Journal of Geophysical Research: Atmosphere

Supporting Information for

Spatiotemporal variations in summertime Arctic aerosol optical depth caused by synoptic-scale atmospheric circulation in three reanalyses

A. Yamagami[1], M. Kajino[1,2], T. Maki[1], and T. Toyoda[1]

1 Meteorological Research Institute (MRI), Japan Meteorological Agency (JMA), Tsukuba, Ibaraki, 305-0052, Japan

2 Faculty of Life and Environmental Sciences, University of Tsukuba, Tsukuba, Ibaraki, 305-8572, Japan

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Introduction

This supporting information includes the following figures:

- Distribution in the contribution of each aerosol species to total AOD in JRAero, CAMSRA, and MERRA-2 over north of 60ºN (Fig. S1);
- An example of the relationship between SLP and AOD for the case of AC in August 2016. (Fig. S2);
- Difference in SLP and emission of organic carbon between high and low loading days. (Fig. S3);
- Total AOD and sulfate, black carbon, organic carbon, dust, and sea salt aerosol contributions regressed on to PC-1 in JRAero (Fig. S4);
- Dry and wet deposition fluxes of OC and SS in MERRA2 regressed onto PC-1 (Fig. S5);
- Similar to those in Fig. S4, but for PC-2 (Fig. S6).

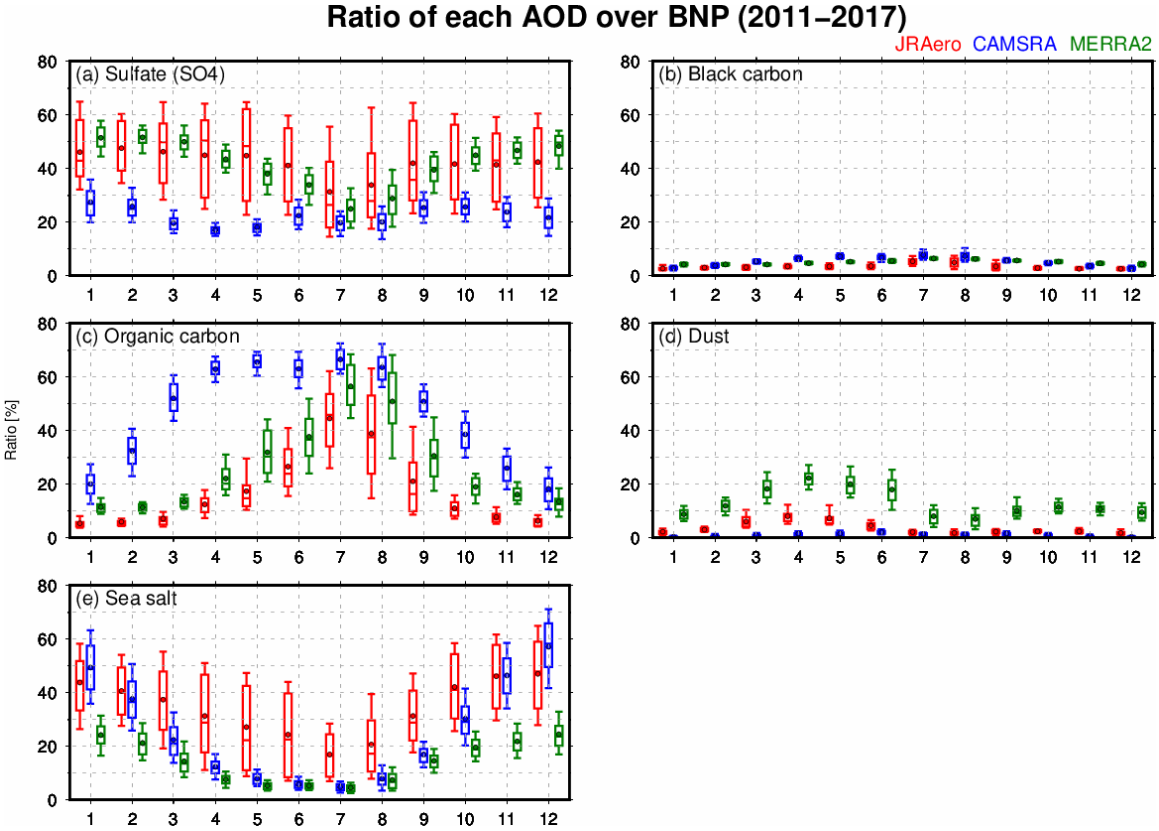

Figure S1. Similar to Fig. 2, bur for the ratio to the total AOD.

