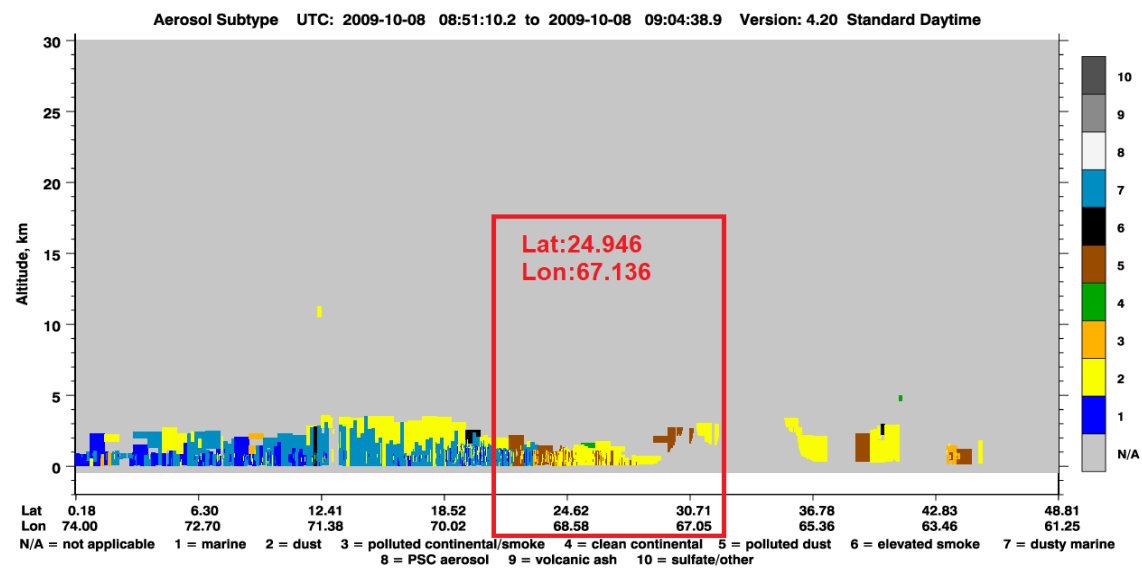
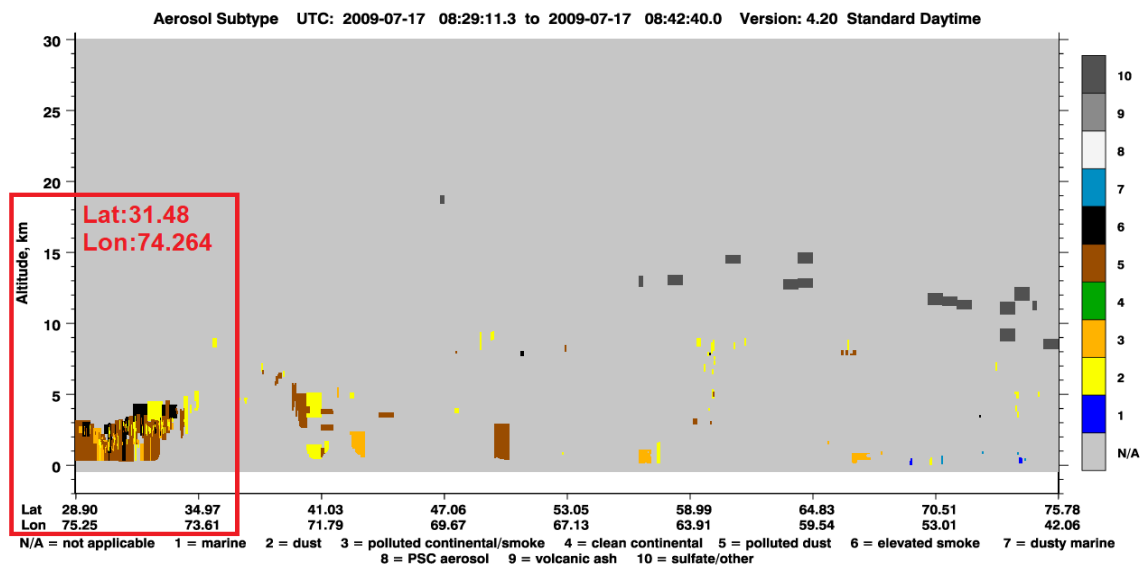


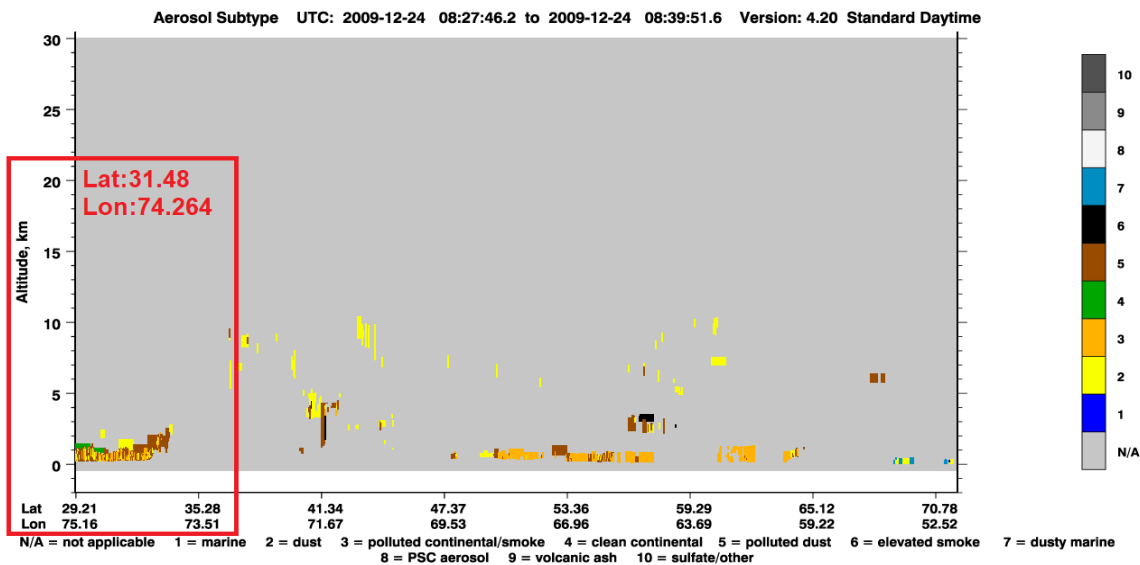
