Figure R2.1. Q/Q_{exp} (left axis, red points) and percent of non-modelled points (right axis, blue dots) over the entire dataset as a function of window size (s_{win}), maximum a-value (a_{max}) and number of PMF repeats per window (x_{PMF}). In each plot, two of these parameters are fixed at their optimum values and the third is varied: (a) s_{win}, (b) a_{max}, and (c) x_{PMF}. Optimum values are s_{win}=14 days, a_{max}=0.4 , and x_{PMF} =50. (From Canonaco et al., 2021).

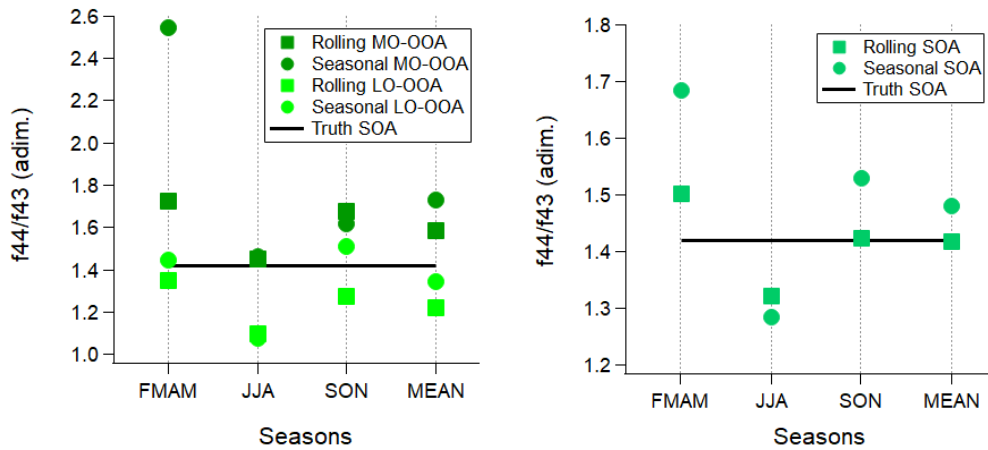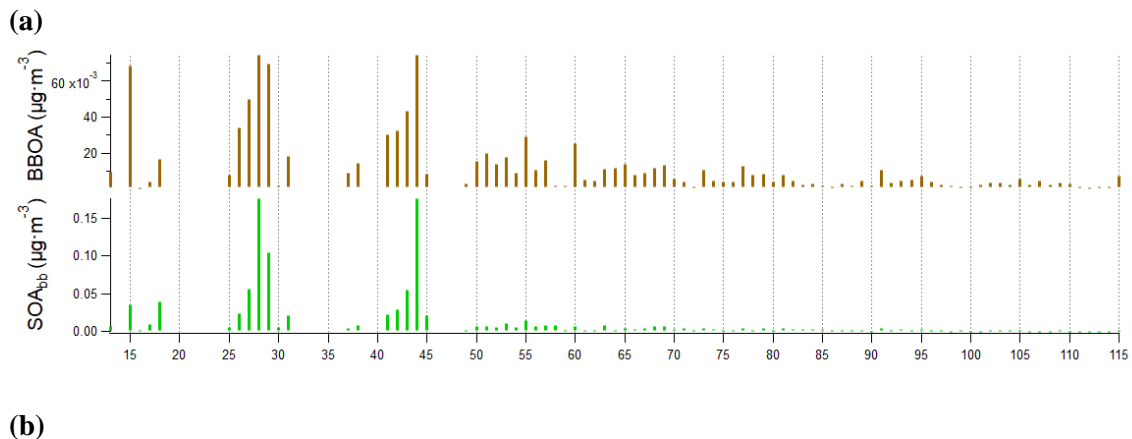**Figure R2.2.** Rolling and seasonal oxidation ratio (f44/f43) of the secondary factors divided into LO-OOA and MO-OOA on the left and mean-weighted OOA on the right.
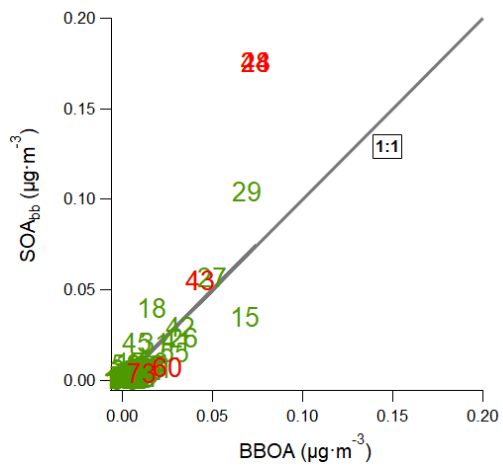
(a)

