



Supplement of

Siberian wildfire smoke observations from space-based multi-angle imaging: a multi-year regional analysis of smoke particle properties, their evolution, and comparisons with North American boreal fire plumes

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Table S1. Supplementary information on the MISR components from Research Aerosol (RA) retrieval results. The algorithm version is summarized in Sect. 2.1 and Table 1 in the main text, with a 774-mixture climatology. Particle type includes four elements (Table 1 in the main text): shape—spherical (Sph) or non-spherical (Nsph); size—very small (Vsm), small (Sm), medium (Me), and large (La); light-absorption—non-absorbing (Nab), weakly absorbing (Wab), moderately absorbing (Mab), and strongly absorbing (Sab); spectral light-absorption profile—roughly equal in all spectral bands (flat), or varying between spectral bands, with greater absorption at shorter wavelengths (steep). The table is split into two parts due to size constraints. Part A displays, for each component, the single scattering albedo (SSA) values across all four MISR wavelengths. Part B displays, for each component, the refractive indices across all four wavelengths, the upper and lower bounds between which particle size is log-normally distributed, the variance of said distribution, and the effective radius r_e . The components are listed in the same order in both tables

Part A.

Particle Shape, Size, Light-Absorption	SSA ^a			
	446	558	672	866
Sph-VSm-Sab (flat)	0.84	0.79	0.73	0.62
Sph-VSm-Sab (steep)	0.76	0.80	0.83	0.76
Sph-VSm-Mab (flat)	0.92	0.89	0.86	0.78
Sph-VSm-Mab (steep)	0.88	0.90	0.90	0.87
Sph-Sm-Sab (flat)	0.81	0.79	0.78	0.74
Sph-Sm-Sab (steep)	0.72	0.80	0.87	0.84
Sph-Sm-Mab (flat)	0.90	0.89	0.88	0.85
Sph-Sm-Mab (steep)	0.85	0.90	0.93	0.92
Sph-Me-Sab (flat)	0.78	0.80	0.80	0.81
Sph-Me-Sab (steep)	0.70	0.80	0.88	0.89
Sph-Me-Mab (flat)	0.89	0.90	0.90	0.90
Sph-Me-Mab (steep)	0.83	0.90	0.94	0.94
Sph-VSm-Nab	1.0	1.0	1.0	1.0
Sph-Sm-Nab	1.0	1.0	1.0	1.0
Sph-Me-Nab	1.0	1.0	1.0	1.0
Sph-La-Nab	1.0	1.0	1.0	1.0
Nsph-La-Wab	0.91	0.95	0.97	0.98

Part B.

Particle Shape, Size, Light-Absorption	Imaginary Refractive Index ($\times 10^2$) ^a				Real Refractive Index				r_o ^b	r_e ^b	r_l ^b	σ ^b
	446	558	672	866	446	558	672	866				
Sph-VSm-Sab (flat)	2.19	2.19	2.19	2.19	1.60	1.60	1.60	1.60	0.001	0.06	0.4	0.28
Sph-VSm-Sab (steep)	3.07	1.80	1.04	0.930	1.55	1.55	1.55	1.55	0.001	0.06	0.4	0.28
Sph-VSm-Mab (flat)	0.69	0.693	0.69	0.69	1.50	1.50	1.50	1.50	0.001	0.06	0.4	0.28
Sph-VSm-Mab (steep)	1.03	0.608	0.429	0.31	1.475	1.475	1.475	1.475	0.001	0.06	0.4	0.28
Sph-Sm-Sab (flat)	4.66	4.66	4.66	4.66	1.60	1.60	1.60	1.60	0.001	0.12	0.75	0.32
Sph-Sm-Sab (steep)	6.99	4.11	2.23	2.11	1.55	1.55	1.55	1.55	0.001	0.12	0.75	0.32
Sph-Sm-Mab (flat)	1.69	1.69	1.69	1.69	1.50	1.50	1.50	1.50	0.001	0.12	0.75	0.32
Sph-Sm-Mab (steep)	2.62	1.54	0.910	0.794	1.475	1.475	1.475	1.475	0.001	0.12	0.75	0.32
Sph-Me-Sab (flat)	4.58	4.58	4.58	4.58	1.60	1.60	1.60	1.60	0.001	0.26	1.5	0.35
Sph-Me-Sab (steep)	7.41	4.36	2.36	2.24	1.55	1.55	1.55	1.55	0.001	0.26	1.5	0.35
Sph-Me-Mab (flat)	1.85	1.85	1.85	1.85	1.50	1.50	1.50	1.50	0.001	0.26	1.5	0.35
Sph-Me-Mab (steep)	3.00	1.76	1.02	0.911	1.475	1.475	1.475	1.475	0.001	0.26	1.5	0.35
Sph-VSm-Nab	0	0	0	0	1.40	1.40	1.40	1.40	0.001	0.06	0.40	0.28
Sph-Sm-Nab	0	0	0	0	1.40	1.40	1.40	1.40	0.001	0.12	0.75	0.32
Sph-Me-Nab	0	0	0	0	1.40	1.40	1.40	1.40	0.001	0.26	1.5	0.35
Sph-La-Nab	0	0	0	0	1.40	1.40	1.40	1.40	0.1	1.28	10	0.45
Nsph-La-Wab	0.219	0.209	0.198	0.180	1.542	1.537	1.532	1.524	N/A	1.21	N/A	N/A

^a Wavelengths are given in nm.

^b Each spherical component has a designated effective radius (r_e), with values ranging from a minimum (r_o) to a maximum (r_l) particle size. Particle size is log-normally distributed within these bounds with variance σ . Particle size is given in μm .

Table S2. The yearly distribution of Siberian plumes observed in this study, across all months.

	2017	2018	2019	2020	2021
No. Plumes	529	770	986	681	750

Table S3. Land cover types as defined by the MODIS International Geosphere-Biosphere Programme (IGBP) classification method, the frequency with which each type was observed in this study, and how each type corresponds to the plume-type definitions used in this study.

IGBP Land Cover Type	Corresponds to ^a	IGBP Description	Observational Frequency ^b
Evergreen Needleleaf Forests	“Forest” plumes	Dominated by evergreen conifer trees (canopy >2m). Tree cover >60%.	2.62%
Evergreen Broadleaf Forests	“Forest” plumes	Dominated by evergreen broadleaf and palmate trees (canopy >2m). Tree cover >60%.	0%
Deciduous Needleleaf Forests	“Forest” plumes	Dominated by deciduous needleleaf (larch) trees (canopy >2m). Tree cover >60%.	9.32%
Deciduous Broadleaf Forests	“Forest” plumes	Dominated by deciduous broadleaf trees (canopy >2m). Tree cover >60%.	1.05%
Mixed Forests	“Forest” plumes	Dominated by neither deciduous nor evergreen (40-60% of each) tree type (canopy >2m). Tree cover >60%.	3.51%
Closed Shrublands	N/A	Dominated by woody perennials (1-2m height) >60% cover.	0%
Open Shrublands	“Grassy” plumes	Dominated by woody perennials (1-2m height) 10-60% cover.	16.5%
Woody Savannas	“Woody” plumes	Tree cover 30-60% (canopy >2m).	40.5%
Savannas	“Grassy” plumes	Tree cover 10-30% (canopy >2m).	52.2%
Grasslands	“Grassy” plumes	Dominated by herbaceous annuals (<2m).	1.85%
Permanent Wetlands	N/A	Permanently inundated lands with 30-60% water cover and >10% vegetated cover.	< 0.1%
Croplands	N/A	At least 60% of area is cultivated cropland.	0.255%
Urban and Built-up Lands	N/A	At least 30% impervious surface area including building materials, asphalt, and vehicles.	0%
Cropland/Natural Vegetation Mosaics	N/A	Mosaics of small-scale cultivation 40-60% with natural tree, shrub, or herbaceous vegetation.	0.567%
Permanent Snow and Ice	N/A	At least 60% of area is covered by snow and ice for at least 10 months of the year.	0%
Barren	N/A	At least 60% of area is non-vegetated barren (sand, rock, soil) areas with less than 10% vegetation.	0%
Water Bodies	N/A	At least 60% of area is covered by permanent water bodies.	< 0.1%

^a For each plume, we determine which land cover types are associated with the MODIS fire pixels and then calculate the percent frequency that each land cover type is observed within the whole plume. If this reaches 80% or more for a certain land cover type or class of land cover types, then the plume is categorized appropriately. For example, if, within a given plume, 40% of the land cover type observations are Savannas, 20% are Mixed Forests, and 40% are Grasslands, the plume is categorized as “Grassy.”

^b The number of times a given land cover type is observed as being associated with a MODIS fire pixel, divided by the total number of identified fire pixels ($\times 100$). Note that the spatial resolution of the MODIS IGBP land cover type product is finer than that of the MODIS fire pixel product, so a given hot spot is associated with two IGBP grid cells that can contain either the same or different land cover types (the sum of this column is therefore greater than 100%).