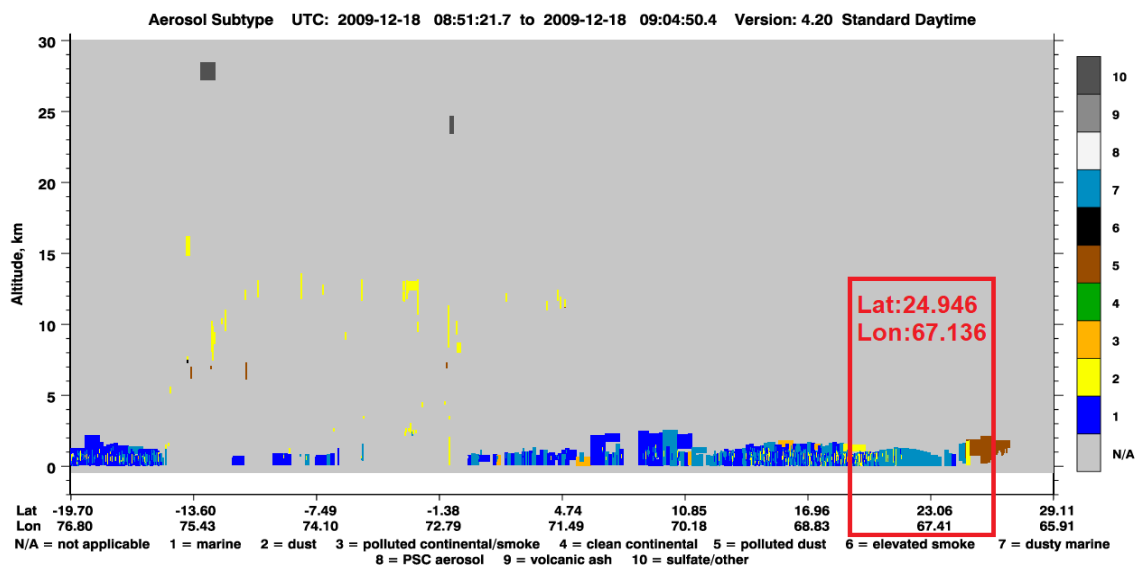
Supplementary Material

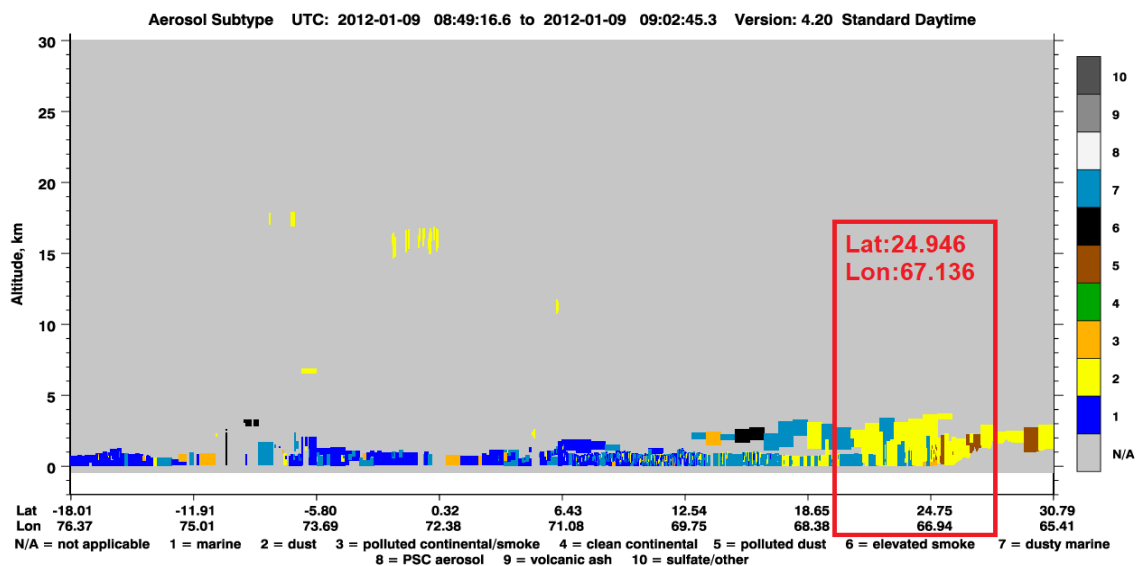
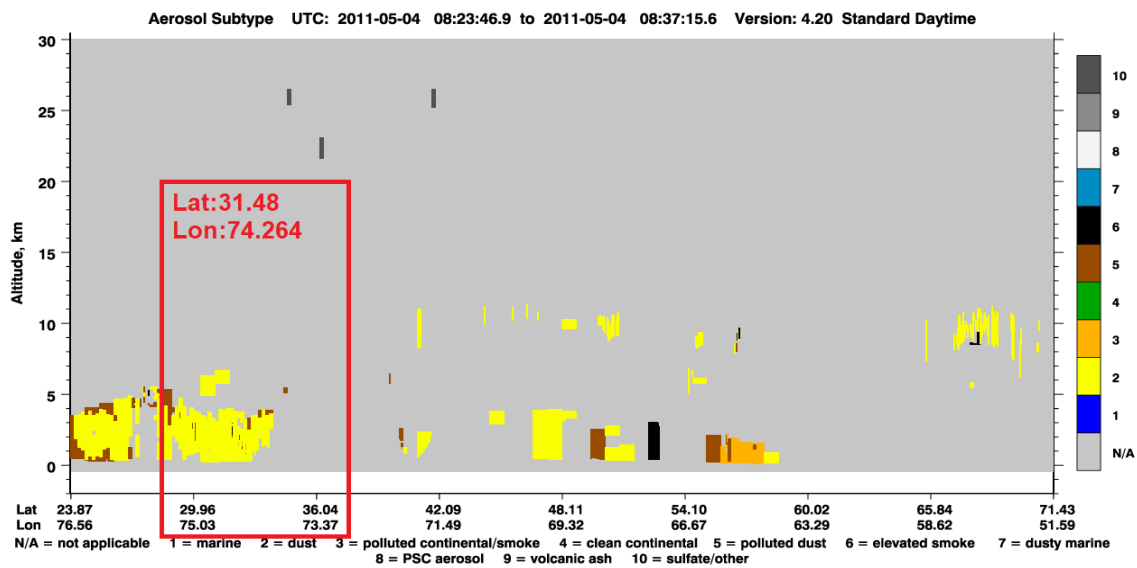
Table S1: List of the Pakistani cities used to extract spatially distributed Terra-MODIS coincident DTB AOD and AE retrievals.