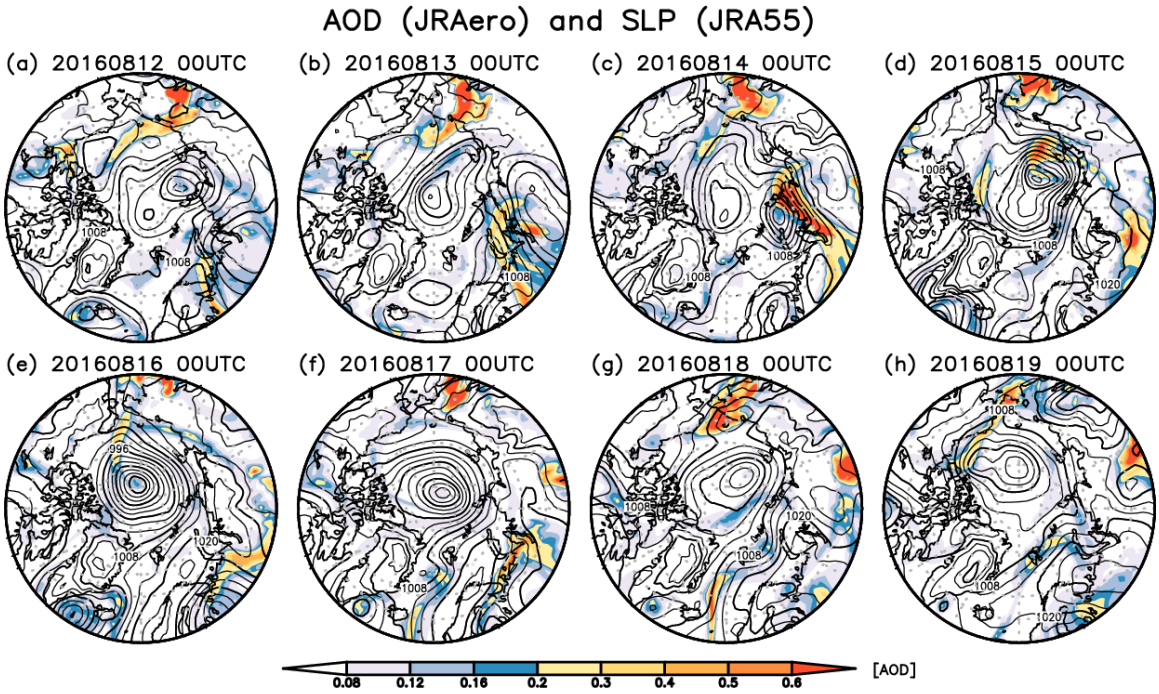

Figure S2. Similar to Fig. 5, bur for the AC in August 2016 in the time interval of 1 day from 00UTC on (a) 12 August to (h) 19 August 2017.