Table S4A. Statistical summary of key variables, stratified by month, for Forest plumes in Siberia

(F plumes)		Apr.	May	Jun.	Jul.	Aug.	Sept.	All Mos.
No. Plumes		7	7	19	112	65	2	212
MINX Median Plume Height	mean	0.958	1.377	1.350	1.274	1.243	1.211	1.264
	+/- σ	0.600	0.562	0.504	0.403	0.395	0.173	0.430
	median	0.907	1.121	1.317	1.208	1.191	1.211	1.196
MISR Median Plume AOD	mean	0.495	1.044	0.750	1.311	1.420	1.140	1.257
	+/- σ	0.165	0.261	0.445	1.060	1.248	0.292	1.071
	median	0.523	0.900	0.571	0.929	0.967	1.140	0.836
MISR SSA ₅₅₈	mean	0.860	0.864	0.931	0.955	0.934	0.849	0.940
	+/- σ	0.036	0.050	0.046	0.027	0.034	0.012	0.041
	median	0.844	0.870	0.953	0.962	0.945	0.849	0.954
MISR ANG	mean	1.757	1.817	1.721	1.610	1.607	1.505	1.630
	+/- σ	0.221	0.269	0.232	0.228	0.258	0.086	0.244
	median	1.799	1.956	1.805	1.599	1.634	1.505	1.626
MISR BIS AOD Fraction	mean	0.777	0.820	0.456	0.340	0.526	0.742	0.442
	+/- σ	0.182	0.175	0.314	0.196	0.208	0.012	0.248
	median	0.847	0.868	0.340	0.332	0.481	0.742	0.387
MISR Small Particle AOD Fraction	mean	0.609	0.621	0.542	0.471	0.498	0.520	0.496
	+/- σ	0.183	0.209	0.294	0.214	0.238	0.062	0.231
	median	0.561	0.620	0.528	0.488	0.529	0.520	0.521
MISR Medium Particle AOD Fraction	mean	0.001	0.127	0.166	0.333	0.285	0.000	0.282
	+/- σ	0.003	0.248	0.214	0.286	0.291	0.000	0.286
	median	0.000	0.000	0.042	0.354	0.195	0.000	0.205

Table S4B. Statistical summary of key variables, stratified by month, for Woody plumes in Siberia

(W plumes)		Apr.	May	Jun.	Jul.	Aug.	Sept.	All Mos.
No. Plumes		3	20	75	323	181	47	649
MINX Median Plume Height	mean	2.878	1.651	1.566	1.338	1.300	0.799	1.331
	+/- σ	1.934	0.453	0.539	0.423	0.449	0.264	0.499
	median	2.406	1.731	1.520	1.310	1.284	0.776	1.291
MISR Median Plume AOD	mean	0.707	1.102	0.924	1.495	1.502	1.396	1.408
	+/- σ	0.289	0.795	0.698	1.099	1.124	0.860	1.059
	median	0.831	0.852	0.704	1.227	1.224	1.469	1.137
MISR SSA ₅₅₈	mean	0.885	0.907	0.931	0.943	0.940	0.860	0.933
	+/- σ	0.057	0.034	0.043	0.033	0.034	0.048	0.042
	median	0.874	0.899	0.939	0.949	0.947	0.863	0.945
MISR ANG	mean	1.354	1.718	1.653	1.632	1.615	1.925	1.653
	+/- σ	0.332	0.198	0.301	0.273	0.251	0.237	0.278
	median	1.243	1.748	1.689	1.607	1.626	1.959	1.653
MISR BIS AOD Fraction	mean	0.510	0.570	0.436	0.417	0.460	0.787	0.463
	+/- σ	0.367	0.298	0.291	0.244	0.214	0.260	0.264
	median	0.665	0.641	0.377	0.388	0.454	0.895	0.442
MISR Small Particle AOD Fraction	mean	0.400	0.520	0.463	0.476	0.486	0.626	0.489
	+/- σ	0.158	0.206	0.305	0.245	0.218	0.211	0.245
	median	0.452	0.563	0.455	0.473	0.505	0.654	0.504
MISR Medium Particle AOD Fraction	mean	0.000	0.024	0.215	0.288	0.273	0.072	0.257
	+/- σ	0.000	0.087	0.317	0.313	0.279	0.139	0.300
	median	0.000	0.000	0.000	0.182	0.216	0.000	0.121

Table S4C. Statistical summary of key variables, stratified by month, for Grassy plumes in Siberia

(G plumes)		Apr.	May	Jun.	Jul.	Aug.	Sept.	All Mos.
No. Plumes		33	18	317	570	575	73	1596
MINX Median Plume Height	mean	1.472	1.713	1.478	1.450	1.345	0.865	1.395
	+/- σ	0.846	0.487	0.631	0.608	0.528	0.422	0.598
	median	1.165	1.636	1.407	1.375	1.267	0.773	1.321
MISR Median Plume AOD	mean	0.803	0.766	1.026	1.466	1.622	0.945	1.387
	+/- σ	0.389	0.296	0.612	1.021	1.104	0.702	0.992
	median	0.770	0.736	0.890	1.239	1.318	0.726	1.140
MISR SSA₅₅₈	mean	0.875	0.876	0.920	0.934	0.927	0.884	0.924
	+/- σ	0.038	0.043	0.037	0.035	0.038	0.041	0.039
	median	0.871	0.870	0.925	0.942	0.937	0.889	0.934
MISR ANG	mean	1.964	1.750	1.742	1.654	1.626	1.827	1.678
	+/- σ	0.166	0.339	0.260	0.275	0.239	0.224	0.265
	median	1.973	1.864	1.777	1.670	1.614	1.853	1.689
MISR BIS AOD Fraction	mean	0.693	0.573	0.572	0.475	0.546	0.731	0.538
	+/- σ	0.197	0.310	0.245	0.247	0.217	0.205	0.242
	median	0.723	0.610	0.581	0.451	0.524	0.758	0.529
MISR Small Particle AOD Fraction	mean	0.596	0.433	0.560	0.490	0.479	0.647	0.509
	+/- σ	0.213	0.305	0.250	0.246	0.226	0.156	0.241
	median	0.597	0.465	0.588	0.522	0.511	0.667	0.544
MISR Medium Particle AOD Fraction	mean	0.003	0.000	0.138	0.218	0.242	0.036	0.201
	+/- σ	0.015	0.001	0.228	0.276	0.281	0.089	0.268
	median	0.000	0.000	0.000	0.074	0.134	0.000	0.038

Table S4D. Statistical summary of key variables, stratified by month, for Peat plumes in Siberia

(P plumes)		Apr.	May	Jun.	Jul.	Aug.	Sept.	All Mos.
No. Plumes		8	18	20	104	12	11	173
MINX Median Plume Height	mean	1.521	1.342	1.584	0.917	1.550	0.555	1.087
	+/- σ	0.492	0.703	0.575	0.284	0.356	0.093	0.503
	median	1.578	1.058	1.481	0.853	1.648	0.519	0.920
MISR Median Plume AOD	mean	0.746	1.163	1.020	0.850	1.971	1.155	0.995
	+/- σ	0.471	0.742	0.489	0.721	1.682	1.148	0.880
	median	0.511	0.947	0.930	0.511	1.137	1.093	0.693
MISR SSA₅₅₈	mean	0.849	0.892	0.923	0.932	0.933	0.891	0.920
	+/- σ	0.044	0.038	0.027	0.034	0.026	0.035	0.040
	median	0.852	0.901	0.916	0.936	0.942	0.891	0.927
MISR ANG	mean	1.894	1.718	1.800	1.780	1.579	1.783	1.768
	+/- σ	0.199	0.253	0.196	0.252	0.296	0.298	0.258
	median	1.880	1.742	1.805	1.816	1.675	1.731	1.797
MISR BIS AOD Fraction	mean	0.793	0.678	0.606	0.528	0.515	0.803	0.582
	+/- σ	0.223	0.201	0.242	0.245	0.204	0.157	0.249
	median	0.884	0.670	0.721	0.528	0.524	0.851	0.620
MISR Small Particle AOD Fraction	mean	0.557	0.518	0.618	0.641	0.446	0.646	0.608
	+/- σ	0.203	0.213	0.184	0.194	0.259	0.198	0.209
	median	0.611	0.543	0.598	0.669	0.481	0.713	0.640
MISR Medium Particle AOD Fraction	mean	0.006	0.130	0.121	0.145	0.303	0.176	0.154
	+/- σ	0.016	0.227	0.190	0.205	0.324	0.232	0.223
	median	0.000	0.000	0.000	0.000	0.202	0.169	0.000

