportionment Forecasting System for European Urban Areas

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Table S1. Individual compounds simulated by MEGAN.

Compounds
Alkanes
Olefins
Aromatics
Nitrogen dioxide
Nitrogen monoxide
Ammonia
Carbon monoxide
Ethene
Methane
Methanol
Acetone
Acetaldehyde
Formaldehyde
Benzaldehyde
Higher aldehydes
Methylethyl ketone
Formic acid
Acetic acid
Pyruvic acid
Methyl acetate

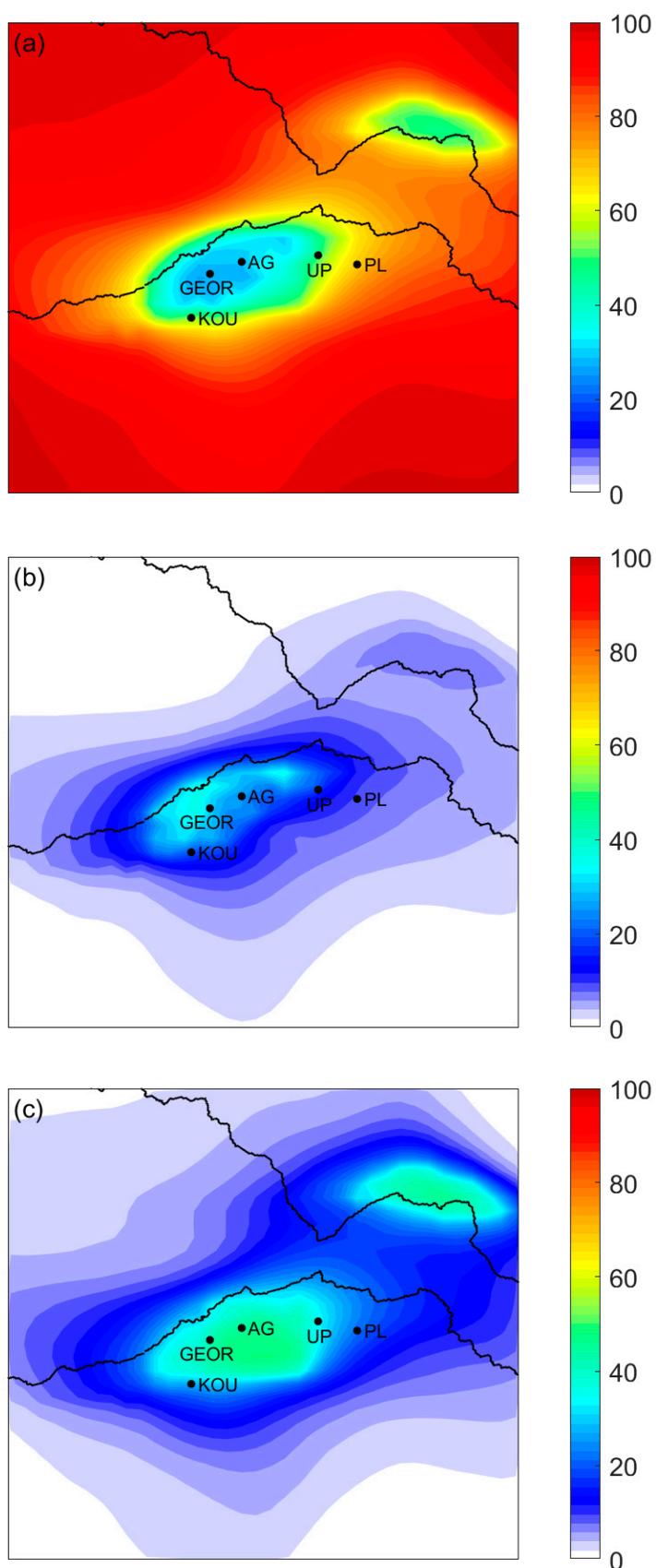


Figure S1. Contribution (%) of fine EC (a) from LRT, (b) from transportation and (c) from other sources to total fine EC during July 2021 for the domain of Patras.

