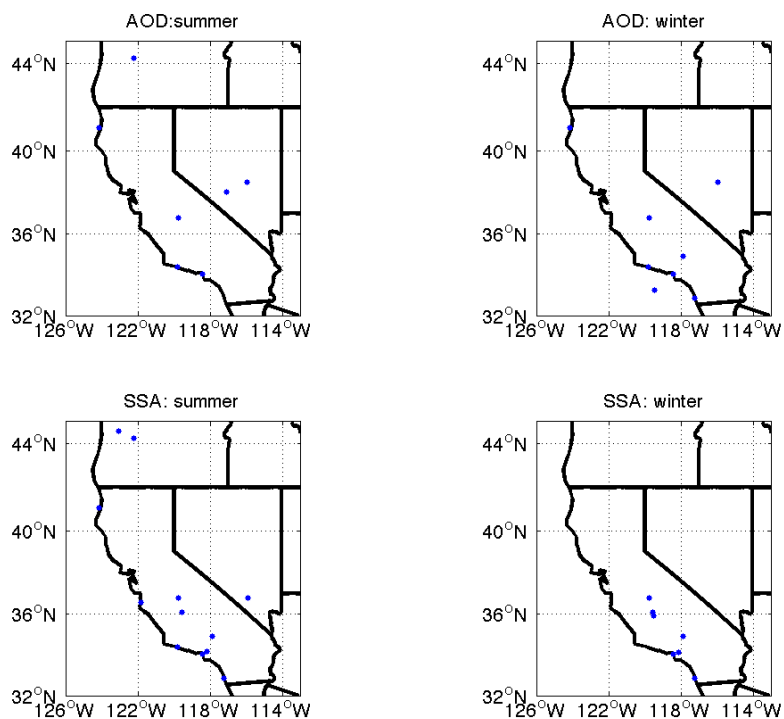


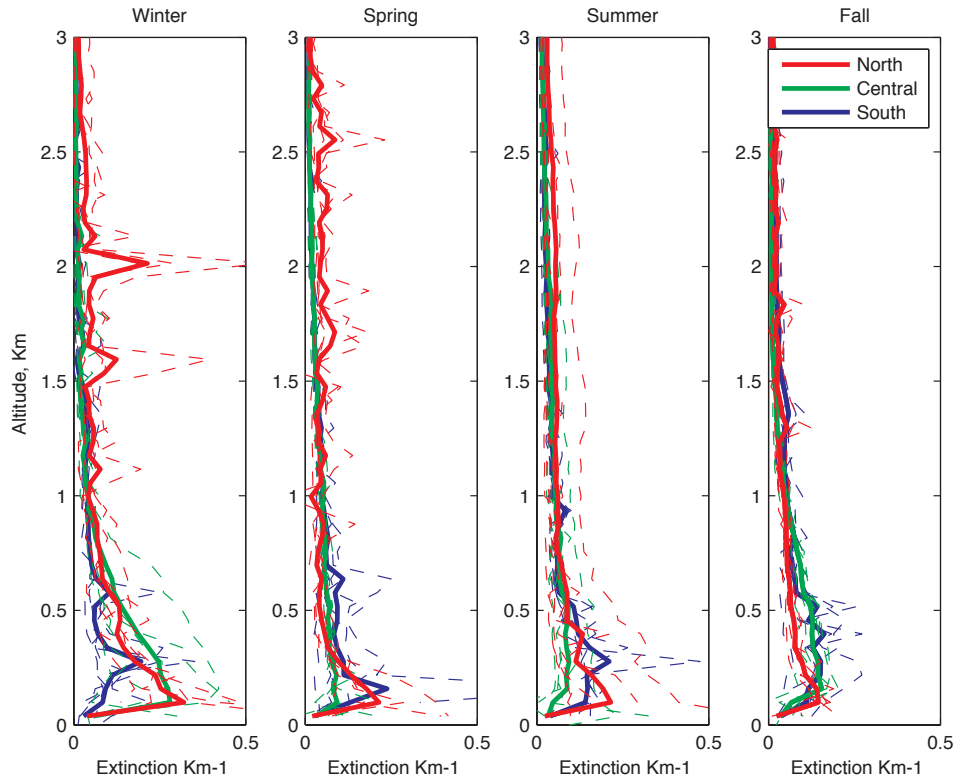
1 Supplementary Figures.



2

3 Fig. S1. AERONET sites in California and neighboring states that provided AOD and SSA
4 observations for this study. For simplicity, only summer and winter sites are shown. The number
5 of sites changes from season to season due to the data availability of long-term records

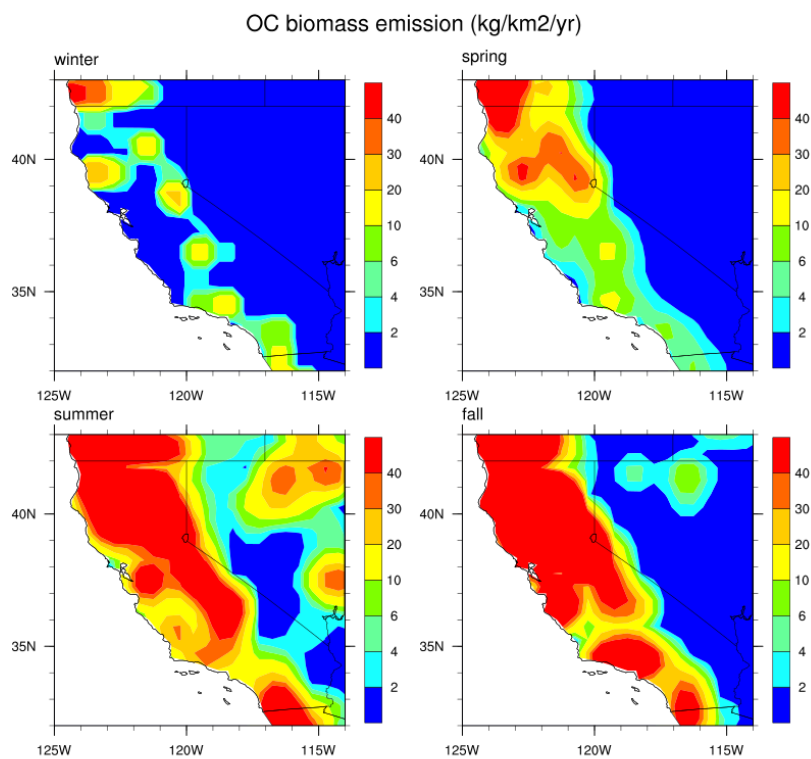
6



7

8 Fig. S2. Aerosol extinction coefficient profiles (km^{-1}) measured by CALIPSO from multiple
 9 years (dashed line) and the climatological mean (solid line). Different colors represent different
 10 regions (North/Central/South). North is defined as the area further north than 38°N , Central
 11 being the area within 35°N – 38°N and South as further south than 35°N . Note that the coefficients
 12 are suspiciously small at the surface, and therefore were replaced with in-situ measurements of
 13 the extinction coefficients from IMPROVE.

14



15

16 Fig. S3. OC emission from biomass burning sources (kg/km² per year) at different seasons
 17 (based on Representative Concentration Pathway database, updated from Bond et al., 2007).