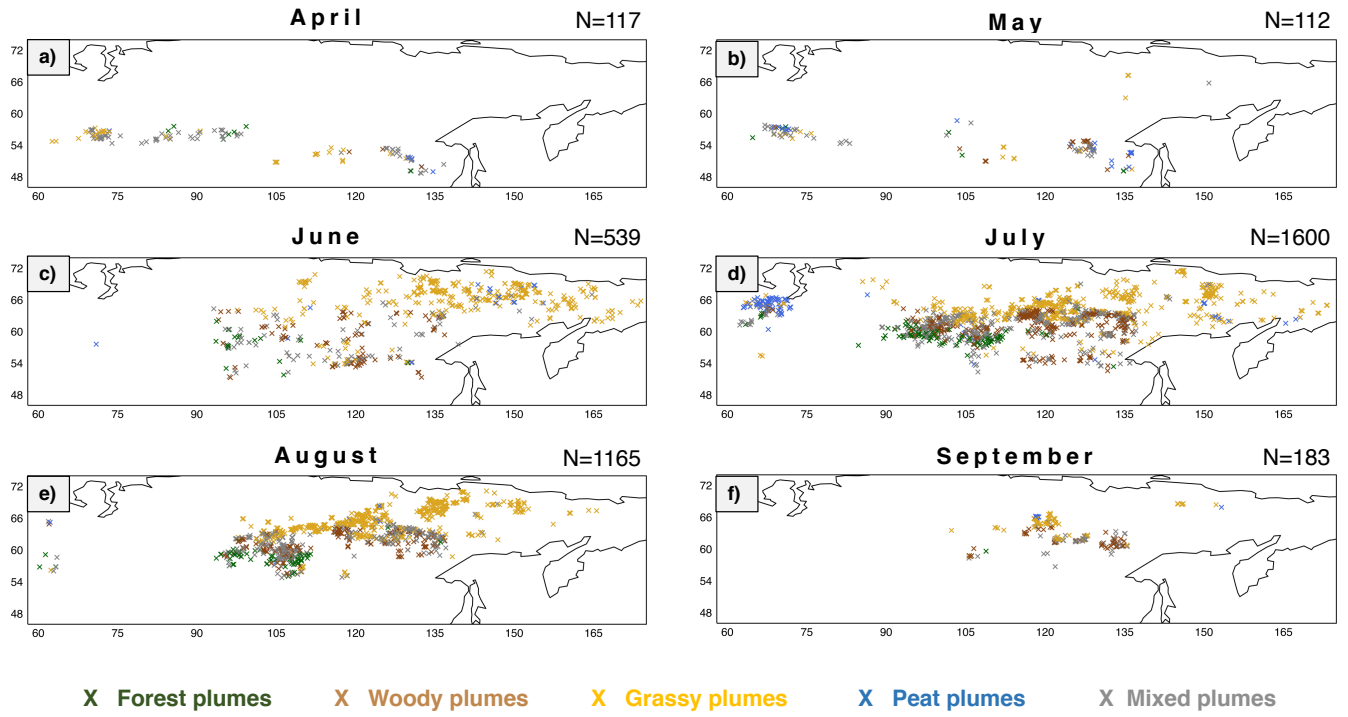


Figure S1. Locations of all 3,716 Siberian plume used in this study, stratified by the month in which they were observed by MISR (across all years). Markers are color-coded by plume types, which are defined at the beginning of Section 3 in the main text.

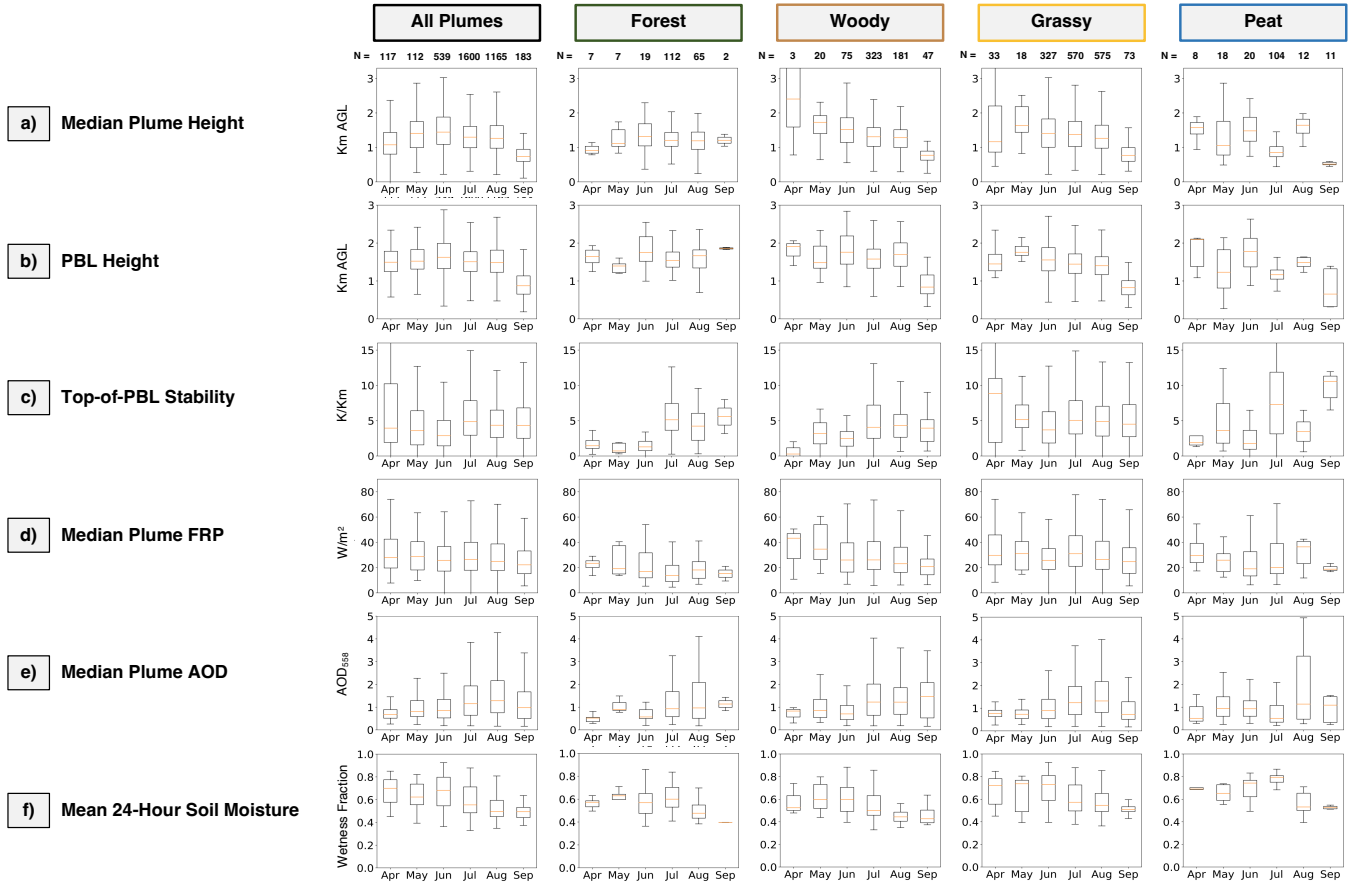


Figure S2. Box plots of several key plume properties for all 3,716 Siberian plumes (left column) and for each plume type (columns 2 through 5), stratified by month. The boxes represent the central 50% of the data, with the lower quartile (Q1) on the bottom, the upper quartile (Q3) on the top, and the median in the middle depicted with a red line. The whiskers extend to 1.5 times the interquartile range from the first and third quartiles of the data ($Q1 - 1.5 \times [Q3 - Q1]$ and $Q3 + 1.5 \times [Q3 - Q1]$); points outside this range are considered outliers and are not plotted. **(a)** Retrieved median plume heights, as retrieved by MINX. **(b)** The height of the planetary boundary layer (PBL) from MERRA-2 reanalysis. **(c)** Estimated atmospheric stability at the top of MERRA-2 PBL. **(d)** the plume-median MODIS fire radiative power (FRP). **(e)** the plume-median aerosol optical depth at 558 nm, as retrieved by MISR. **(f)** the mean surface moisture content from the 24 hours preceding MISR observation, from MERRA-2 reanalysis.