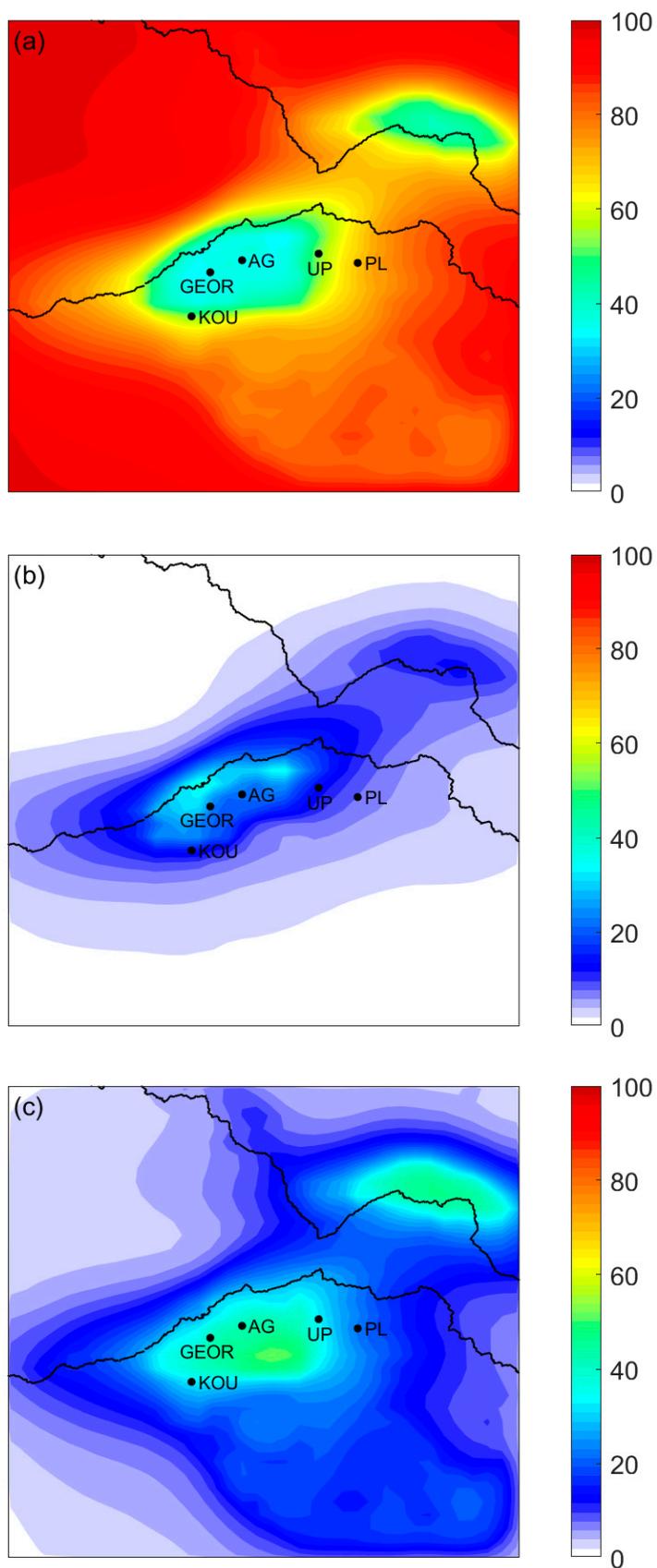


Figure S2. Contribution (%) of fine EC (a) from LRT, (b) from transportation and (c) from other sources to total fine EC during December 2021 for the domain of Patras.