Sr. No.	Province	City	Latitude (N)	Longitude (E)
1	Khyber Pakhtunkhwa	Abbottabad	34.1227	73.2529
2	Jammu and Kashmir	Anantnag	33.8039	75.3321
3	Punjab	Attock	33.4835	72.2992
4	Baluchistan	Awaran	26.2653	65.3597
5	Punjab	Bahawalnagar	29.6429	73.0632
6	Punjab	Bahawalpur	28.8124	71.7347
7	Khyber Pakhtunkhwa	Bajaur	34.7507	71.5027
8	Jammu and Kashmir	Baramula	34.3569	74.668
9	Punjab	Bhakkar	31.6539	71.407
10	Baluchistan	Chagai	29.0332	63.5799
11	Khyber Pakhtunkhwa	Chilas	35.4165	74.3164
12	Khyber Pakhtunkhwa	Chitral	36.2275	72.2366
13	Khyber Pakhtunkhwa	Dir	35.1368	71.9818
14	Jammu and Kashmir	Doda	33.4387	75.9341
15	Punjab	Faisalabad	31.2357	73.1212
16	Punjab	Gujranwala	32.1566	74.19
17	Punjab	Gujrat	32.7276	73.9609
18	Khyber Pakhtunkhwa	Haripur	33.9988	72.8967
19	Sindh	Hyderabad	25.3759	68.5308
20	Capital Territory	Islamabad	33.6692	73.0667
21	Sindh	Jakobabad	28.2338	68.5994
22	Jammu and Kashmir	Jammu	32.7355	74.8955
23	Punjab	Jhang	31.3143	72.3404
24	Punjab	Jhelum	32.8339	73.2739
25	Baluchistan	Kalat	28.7852	66.4496
26	Sindh	Karachi	24.97247	67.08909
27	Jammu and Kashmir	Kathua	32.5483	75.5896
28	Baluchistan	Kech	26.0169	63.0714
29	Baluchistan	Kharan	27.9555	64.6405
30	Baluchistan	Khuzdar	27.5	66.7013
31	Khyber Pakhtunkhwa	Khyber	33.9565	71.0608

32	Khyber Pakhtunkhwa	Kohat	33.4631	71.5651
33	Khyber Pakhtunkhwa	Kohistan	35.3486	73.1892