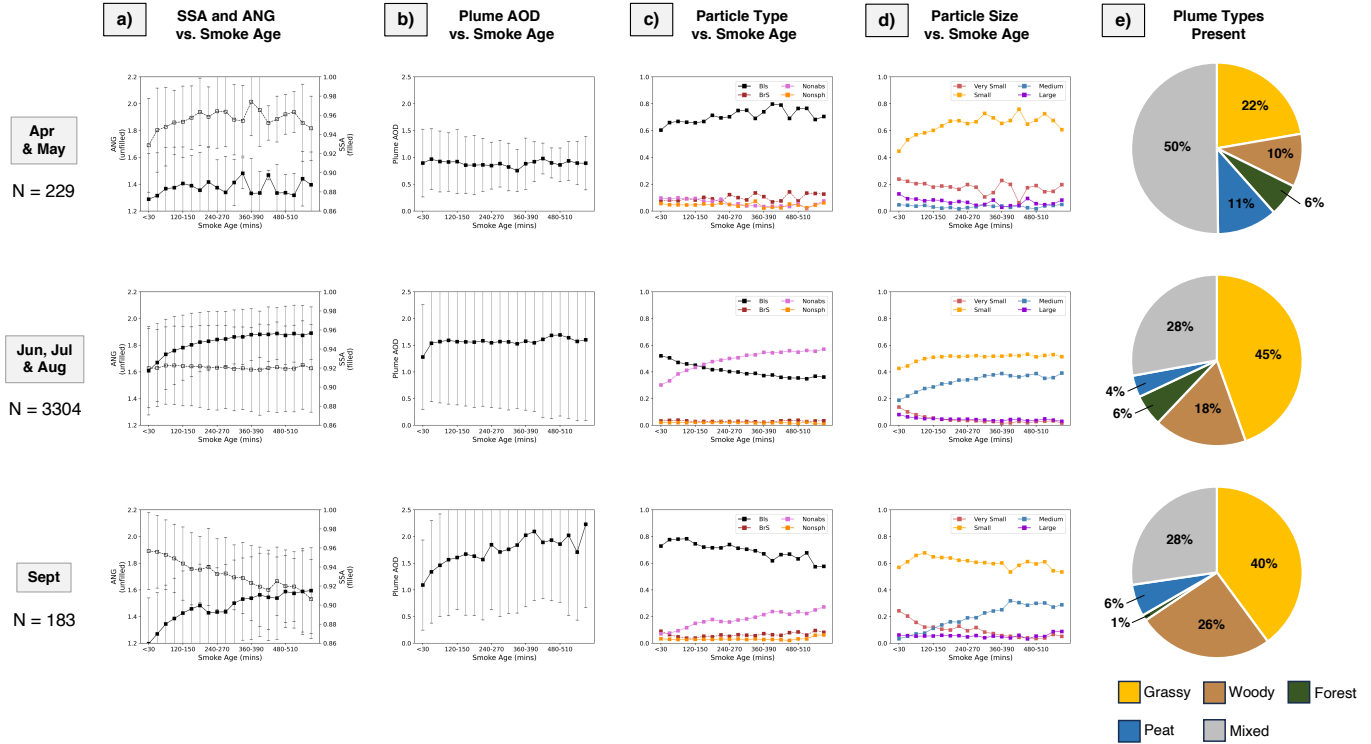


Figure S3. Key MISR-retrieved plume properties according to season. **(a)** Ångström exponent (solid line, left y-axis) and mid-visible single-scattering albedo (dashed line, right y-axis) for all plume types, as a function of smoke age. **(b)** plume-median mid-visible aerosol optical depth (AOD) as a function of smoke age. **(c)** The fraction of mid-visible AOD that can be attributed to each particle type category, as a function of smoke age – BIS = black smoke; BrS = brown smoke; Nonabs = non-absorbing; Nonsph = non-spherical. **(d)** The fraction of mid-visible AOD that can be attributed to each particle size category, as a function of smoke age – very small, small, medium, and large. **(e)** The fraction of each plume type (as defined in this study) present in the sample.

Estimated Percent of Peatlands + Fire Locations

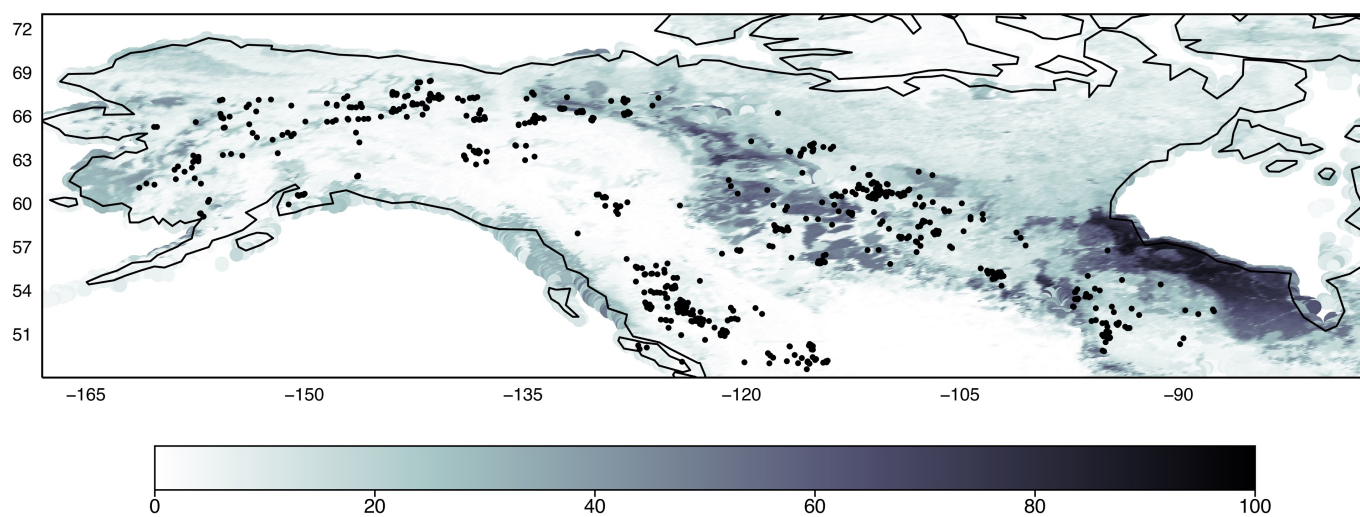


Figure S4. Locations of all fires (black dots) included in our previous study of Canadian and Alaskan wildfires (Junghenn Noyes et al., 2022), overlaid on the estimated percent of peatlands from Hugelius et al. (2021).