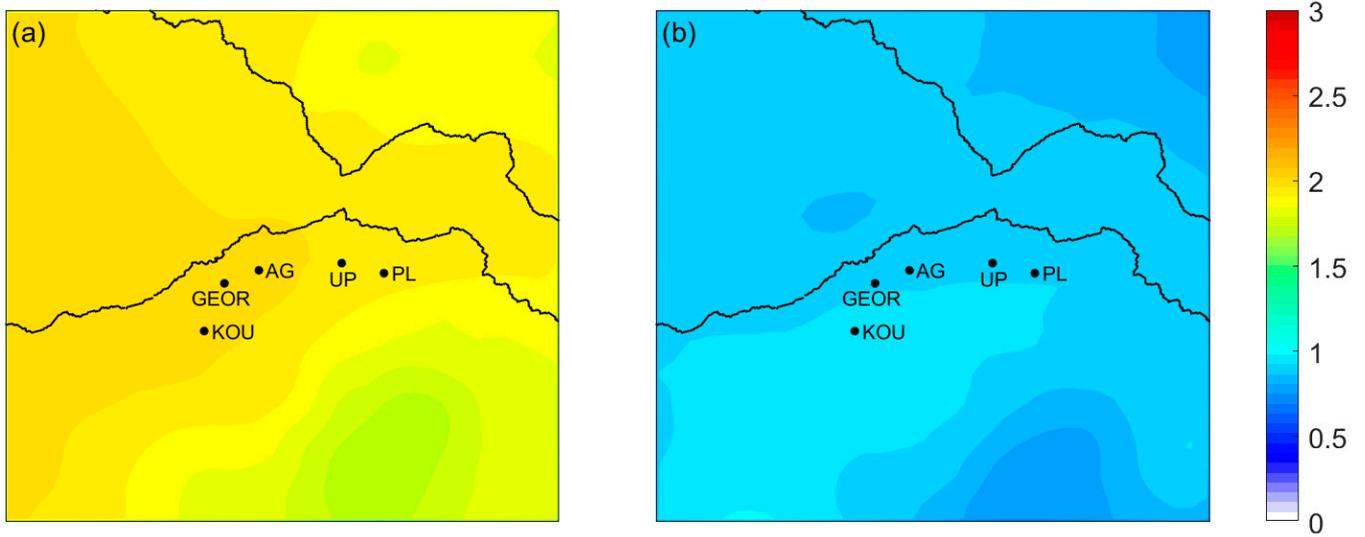


Figure S3. Predicted average ground concentrations ($\mu\text{g m}^{-3}$) of fine secondary OA during (a) July 2021 and (b) December 2021 for the urban domain of Patras at $1 \times 1 \text{ km}^2$ resolution.