(b)

Figure R2.3. Comparison between BBOA and SOA_bb profiles depicted as (a) profiles (b) a scatterplot. In the scatterplot, the BBOA key ions are shown in red.
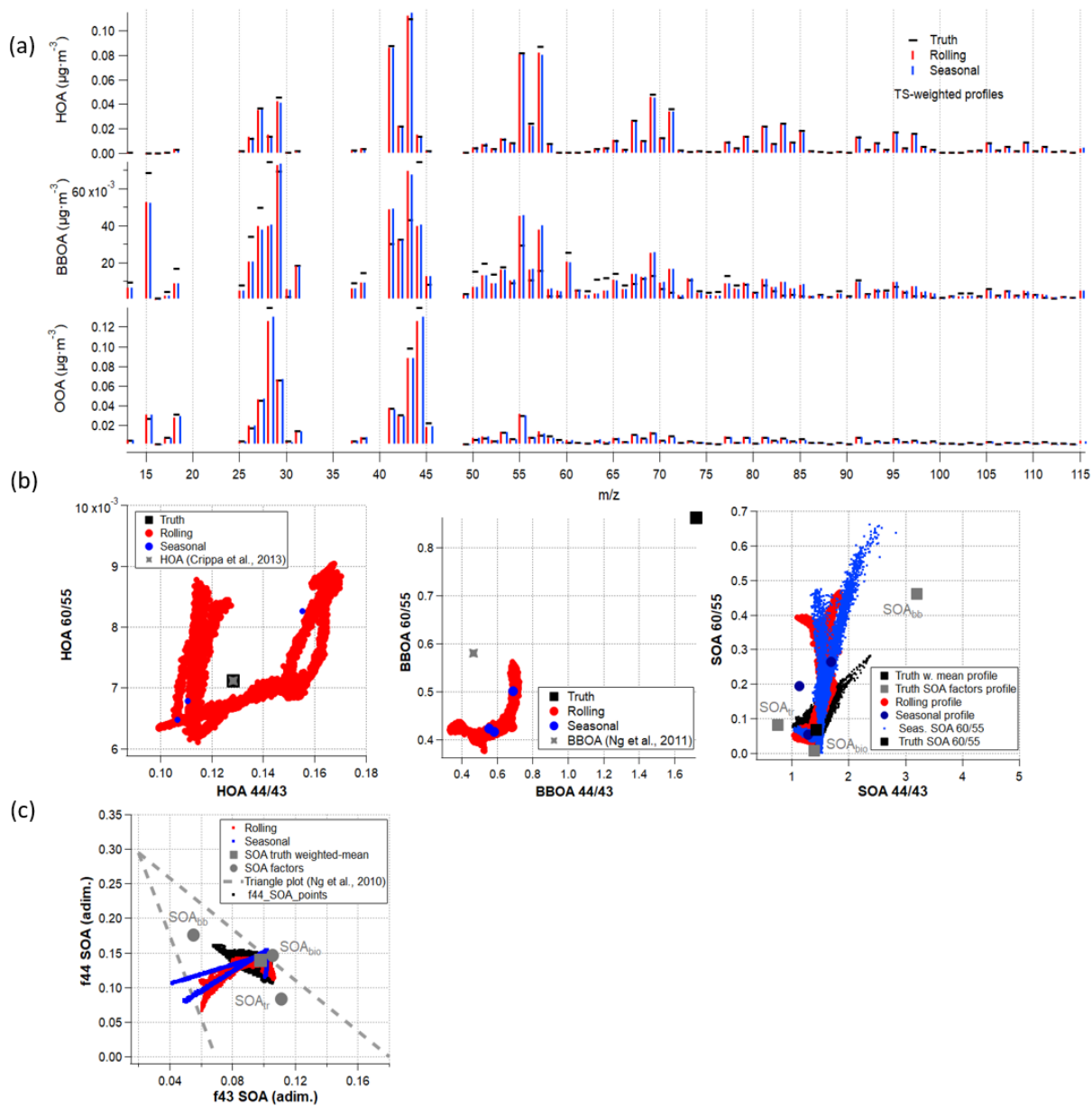
Figure R.2.4. Copy of Figure 3, improved as the reviewer suggested.