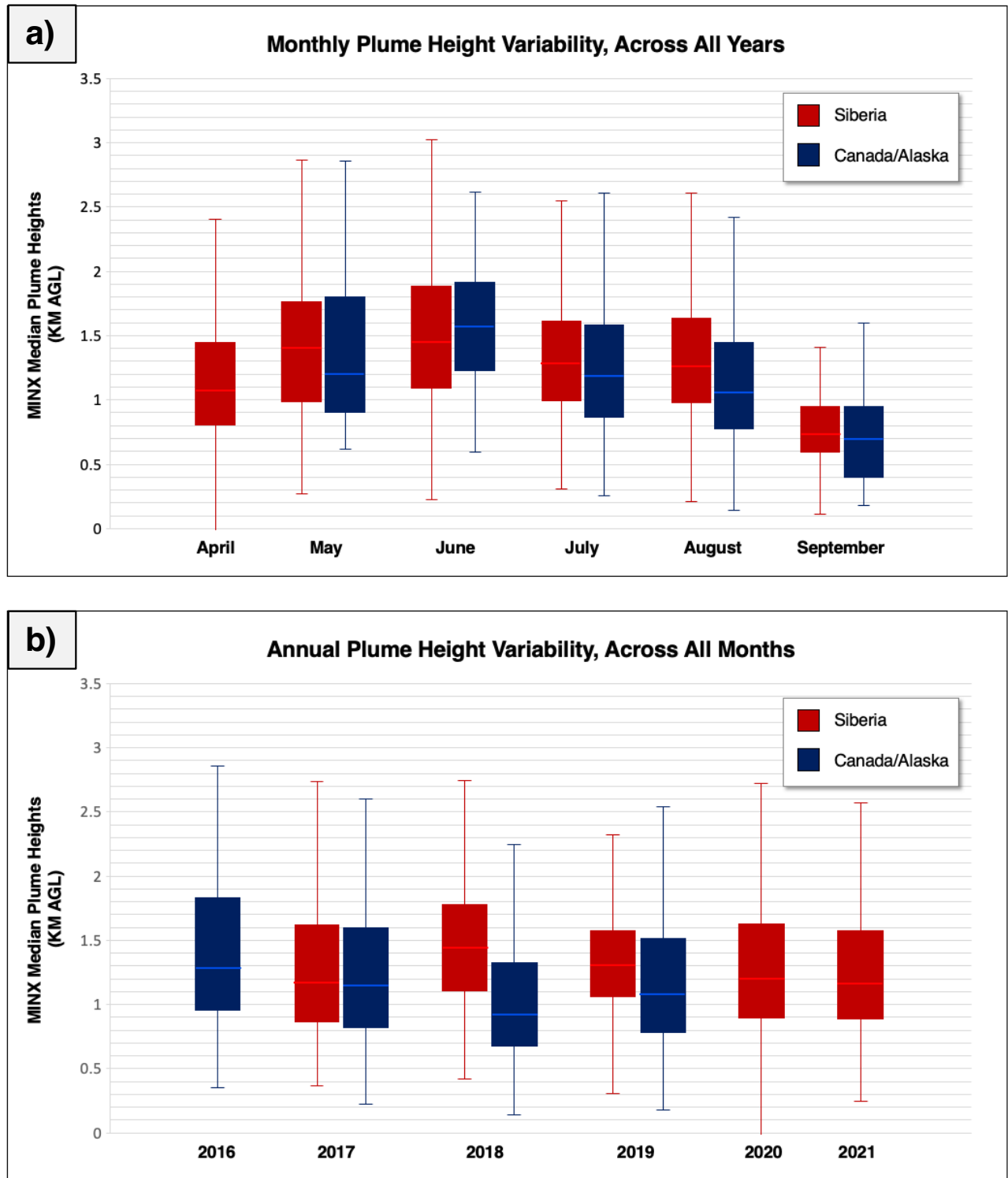


Figure S5. Median plume heights as retrieved by MINX, stratified by (a) month and (b) year. The red box plots are for Siberian plumes included in this study, whereas the blue box plots are for Canadian/Alaskan plumes from Junghenn Noyes et al., 2022. The boxes represent the central 50% of the data, with the lower quartile (Q1) on the bottom, the upper quartile (Q3) on the top, and the median in the middle depicted with a thin line. The whiskers extend to 1.5 times the interquartile range from the first and third quartiles of the data ($Q1 - 1.5 \times [Q3 - Q1]$ and $Q3 + 1.5 \times [Q3 - Q1]$); points outside this range are considered outliers and are not plotted.

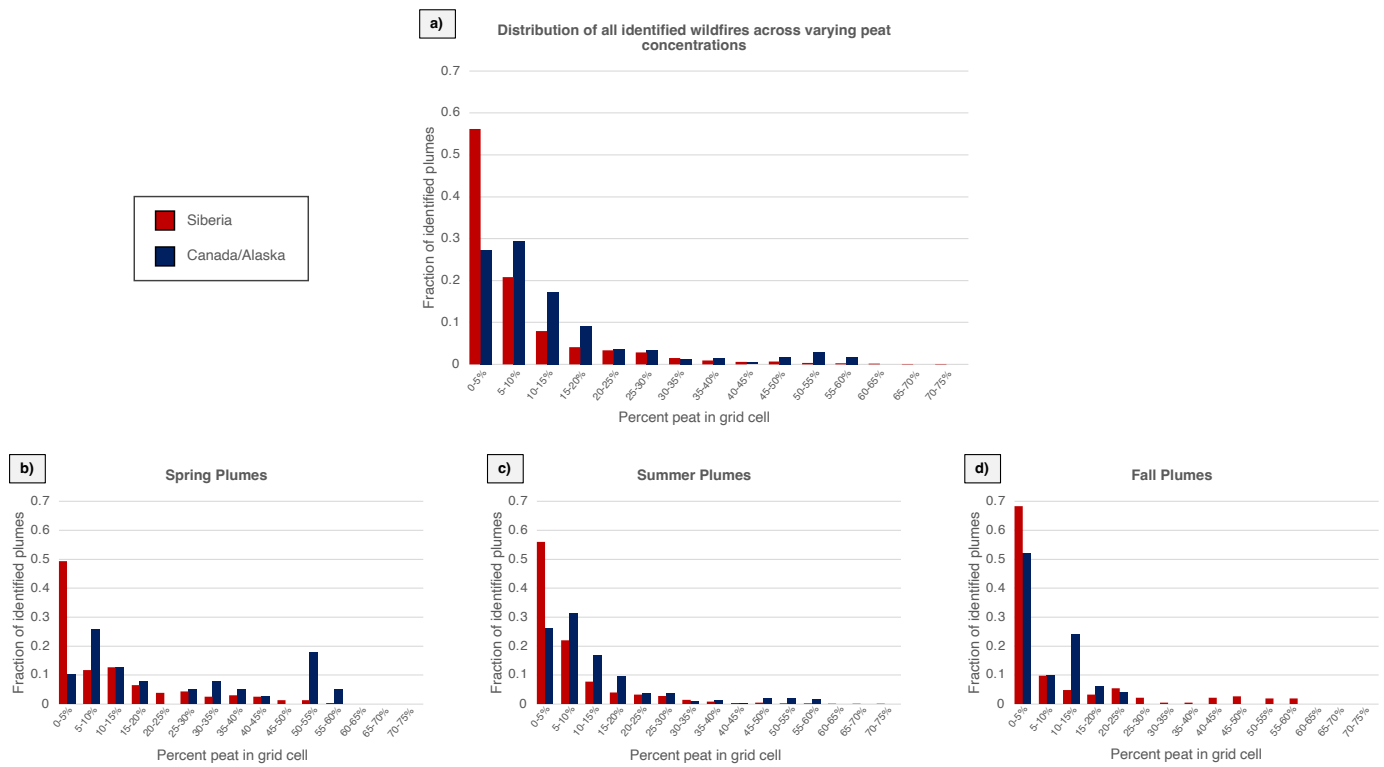


Figure S6. Histograms displaying how the location of wildfires identified in Siberia (red) and Canada/Alaska (blue; from Junghenn Noyes et al., 2022) correspond with maps of peatlands from Hugelius et al. (2021). The x-axis is the range of peat content present in the peat map grid cell where a given wildfire is located, whereas the y-axis denotes how many wildfires fall into each range, as a fraction of the total number of wildfires identified in **(a)** all months studied, **(b)** April and May, **(c)** June, July, and August, and **(d)** September.

Sensitivity Studies

Our paper classifies plumes into four main categories based on the dominant land cover type associated with the plume's MODIS fire pixels. In the four tables below, we demonstrate the sensitivity of key observational variables to changes in plume-type definitions by altering the percentage of fire pixels that must be associated with a land cover type for a plume to qualify for a given category (Table S3 shows which MODIS land cover types are associated with which plume type). For each month of the study, as well as across all 6 months, the left column provides statistics for plume-types as they are defined in the main text, whereas the statistics in the right column are for plumes that adhere to stricter plume-type categorization rules.

Table S5A. Sensitivity table for Forest plumes, stratified by month as well as across all months observed. LQ = lower quartile; UQ = upper quartile; 80% = at least 80% of a plume's MODIS fire pixels were associated with MODIS forested land cover types (as used to define plume-types in this study); 90% = at least 90% of a plume's MODIS fire pixels were associated with MODIS forest land cover types (to demonstrate sensitivity).