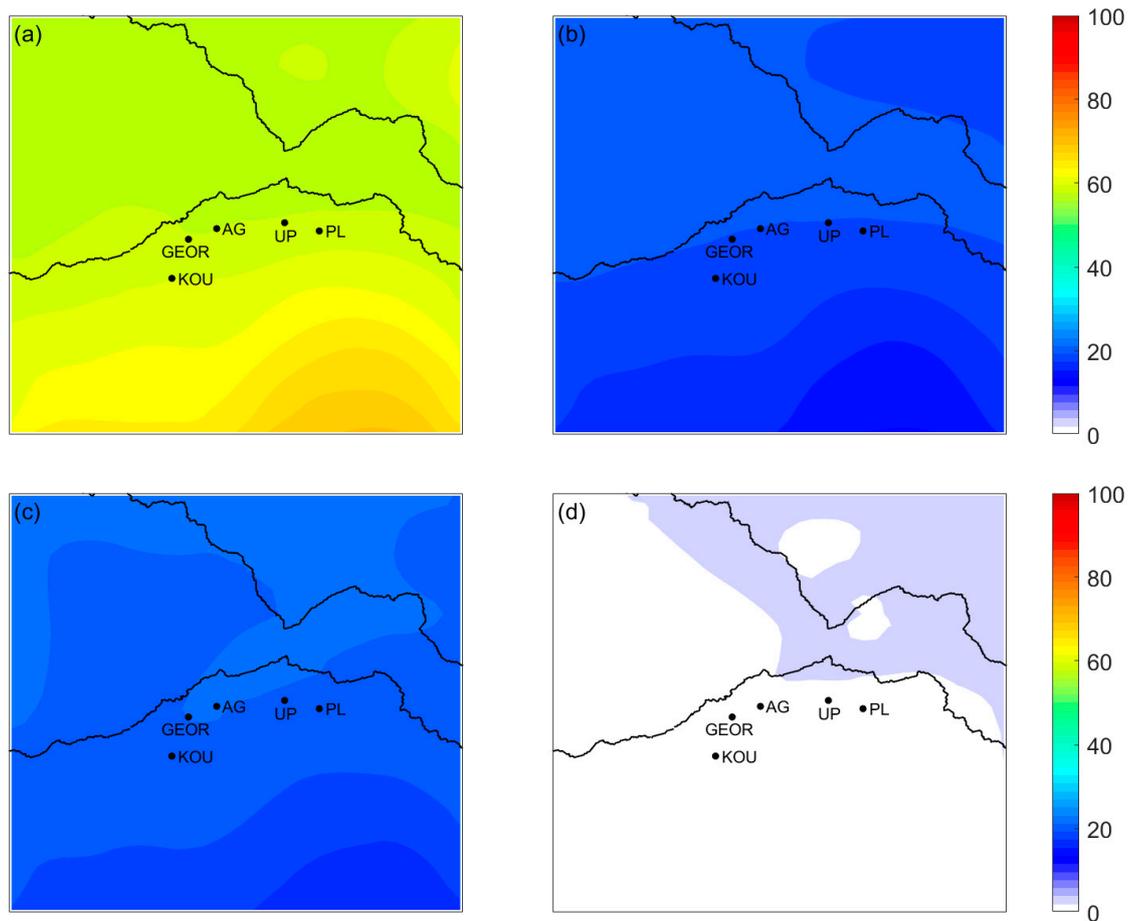


Figure S4. Contribution (%) of (a) LRT, (b) oxidized, (c) anthropogenic and (d) biogenic fine secondary OA to total fine secondary OA during July 2021 for the urban domain.

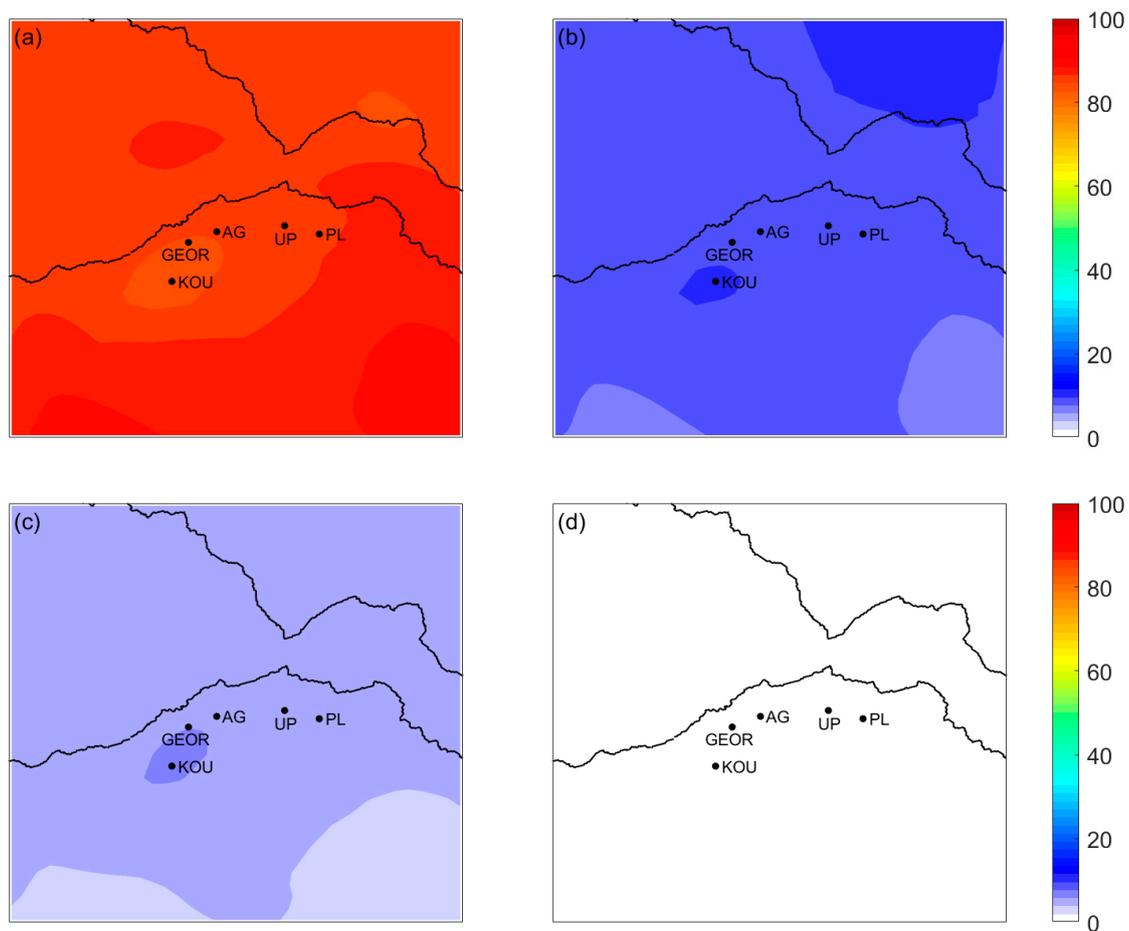


Figure S5. Contribution (%) of (a) LRT, (b) oxidized, (c) anthropogenic and (d) biogenic fine secondary OA to total fine secondary OA during December 2021 for the urban domain of Patras.