34	Jammu and Kashmir	Kupwara	34.5413	74.2222
35	Khyber Pakhtunkhwa	Kurram	33.7052	70.3402
36	Punjab	Lahore	31.4682	74.3541
37	Sindh	Larkana	27.616	67.8547
38	Baluchistan	Lasbela	25.8119	66.653
39	Punjab	Layyah	30.9814	71.248
40	Khyber Pakhtunkhwa	Mansehra	34.7014	73.4119
41	Punjab	Mianwali	32.6628	71.5248
42	Azad and Jammu Kashmir	Mirpur	33.2195	73.7069
43	Sindh	Mirpurkhas	25.4441	69.4278
44	Punjab	Multan	29.8998	71.4102
45	Azad and Jammu Kashmir	Muzaffarabad	34.3077	73.6622
46	Punjab	Okara	30.8858	73.4887
47	Punjab	Pakpattan	30.3012	73.2181
48	Baluchistan	Panjgur	26.7471	64.1895
49	Khyber Pakhtunkhwa	Peshawar	33.9747	71.5632
50	Azad and Jammu Kashmir	Punch	33.7457	74.3432
51	Baluchistan	Quetta	30.1331	66.7705
52	Azad and Jammu Kashmir	Rajauri	33.2612	74.4564
53	Punjab	Sargodha	32.1003	72.7186
54	Khyber Pakhtunkhwa	Shangla	34.8093	72.7267
55	Punjab	Sialkot	32.4925	74.5311
56	Baluchistan	Sibi	29.889	67.9162
57	Azad and Jammu Kashmir	Srinagar	34.2455	75.1026
58	Sindh	Sukkur	27.5144	69.2008
59	Khyber Pakhtunkhwa	Swabi	34.1364	72.4683
60	Khyber Pakhtunkhwa	Swat	35.2547	72.4611
61	Azad and Jammu Kashmir	Udhampur	33.2072	75.0005
62	Punjab	Vehari	29.9864	72.3771
63	Baluchistan	Ziarat	30.4256	67.5518







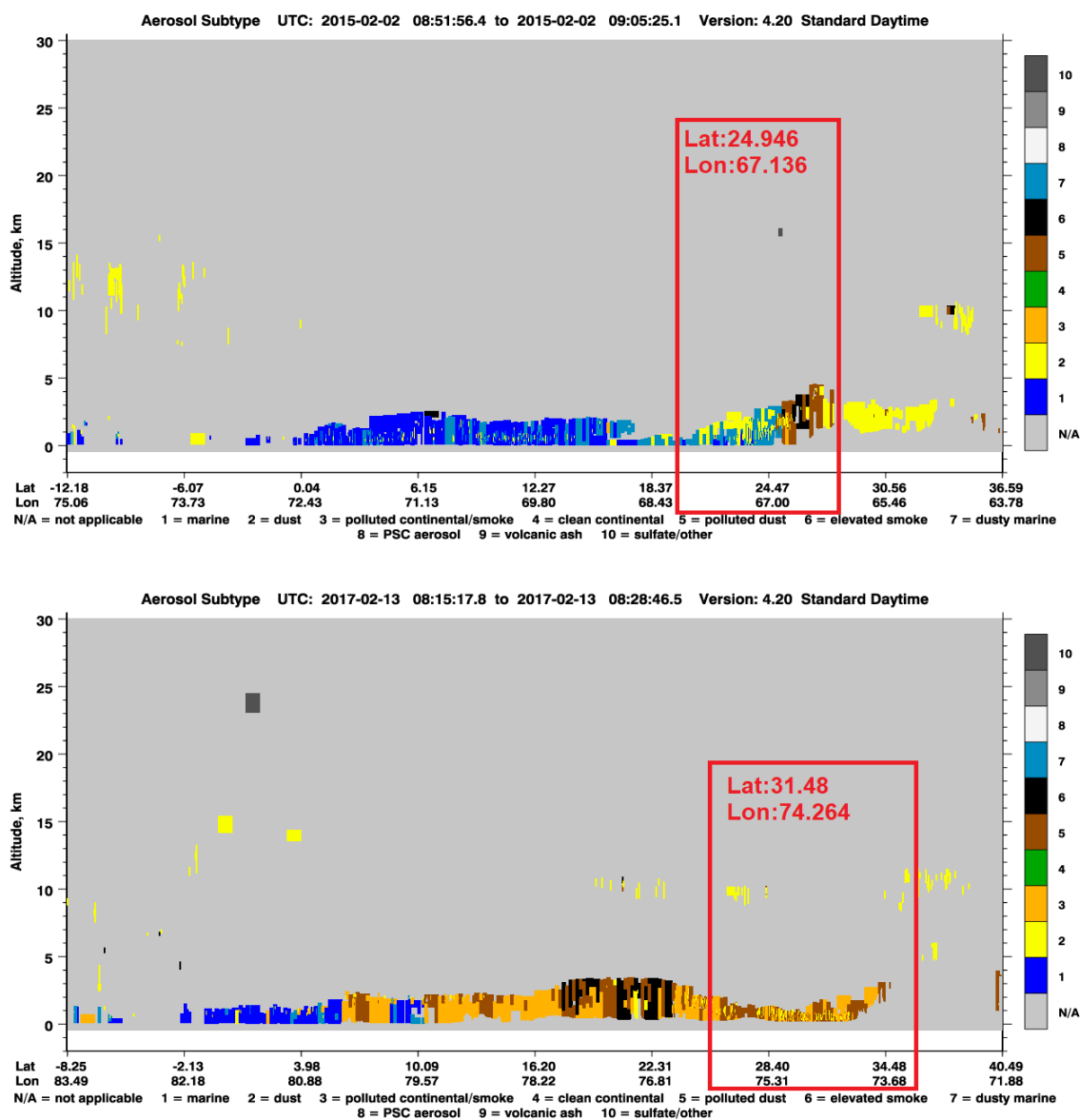


Figure S1: Aerosol subtypes by CALIPSO over Lahore and Karachi AERONET sites