		Apr.		May		Jun.		Jul.		Aug.		Sept.		All Mos.	
		80%	90%	80%	90%	80%	90%	80%	90%	80%	90%	80%	90%	80%	90%
		N=7	N=3	N=7	N=5	N=19	N=17	N=112	N=8	N=65	N=50	N=2	N=2	N=210	N=165
MINX Median Plume Height	mean	0.958	0.666	1.377	1.192	1.350	1.333	1.274	1.279	1.243	1.216	1.211	1.211	1.264	1.251
	+/- σ	0.600	0.532	0.562	0.313	0.504	0.524	0.403	0.401	0.395	0.392	0.173	0.173	0.429	0.421
	min	-0.076	-0.076	0.837	0.837	0.370	0.370	0.520	0.520	0.244	0.244	1.038	1.038	-0.076	-0.076
	LQ	0.835	0.427	1.032	0.973	1.046	1.016	1.035	1.050	0.945	0.946	1.211	1.211	0.989	1.012
	median	0.907	0.930	1.121	1.121	1.317	1.317	1.208	1.212	1.191	1.190	1.211	1.211	1.196	1.191
	UQ	1.037	1.037	1.514	1.287	1.687	1.630	1.438	1.430	1.448	1.426	1.211	1.211	1.449	1.439
	max	2.131	1.143	2.589	1.741	2.297	2.297	3.204	3.204	2.371	2.371	1.383	1.383	3.204	3.204
MISR Median Plume AOD	mean	0.495	0.426	1.044	0.957	0.750	0.671	1.311	1.236	1.420	1.405	1.140	1.140	1.257	1.205
	+/- σ	0.165	0.091	0.261	0.217	0.445	0.394	1.060	0.991	1.248	1.274	0.292	0.292	1.071	1.044
	min	0.285	0.324	0.778	0.778	0.198	0.198	0.237	0.237	0.180	0.180	0.847	0.847	0.180	0.180
	LQ	0.367	0.367	0.862	0.827	0.504	0.500	0.583	0.568	0.512	0.491	1.140	1.140	0.538	0.514
	median	0.523	0.410	0.900	0.896	0.571	0.568	0.929	0.817	0.967	0.917	1.140	1.140	0.836	0.794
	UQ	0.553	0.477	1.206	0.900	0.891	0.753	1.696	1.641	2.084	2.074	1.140	1.140	1.638	1.598
	max	0.816	0.544	1.493	1.382	1.643	1.643	6.044	6.044	6.089	6.089	1.432	1.432	6.089	6.089
MODIS Median Plume FRP	mean	22.48	21.90	32.39	34.35	23.88	24.55	17.86	17.07	20.70	20.10	15.25	15.25	19.88	19.35
	+/- σ	4.879	3.422	25.11	28.31	18.24	19.18	14.47	14.30	11.59	10.66	5.800	5.800	14.59	14.80
	min	13.70	17.30	13.70	13.70	5.400	5.400	4.600	4.600	6.900	6.900	9.450	9.450	4.600	4.600
	LQ	20.10	20.10	15.00	15.50	11.97	11.55	9.000	8.300	11.60	11.50	15.25	15.25	10.10	9.700
	median	23.50	22.90	19.20	19.20	17.00	16.50	13.65	13.47	18.20	18.02	15.25	15.25	15.57	15.10
	UQ	25.45	24.20	37.37	34.25	31.72	39.70	21.87	20.10	24.70	24.17	15.25	15.25	23.55	23.20
	max	29.10	25.50	89.10	89.10	76.80	76.80	103.4	103.4	66.60	51.10	21.05	21.05	103.4	103.4
MERRA-2 PBL Height	mean	1.632	1.760	1.303	1.429	1.766	1.765	1.567	1.561	1.583	1.618	1.860	1.860	1.586	1.602
	+/- σ	0.229	0.081	0.252	0.123	0.529	0.553	0.288	0.292	0.402	0.411	0.029	0.029	0.359	0.367
	min	1.249	1.647	0.775	1.240	0.542	0.542	0.670	0.670	0.544	0.544	1.831	1.831	0.542	0.542
	LQ	1.482	1.722	1.222	1.396	1.521	1.504	1.368	1.370	1.346	1.386	1.860	1.860	1.368	1.377
	median	1.647	1.796	1.396	1.396	1.750	1.750	1.546	1.511	1.666	1.670	1.860	1.860	1.580	1.590
	UQ	1.816	1.816	1.452	1.507	2.168	2.260	1.766	1.744	1.820	1.856	1.860	1.860	1.813	1.820
	max	1.932	1.836	1.607	1.607	2.547	2.547	2.385	2.385	2.360	2.360	1.889	1.889	2.547	2.547
MERRA-2 PBL-Top Stability	mean	1.699	1.960	1.759	1.734	1.747	1.847	5.917	5.890	4.398	4.416	5.592	5.592	4.798	4.826
	+/- σ	1.069	1.217	2.087	2.468	1.459	1.508	3.089	2.876	2.582	2.470	2.408	2.408	3.112	2.965
	min	0.247	0.794	0.308	0.308	-0.036	-0.036	0.268	0.268	0.319	0.319	3.184	3.184	-0.036	-0.036
	LQ	1.077	1.120	0.491	0.366	0.760	0.790	3.653	3.791	2.232	2.309	5.592	5.592	2.197	2.386
	median	1.446	1.446	0.718	0.617	1.289	1.313	5.125	5.577	4.245	4.174	5.592	5.592	4.425	4.528
	UQ	2.205	2.542	1.822	0.718	2.087	2.155	7.462	7.422	6.066	6.143	5.592	5.592	6.836	6.990
	max	3.639	3.639	6.660	6.660	5.011	5.011	13.56	12.62	13.43	9.591	8.000	8.000	13.56	12.62
MERRA-2 24-Hour Soil Moisture	mean	0.563	0.586	0.608	0.583	0.589	0.597	0.612	0.619	0.491	0.477	0.398	0.398	0.569	0.570
	+/- σ	0.042	0.039	0.076	0.073	0.137	0.141	0.112	0.113	0.074	0.065	0.001	0.001	0.116	0.121
	min	0.496	0.537	0.444	0.444	0.364	0.364	0.409	0.409	0.384	0.384	0.397	0.397	0.364	0.364
	LQ	0.533	0.564	0.596	0.596	0.476	0.476	0.530	0.545	0.434	0.427	0.398	0.398	0.476	0.464

	median	0.573	0.592	0.629	0.596	0.569	0.569	0.601	0.610	0.477	0.466	0.398	0.398	0.557	0.557
	UQ	0.586	0.611	0.643	0.629	0.650	0.674	0.704	0.704	0.549	0.520	0.398	0.398	0.640	0.643
	max	0.631	0.631	0.710	0.652	0.859	0.859	0.836	0.836	0.698	0.617	0.398	0.398	0.859	0.859
MISR SSA₅₅₈	mean	0.860	0.853	0.864	0.859	0.931	0.929	0.955	0.953	0.934	0.933	0.849	0.849	0.940	0.939
	+/- σ	0.036	0.044	0.050	0.049	0.046	0.048	0.027	0.029	0.034	0.037	0.012	0.012	0.041	0.042
	min	0.806	0.806	0.800	0.800	0.826	0.826	0.852	0.852	0.805	0.805	0.837	0.837	0.800	0.800
	LQ	0.840	0.823	0.817	0.810	0.899	0.898	0.947	0.941	0.923	0.920	0.849	0.849	0.925	0.924
	median	0.844	0.840	0.870	0.870	0.953	0.953	0.962	0.961	0.945	0.948	0.849	0.849	0.954	0.953
	UQ	0.890	0.876	0.904	0.881	0.961	0.963	0.974	0.973	0.958	0.958	0.849	0.849	0.965	0.964
	max	0.912	0.912	0.933	0.933	0.993	0.993	0.995	0.995	0.999	0.999	0.861	0.861	0.999	0.999
MISR ANG	mean	1.757	1.815	1.817	1.912	1.721	1.753	1.610	1.634	1.607	1.608	1.505	1.505	1.630	1.648
	+/- σ	0.221	0.240	0.269	0.112	0.232	0.210	0.228	0.229	0.258	0.264	0.086	0.086	0.244	0.245
	min	1.396	1.530	1.201	1.770	1.222	1.305	1.150	1.151	1.110	1.110	1.419	1.419	1.110	1.110
	LQ	1.625	1.664	1.775	1.781	1.614	1.620	1.437	1.483	1.349	1.343	1.505	1.505	1.438	1.477
	median	1.799	1.799	1.956	1.996	1.805	1.810	1.599	1.608	1.634	1.649	1.505	1.505	1.626	1.631
	UQ	1.870	1.958	1.997	1.997	1.888	1.916	1.769	1.792	1.812	1.811	1.505	1.505	1.812	1.817
	max	2.117	2.117	2.016	2.016	2.033	2.033	2.172	2.172	2.004	2.004	1.592	1.592	2.172	2.172
MISR BIS AOD Fraction	mean	0.777	0.815	0.820	0.857	0.456	0.492	0.340	0.366	0.526	0.526	0.742	0.742	0.442	0.455
	+/- σ	0.182	0.158	0.175	0.174	0.314	0.309	0.196	0.201	0.208	0.222	0.012	0.012	0.248	0.249
	min	0.511	0.607	0.554	0.554	0.009	0.010	0.000	0.004	0.000	0.000	0.730	0.730	0.000	0.000
	LQ	0.606	0.727	0.678	0.765	0.273	0.292	0.216	0.230	0.379	0.376	0.742	0.742	0.273	0.282
	median	0.847	0.847	0.868	0.984	0.340	0.362	0.332	0.350	0.481	0.478	0.742	0.742	0.387	0.391
	UQ	0.938	0.918	0.987	0.990	0.720	0.807	0.422	0.466	0.681	0.666	0.742	0.742	0.608	0.616
	max	0.989	0.989	0.990	0.990	0.990	0.990	0.869	0.869	0.990	0.990	0.753	0.753	0.990	0.990
MISR BrS AOD Fraction	mean	0.033	0.010	0.017	0.010	0.022	0.007	0.017	0.012	0.016	0.018	0.041	0.041	0.018	0.014
	+/- σ	0.050	0.000	0.015	0.000	0.061	0.002	0.049	0.036	0.040	0.045	0.031	0.031	0.047	0.036
	min	0.008	0.009	0.009	0.009	0.004	0.004	0.001	0.001	0.003	0.003	0.010	0.010	0.001	0.001
	LQ	0.010	0.010	0.010	0.010	0.005	0.005	0.003	0.003	0.005	0.005	0.041	0.041	0.004	0.004
	median	0.010	0.010	0.010	0.010	0.008	0.007	0.005	0.005	0.007	0.007	0.041	0.041	0.006	0.006
	UQ	0.020	0.010	0.013	0.010	0.010	0.010	0.007	0.007	0.010	0.010	0.041	0.041	0.010	0.010
	max	0.154	0.010	0.053	0.010	0.281	0.010	0.333	0.250	0.255	0.255	0.072	0.072	0.333	0.255
MISR NonSph Particle AOD Fraction	mean	0.078	0.051	0.000	0.000	0.002	0.000	0.019	0.012	0.009	0.009	0.002	0.002	0.016	0.010
	+/- σ	0.091	0.072	0.000	0.000	0.007	0.000	0.067	0.051	0.030	0.032	0.000	0.000	0.056	0.043
	min	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.000	0.000
	LQ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.000	0.000
	median	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.000	0.000
	UQ	0.169	0.077	0.000	0.000	0.000	0.000	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.001
	max	0.207	0.153	0.001	0.000	0.031	0.001	0.441	0.441	0.191	0.191	0.002	0.002	0.441	0.441
MISR Very Small Particle AOD Fraction	mean	0.193	0.227	0.106	0.090	0.048	0.025	0.033	0.028	0.046	0.052	0.145	0.145	0.047	0.042
	+/- σ	0.135	0.155	0.124	0.110	0.112	0.045	0.087	0.068	0.105	0.113	0.049	0.049	0.103	0.092
	min	0.000	0.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.096	0.096	0.000	0.000
	LQ	0.080	0.139	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.145	0.145	0.000	0.000
	median	0.252	0.252	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.145	0.145	0.000	0.000
	UQ	0.269	0.328	0.225	0.208	0.047	0.026	0.001	0.013	0.017	0.054	0.145	0.145	0.040	0.043
	max	0.404	0.404	0.291	0.242	0.485	0.152	0.566	0.404	0.414	0.414	0.194	0.194	0.566	0.414
MISR Small Particle AOD Fraction	mean	0.609	0.567	0.621	0.707	0.542	0.602	0.471	0.497	0.498	0.495	0.520	0.520	0.496	0.515
	+/- σ	0.183	0.078	0.209	0.141	0.294	0.248	0.214	0.203	0.238	0.247	0.062	0.062	0.231	0.223
	min	0.369	0.476	0.211	0.539	0.016	0.017	0.007	0.012	0.007	0.007	0.458	0.458	0.007	0.007
	LQ	0.481	0.518	0.570	0.620	0.392	0.458	0.341	0.357	0.346	0.348	0.520	0.520	0.348	0.359
	median	0.561	0.561	0.620	0.702	0.528	0.567	0.488	0.493	0.529	0.529	0.520	0.520	0.521	0.528
	UQ	0.708	0.613	0.708	0.714	0.733	0.738	0.613	0.643	0.683	0.682	0.520	0.520	0.664	0.680
	max	0.952	0.666	0.960	0.960	1.000	1.000	0.920	0.920	0.928	0.928	0.582	0.582	1.000	1.000
MISR Medium Particle AOD Fraction	mean	0.001	0.000	0.127	0.035	0.166	0.145	0.333	0.321	0.285	0.291	0.000	0.000	0.282	0.275
	+/- σ	0.003	0.000	0.248	0.069	0.214	0.184	0.286	0.272	0.291	0.307	0.000	0.000	0.286	0.280
	min	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	LQ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	median	0.000	0.000	0.000	0.000	0.042	0.042	0.354	0.339	0.195	0.209	0.000	0.000	0.205	0.198
	UQ	0.000	0.000	0.087	0.000	0.278	0.219	0.564	0.563	0.532	0.559	0.000	0.000	0.532	0.532
	max	0.009	0.000	0.718	0.174	0.676	0.577	0.993	0.869	0.993	0.993	0.000	0.000	0.993	0.993
MISR Large	mean	0.101	0.066	0.006	0.004	0.021	0.010	0.038	0.029	0.040	0.041	0.140	0.140	0.039	0.032
	+/- σ	0.119	0.093	0.010	0.008	0.053	0.021	0.084	0.062	0.080	0.086	0.005	0.005	0.082	0.069