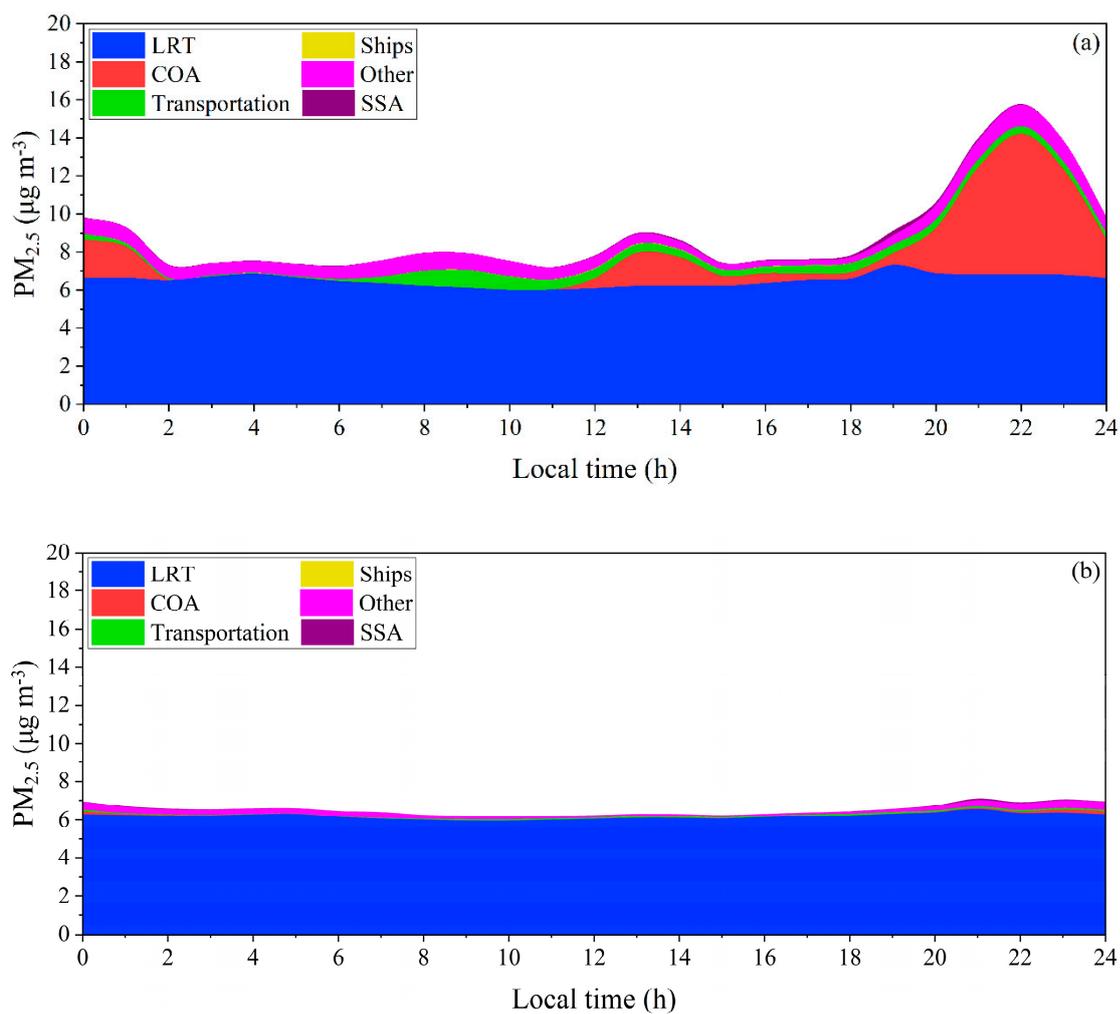


Figure S6. Average diurnal profile of PM_{2.5} sources in (a) Georgiou Sq. and (b) Platani during July 2021 for the urban domain of Patras.

