1   **SUPPORTING INFORMATION**

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3   **Source apportionment of submicron organic aerosol at an urban background**

4   **and road site in Barcelona during SAPUSS**

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6   Marta Alier, Barend L. van Drooge, Manuel Dall'Osto, Xavier Querol, Joan O. Grimalt,
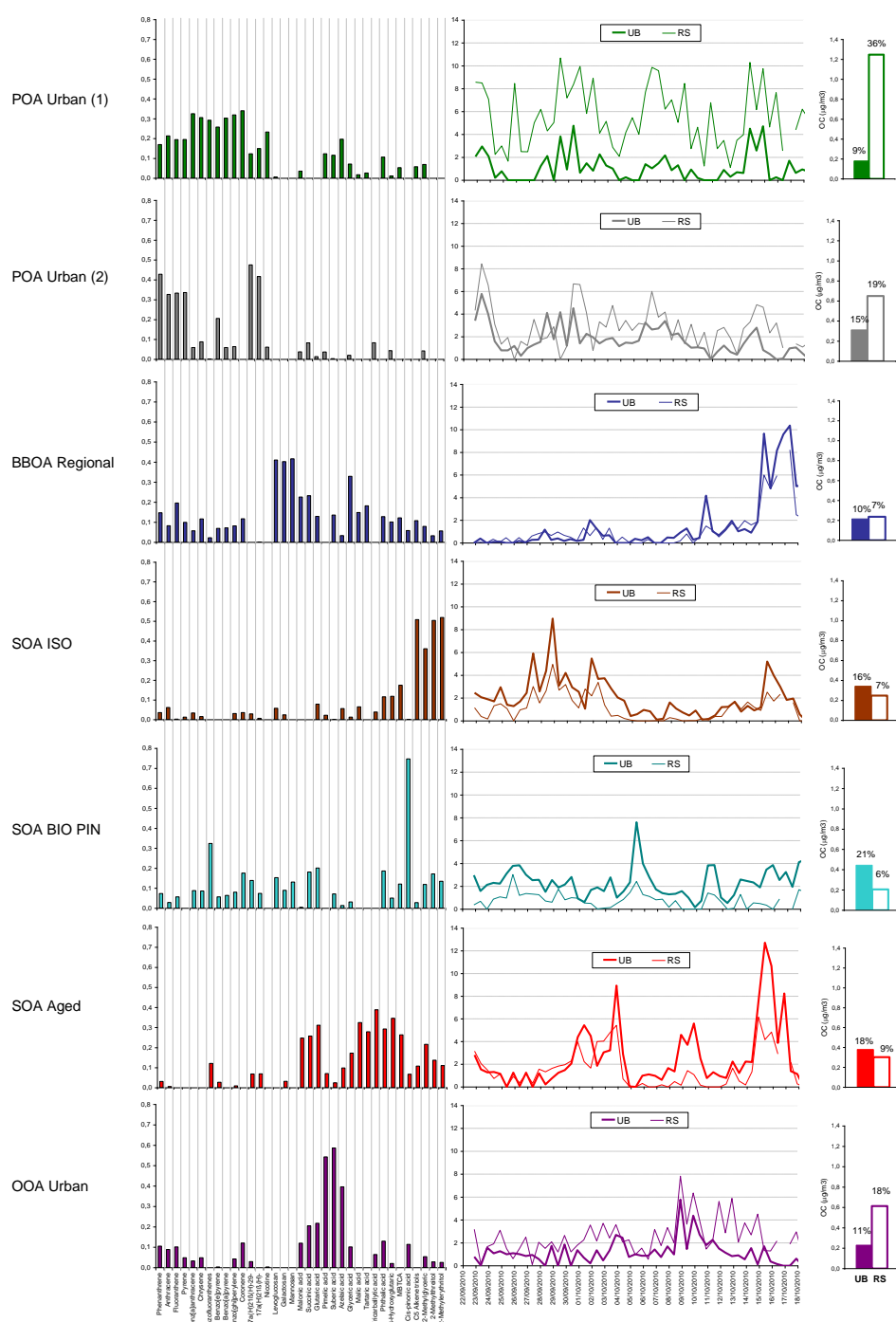
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12   Table SI 1. Seven solution component with all 35 compounds
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Seven solution component factor	Comment
1 POA Urban 1	It maintains the features of the six factor solution POA Urban, with a main PAH (PAH_high) structure.
2 POA Urban 2	POA Urban 2 (new component). This is a splitting of POA Urban 1. The merging of Urban POA 1 and Urban POA 2 from the seven solution component give the urban POA of the 6 component (R^2=1). This solution is a splitting of the POA Urban.
3 OOA Urban	OOA Urban. This solution is very constant over the 6 factor solution. The regression line is 1:1, but only the C_7-C_9 signature is conserved in the loadings of the organic compounds, and the PAH-hopanes structure is lost.
4 SOA BIO ISO	This component is really stable, has same temporal trend and same R^2 and same factor profile with the 6 and 7 factor solution. There is almost no difference between the 6 and 7 factor solution.
5 SOA BIO PIN	Main component is still cis-pinonic acid, but the second one major one is a PAH. The temporal trend of this component is also less clear.
6 BBOA Reg.	This solution is similar to the 6 factor one. However, there is generally lower conc. (0.2 µg m^{-3}) than previous studies (0.3-0.4 µg m^{-3}). Overall the RS-UB correlation are the same (R^2 =0.88). However, the correlation between RS and UB for the last period is much better (R^2 =0.95) for the 6 component than the 7 one (R^2 <0.7). The 6 factor solution is better.
7 SOA aged	This component maintains the feature of the aged SOA. However, the difference in conc. between RS and UB is very high. The 6 factor solution is better.

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16   Figure SI 1. Organic markers loadings, temporal trends and concentrations for the

17   seven solution

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Figure SI1. MCR-ALS resolved profiles applying non-negativity constraints. Column on the left shows the loading organic compound composition of the six selected components. Column in the middle shows the temporal trend of the score values of the six components. Column on the right shows the relative contribution of the scores (%) as well as the estimated mass contribution of organic carbon to volume (µg OCm^{-3}).

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