Particle AOD Fraction	min	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.135	0.135	0.000	0.000
	LQ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.140	0.140	0.000	0.000
	median	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.140	0.140	0.000	0.000
	UQ	0.205	0.099	0.010	0.000	0.008	0.007	0.038	0.037	0.045	0.037	0.140	0.140	0.039	0.036
	max	0.293	0.198	0.024	0.019	0.228	0.077	0.477	0.454	0.449	0.449	0.145	0.145	0.477	0.454

Table S5B. Sensitivity table for Woody plumes, stratified by month as well as across all months observed. LQ = lower quartile; UQ = upper quartile; 80% = at least 80% of a plume's MODIS fire pixels were associated with MODIS woody land cover types (as used to define plume-types in this study); 90% = at least 90% of a plume's MODIS fire pixels were associated with MODIS woody land cover types (to demonstrate sensitivity).

		Apr.		May		Jun.		Jul.		Aug.		Sept.		All Mos.	
		80%	90%	80%	90%	80%	90%	80%	90%	80%	90%	80%	90%	80%	90%
		N=3	N=4	N=20	N=13	N=75	N=59	N=323	N=223	N=181	N=121	N=47	N=32	N=649	N=452
MINX Median Plume Height	mean	2.878	3.019	1.651	1.721	1.566	1.613	1.338	1.322	1.300	1.292	0.799	0.783	1.331	1.340
	+/- σ	1.934	1.416	0.453	0.504	0.539	0.529	0.423	0.422	0.449	0.443	0.264	0.219	0.499	0.517
	min	0.782	1.891	0.648	0.648	0.556	0.928	0.310	0.310	0.295	0.391	0.252	0.456	0.252	0.310
	LQ	1.594	2.111	1.393	1.544	1.150	1.206	1.035	1.019	0.997	0.997	0.633	0.633	0.992	0.992
	median	2.406	2.368	1.731	1.806	1.520	1.520	1.310	1.280	1.284	1.282	0.776	0.766	1.291	1.287
	UQ	3.927	3.927	1.929	2.206	1.861	1.819	1.578	1.574	1.513	1.491	0.896	0.893	1.598	1.603
	max	5.447	5.447	2.313	2.313	3.126	3.126	2.747	2.747	2.990	2.990	1.615	1.615	5.447	5.447
MISR Median Plume AOD	mean	0.707	0.954	1.102	1.134	0.924	0.929	1.495	1.412	1.502	1.430	1.396	1.214	1.408	1.328
	+/- σ	0.289	0.397	0.795	0.843	0.698	0.668	1.099	1.044	1.124	1.160	0.860	0.832	1.059	1.028
	min	0.307	0.450	0.328	0.417	0.186	0.186	0.178	0.178	0.185	0.185	0.163	0.163	0.163	0.163
	LQ	0.569	0.640	0.521	0.573	0.456	0.481	0.645	0.636	0.689	0.642	0.528	0.336	0.619	0.568
	median	0.831	0.906	0.852	0.953	0.704	0.718	1.227	1.097	1.224	1.051	1.469	1.320	1.137	1.025
	UQ	0.906	1.267	1.366	1.308	1.075	1.127	2.017	1.872	1.860	1.748	2.078	1.882	1.856	1.722
	max	0.981	1.553	3.697	3.697	3.638	3.319	6.379	5.017	5.073	4.848	3.482	3.387	6.379	5.017
MODIS Median Plume FRP	mean	34.95	48.75	45.41	41.68	30.74	30.60	33.62	33.17	31.61	33.77	21.88	21.09	32.25	32.52
	+/- σ	17.26	4.245	27.84	24.51	22.15	23.65	23.25	21.69	29.50	39.07	9.997	9.39	24.81	27.43
	min	10.90	43.35	15.50	18.10	6.900	6.900	5.850	6.900	6.300	6.600	6.550	6.550	5.850	6.550
	LQ	27.12	44.90	25.65	27.00	16.52	15.85	18.52	18.37	16.30	16.30	14.35	14.35	17.50	17.35
	median	43.35	48.52	34.70	32.20	26.05	25.30	26.10	26.90	23.10	22.50	20.80	19.92	25.10	25.20
	UQ	46.97	52.60	55.72	49.70	39.62	38.77	40.55	40.55	36.20	35.50	26.87	26.12	39.00	39.02
	max	50.60	54.60	115.0	115.0	149.1 5	149.1 5	159.1	140.0	228.70	273.80	51.80	51.80	228.7	273.8
MERRA-2 PBL Height	mean	1.794	1.706	1.626	1.662	1.801	1.832	1.594	1.615	1.715	1.712	0.927	0.896	1.605	1.620
	+/- σ	0.281	0.307	0.408	0.382	0.451	0.436	0.421	0.440	0.398	0.403	0.307	0.275	0.458	0.468
	min	1.406	1.406	0.963	1.102	0.848	0.923	0.360	0.360	0.852	0.852	0.325	0.573	0.325	0.360
	LQ	1.660	1.406	1.337	1.447	1.448	1.470	1.341	1.355	1.392	1.392	0.664	0.650	1.322	1.328
	median	1.915	1.660	1.484	1.489	1.762	1.741	1.580	1.592	1.695	1.695	0.842	0.842	1.594	1.609
	UQ	1.988	2.006	1.980	2.098	2.190	2.190	1.844	1.892	2.005	2.014	1.160	1.085	1.933	1.963
	max	2.061	2.098	2.338	2.265	2.841	2.841	2.717	2.717	2.567	2.567	1.631	1.404	2.841	2.841
MERRA-2 PBL-Top Stability	mean	0.274	-0.213	3.083	2.967	3.109	2.973	4.855	4.654	4.483	4.376	3.975	3.812	4.410	4.209
	+/- σ	1.440	1.490	1.997	2.208	2.998	3.053	3.039	3.018	2.212	2.275	2.105	2.274	2.810	2.856
	min	-1.496	-1.648	-0.483	-0.483	-0.405	-0.405	-0.448	-0.448	0.649	0.722	0.710	0.710	-1.496	-1.648
	LQ	-0.604	-1.572	1.615	1.390	1.409	1.424	2.527	2.448	2.674	2.548	2.070	1.647	2.412	2.159
	median	0.288	-0.604	3.214	2.953	2.496	2.480	4.083	3.868	4.303	4.051	3.960	3.515	3.820	3.438
	UQ	1.159	1.147	4.763	4.655	3.479	3.239	7.219	6.836	5.899	5.851	5.148	5.270	6.017	5.785
	max	2.031	2.005	6.656	6.656	18.06	18.06	13.08	13.08	12.02	12.02	9.016	9.016	18.06	18.06
MERRA-2 24-Hour Soil Moisture	mean	0.581	0.662	0.608	0.650	0.609	0.591	0.543	0.539	0.460	0.462	0.457	0.469	0.523	0.525
	+/- σ	0.114	0.108	0.123	0.114	0.144	0.139	0.126	0.131	0.075	0.079	0.079	0.088	0.124	0.128
	min	0.478	0.478	0.439	0.439	0.396	0.396	0.329	0.329	0.349	0.349	0.373	0.373	0.329	0.329
	LQ	0.501	0.585	0.517	0.542	0.493	0.482	0.459	0.447	0.405	0.403	0.391	0.402	0.429	0.426
	median	0.525	0.715	0.597	0.618	0.600	0.546	0.499	0.497	0.444	0.451	0.427	0.434	0.485	0.486
	UQ	0.632	0.739	0.734	0.761	0.705	0.682	0.632	0.646	0.486	0.490	0.504	0.547	0.586	0.601
	max	0.739	0.739	0.798	0.798	0.884	0.874	0.857	0.851	0.733	0.733	0.637	0.637	0.884	0.874