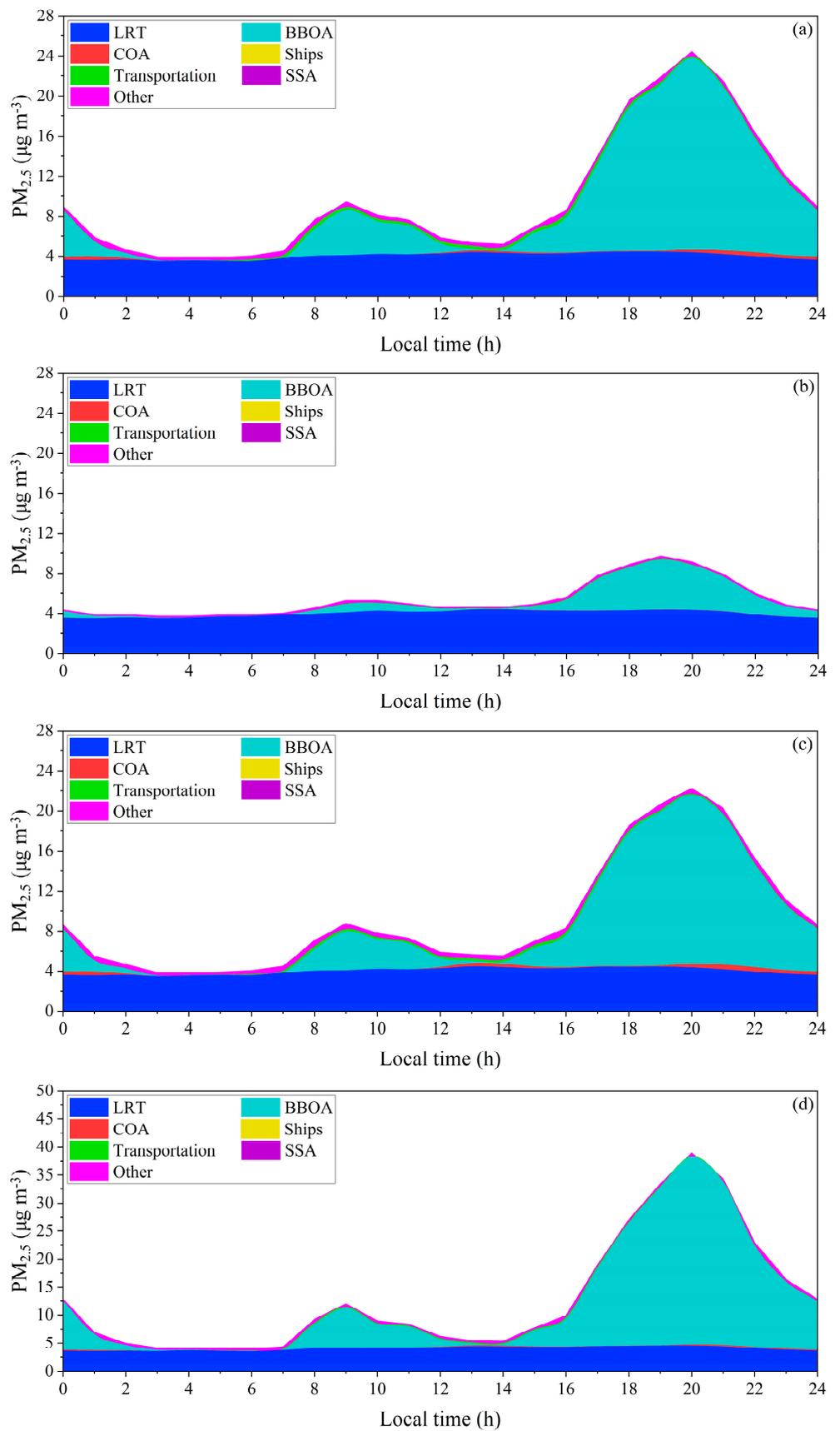


Figure S7. Average diurnal profile of PM_{2.5} sources in (a) Georgiou Sq., (b) Platani, (c) Agia and (d) Kypseli during December 2021 for the urban domain of Patras.