Supplement of

3D assimilation and radiative impact assessment of aerosol black carbon over the Indian region using aircraft, balloon, ground-based, and multi-satellite observations

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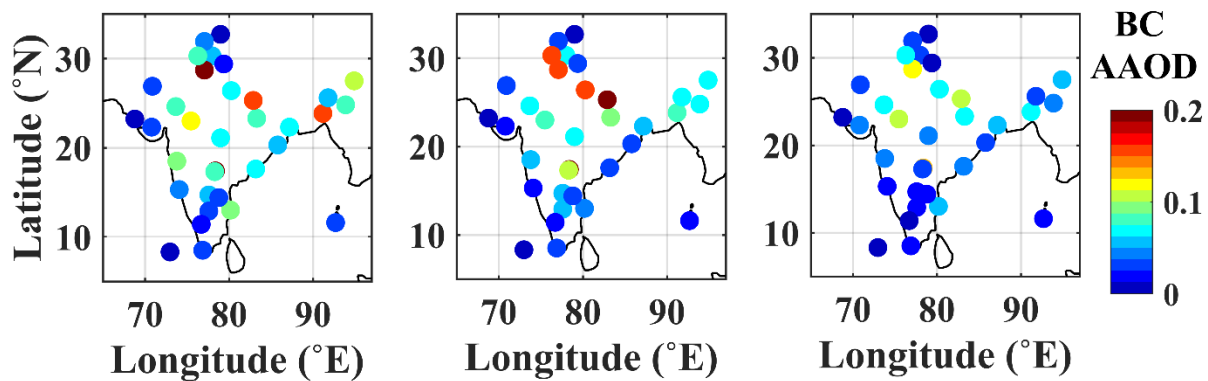
Figure S1. Variation of BC AAOD at the ARFINET measurement sites for (a) DJF, (b) MAM, and (c) ON seasons.
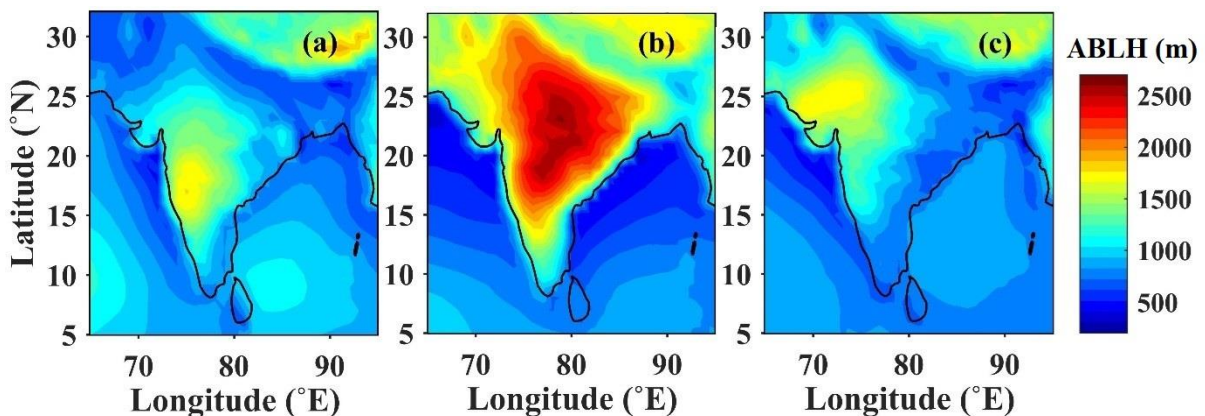
Figure S2. Seasonal mean atmospheric boundary layer height (ABLH) from MERRA-2 reanalysis for (a) DJF, (b) MAM, and (c) ON seasons.
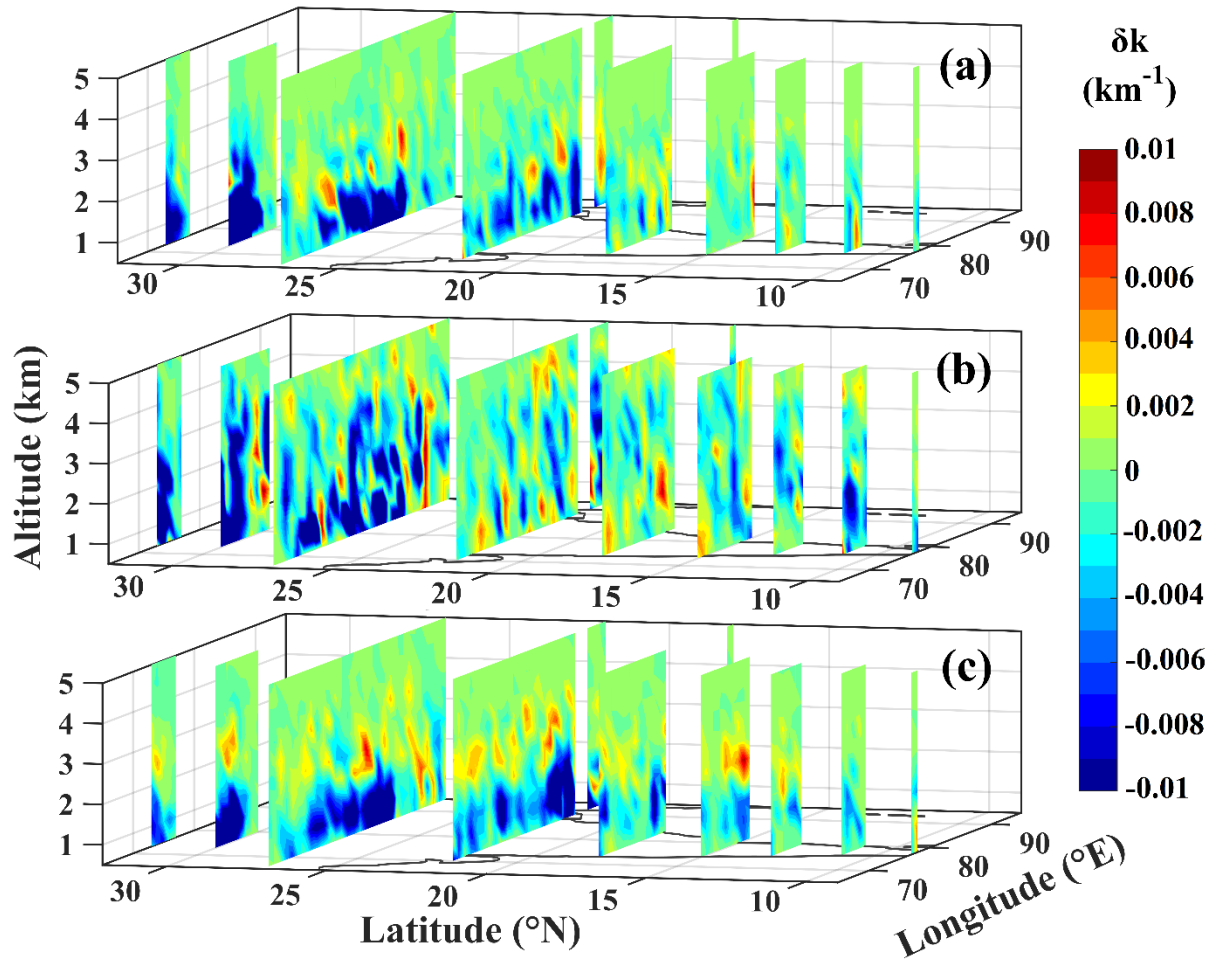
Figure S3. Variation in δk during (a) DJF, (b) MAM, and (c) ON seasons.