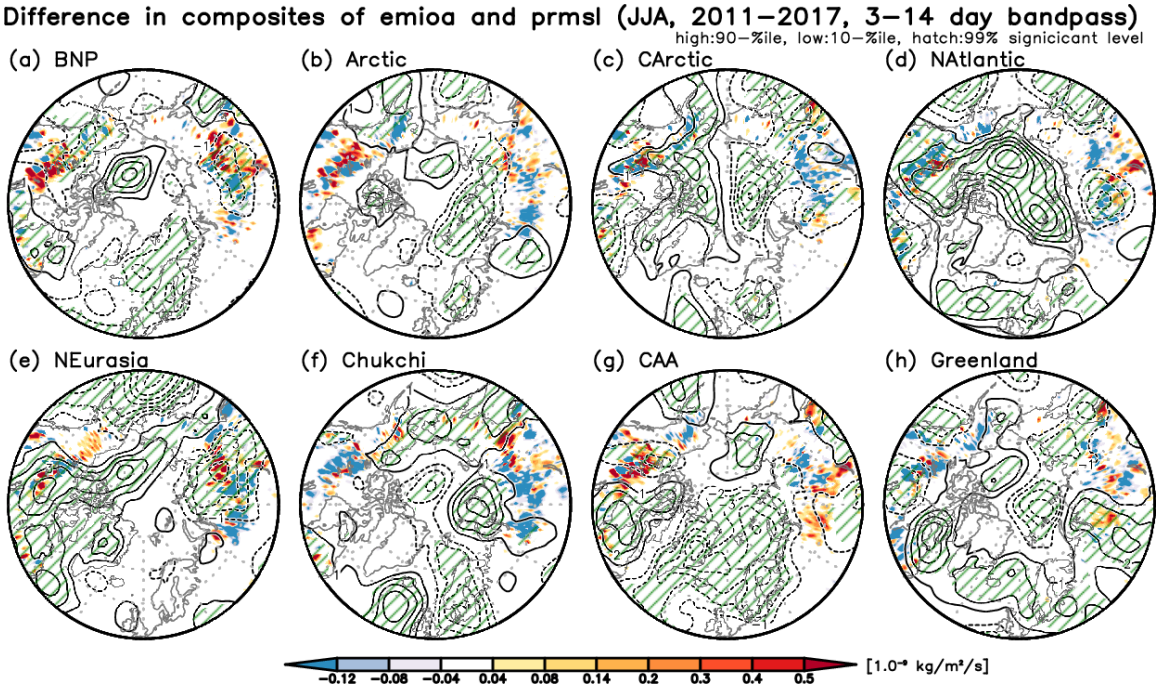

Figure S3. Similar to Fig. 6, but for difference in SLP (contour) and emission of OC (shading).

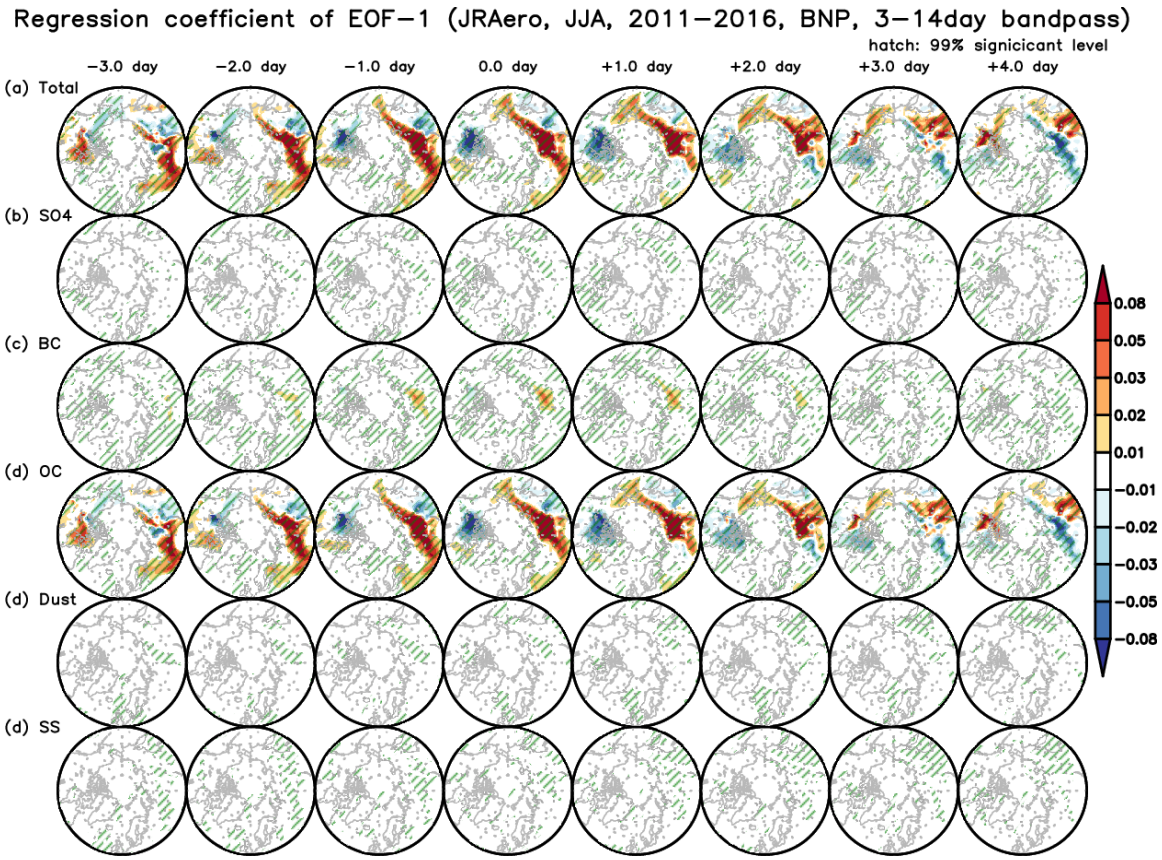

Figure S4. Similar to Fig. 9a, but for (a) total, (b) Sulfate (SO4), (c) black carbon (BC), (d) organic carbon (OC), (e) Dust, and (f) sea salt (SS) aerosol contributions.

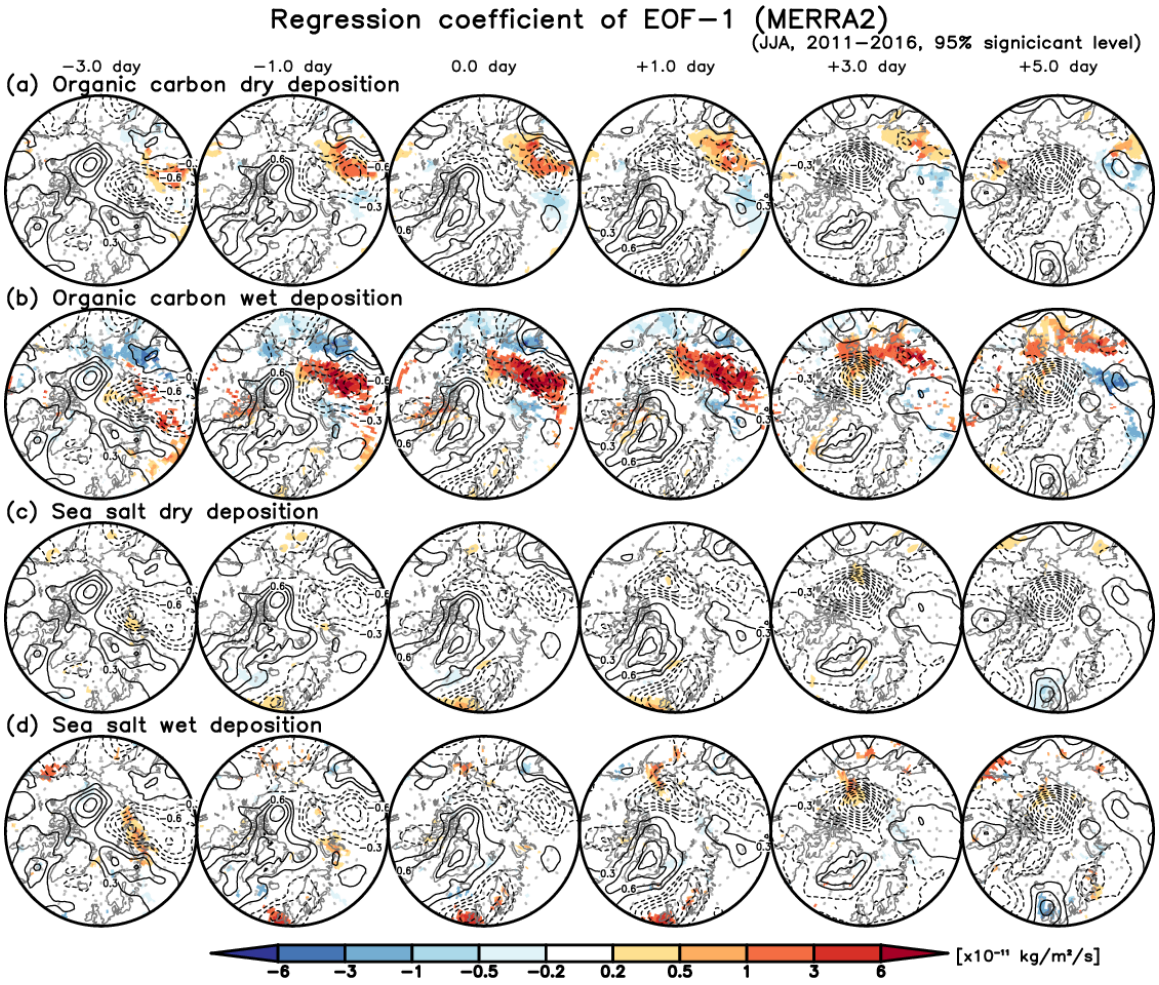

Figure S5. Similar to Fig. 10, bur for MERRA2.