Table S1. Essential details of the ARFINET stations.

Sl. No.	Station name	Station code	Latitude (°N)	Longitude (°E)	Altitude (m amsl)
1	Agartala	AGR	91.2	23.8	13
2	Ahmedabad	AMD	23	75.5	53
3	Anantapur	ATP	14.7	77.6	335
4	Bhubaneswar	BBR	20.3	85.8	58
5	Bengaluru	BLR	12.9	85.8	920
6	Chennai	CHN	13	80.2	6
7	Dibrugarh	DBR	27.5	94.9	108
8	Dehradun	DDN	30.3	78	640
9	Delhi	DEL	28.7	77.1	300

10	Goa	GOA	15.3	74.1	8
11	Hyderabad (urban)	HDN	17.4	78.4	542
12	Hyderabad (suburban)	HDT	17.3	78.3	542
13	Hanle	HNL	32.7	79	4500
14	Imphal	IPH	24.8	93.9	786
15	Jaisalmer	JSL	26.9	70.9	225
16	Kadappa	KDP	14.4	78.8	138
17	Kharagpur	KGP	22.3	87.2	61
18	Kanpur	KNP	26.4	80.3	126
19	Kullu	KLU	31.9	77.1	1279
20	Naliya	NAL	23.2	68.6	26
21	Nagpur	NGP	21.1	79	310
22	Nainital	NTL	29.4	79.4	2084
23	Ooty	OTY	11.4	76.7	2240
24	Patiala	PTL	30.3	76.3	257
25	Pune	PUN	18.5	73.8	560
26	Rajkot	RKT	22.3	70.8	134
27	Ranchi	RNC	23.3	83.3	651
28	Shillong	SHN	25.6	91.8	1525
29	Thiruvananthapuram	TVM	8.5	76.9	10
30	Udaipur	UDP	24.6	73.7	423
31	Varanasi	VNS	25.3	82.9	81
32	Vishakhapatnam	VSK	17.6	83.2	45