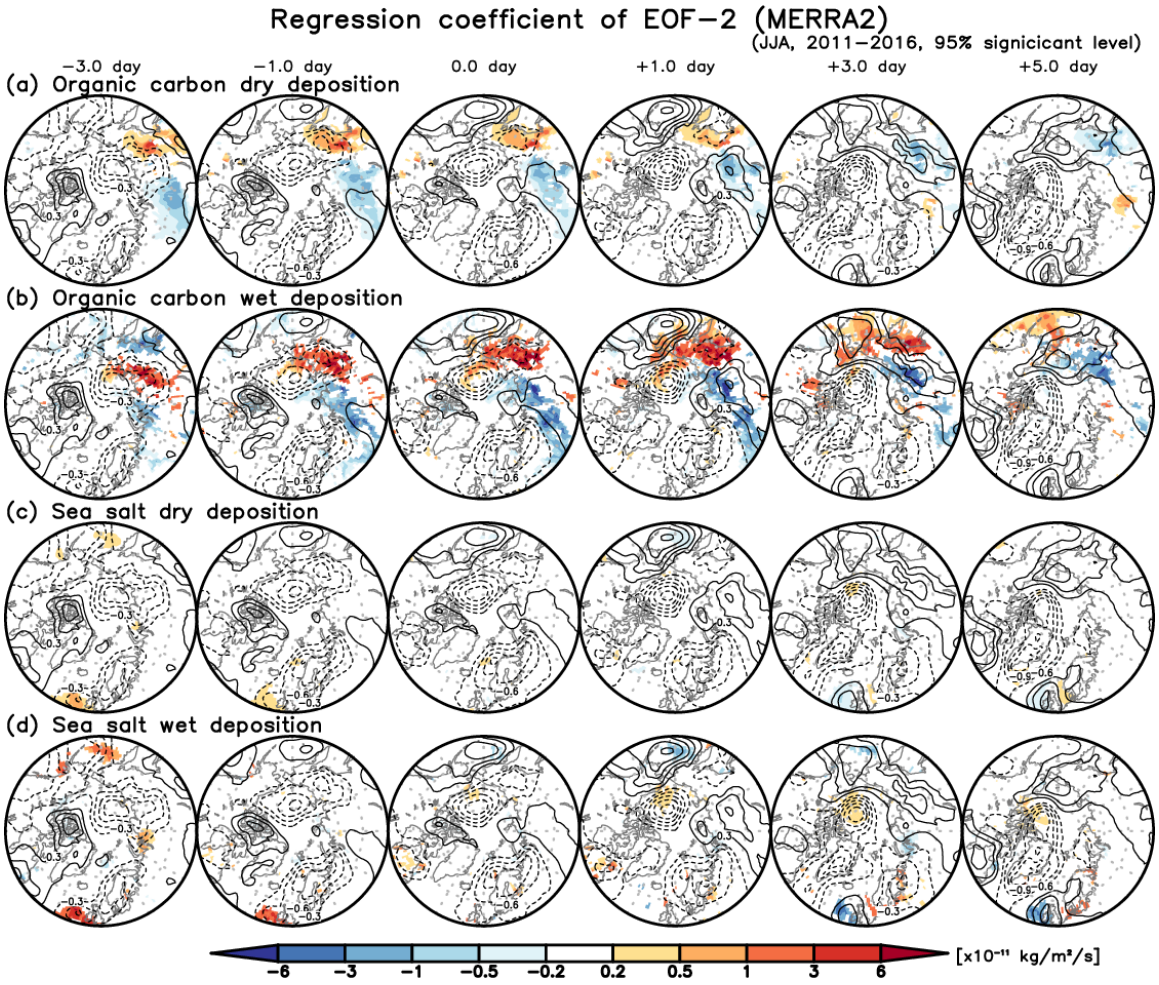

Figure S6. Similar to Fig S4, but for PC-2.