MISR SSA₅₅₈	mean	0.885	0.891	0.907	0.914	0.931	0.931	0.943	0.942	0.940	0.941	0.860	0.855	0.933	0.933
	+/- σ	0.057	0.043	0.034	0.032	0.043	0.042	0.033	0.035	0.034	0.033	0.048	0.044	0.042	0.043
	min	0.822	0.843	0.847	0.864	0.821	0.832	0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800
	LQ	0.848	0.859	0.878	0.888	0.902	0.900	0.928	0.926	0.927	0.927	0.814	0.810	0.919	0.916
	median	0.874	0.881	0.899	0.914	0.939	0.939	0.949	0.949	0.947	0.947	0.863	0.851	0.945	0.943
	UQ	0.917	0.924	0.937	0.938	0.963	0.962	0.966	0.967	0.959	0.962	0.898	0.888	0.962	0.963
	max	0.960	0.960	0.972	0.972	0.999	0.999	0.999	0.999	0.999	0.999	0.952	0.938	0.999	0.999
MISR ANG	mean	1.354	1.408	1.718	1.712	1.653	1.673	1.632	1.638	1.615	1.624	1.925	1.961	1.653	1.662
	+/- σ	0.332	0.294	0.198	0.198	0.301	0.298	0.273	0.267	0.251	0.266	0.237	0.228	0.278	0.281
	min	1.014	1.014	1.292	1.426	0.981	0.981	1.058	1.058	0.635	0.635	1.300	1.300	0.635	0.635
	LQ	1.129	1.129	1.566	1.516	1.451	1.479	1.432	1.436	1.455	1.455	1.781	1.824	1.452	1.455
	median	1.243	1.433	1.748	1.749	1.689	1.711	1.607	1.621	1.626	1.643	1.959	1.945	1.653	1.680
	UQ	1.524	1.687	1.850	1.855	1.915	1.918	1.860	1.863	1.783	1.796	2.098	2.134	1.877	1.886
	max	1.804	1.752	2.045	2.045	2.174	2.174	2.139	2.139	2.175	2.175	2.398	2.398	2.398	2.398
MISR BIS AOD Fraction	mean	0.510	0.459	0.570	0.528	0.436	0.440	0.417	0.422	0.460	0.457	0.787	0.789	0.463	0.463
	+/- σ	0.367	0.319	0.298	0.301	0.291	0.289	0.244	0.250	0.214	0.219	0.260	0.258	0.264	0.267
	min	0.003	0.003	0.008	0.008	0.000	0.005	0.000	0.000	0.000	0.000	0.031	0.031	0.000	0.000
	LQ	0.334	0.168	0.320	0.298	0.196	0.233	0.246	0.242	0.312	0.303	0.658	0.636	0.269	0.266
	median	0.665	0.499	0.641	0.492	0.377	0.362	0.388	0.377	0.454	0.442	0.895	0.877	0.442	0.435
	UQ	0.764	0.750	0.823	0.768	0.647	0.666	0.575	0.600	0.588	0.603	0.989	0.990	0.647	0.660
	max	0.862	0.835	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
MISR BrS AOD Fraction	mean	0.078	0.138	0.022	0.029	0.019	0.016	0.019	0.018	0.022	0.016	0.091	0.110	0.026	0.025
	+/- σ	0.097	0.133	0.037	0.044	0.037	0.031	0.039	0.039	0.059	0.045	0.208	0.225	0.074	0.077
	min	0.009	0.009	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.006	0.000	0.000
	LQ	0.009	0.009	0.008	0.008	0.007	0.006	0.005	0.005	0.005	0.005	0.009	0.009	0.005	0.005
	median	0.010	0.113	0.010	0.010	0.009	0.009	0.007	0.007	0.006	0.006	0.010	0.010	0.008	0.008
	UQ	0.112	0.266	0.010	0.010	0.010	0.010	0.010	0.010	0.009	0.009	0.010	0.010	0.010	0.010
	max	0.215	0.316	0.160	0.160	0.193	0.171	0.252	0.252	0.485	0.379	0.870	0.870	0.870	0.870
MISR NonSph Particle AOD Fraction	mean	0.158	0.138	0.029	0.024	0.007	0.009	0.009	0.008	0.009	0.007	0.008	0.011	0.010	0.010
	+/- σ	0.172	0.154	0.061	0.060	0.038	0.042	0.036	0.033	0.032	0.031	0.027	0.032	0.039	0.040
	min	0.009	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	LQ	0.037	0.035	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	median	0.066	0.074	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	UQ	0.232	0.241	0.025	0.004	0.000	0.001	0.001	0.001	0.002	0.002	0.000	0.000	0.001	0.001
	max	0.399	0.399	0.218	0.218	0.311	0.311	0.339	0.270	0.250	0.250	0.154	0.154	0.399	0.399
MISR Very Small Particle AOD Fraction	mean	0.130	0.106	0.119	0.094	0.064	0.070	0.044	0.046	0.051	0.045	0.199	0.217	0.062	0.062
	+/- σ	0.105	0.094	0.127	0.100	0.116	0.122	0.094	0.090	0.117	0.109	0.202	0.201	0.122	0.120
	min	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	LQ	0.066	0.022	0.002	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	median	0.133	0.088	0.058	0.053	0.000	0.000	0.000	0.000	0.000	0.000	0.146	0.172	0.000	0.000
	UQ	0.195	0.189	0.215	0.182	0.075	0.090	0.039	0.065	0.020	0.002	0.378	0.409	0.068	0.079
	max	0.257	0.246	0.442	0.290	0.394	0.394	0.494	0.491	0.724	0.724	0.618	0.618	0.724	0.724
MISR Small Particle AOD Fraction	mean	0.400	0.410	0.520	0.513	0.463	0.483	0.476	0.484	0.486	0.491	0.626	0.632	0.489	0.496
	+/- σ	0.158	0.192	0.206	0.210	0.305	0.295	0.245	0.237	0.218	0.227	0.211	0.224	0.245	0.244
	min	0.186	0.186	0.130	0.157	0.007	0.007	0.007	0.007	0.006	0.006	0.042	0.042	0.006	0.006
	LQ	0.319	0.244	0.426	0.412	0.202	0.289	0.282	0.287	0.353	0.343	0.539	0.539	0.311	0.316
	median	0.452	0.377	0.563	0.570	0.455	0.495	0.473	0.479	0.505	0.530	0.654	0.697	0.504	0.519
	UQ	0.507	0.576	0.691	0.623	0.747	0.747	0.676	0.675	0.640	0.664	0.771	0.794	0.683	0.690
	max	0.562	0.700	0.834	0.834	0.999	0.999	1.000	0.987	0.946	0.946	0.931	0.926	1.000	0.999
MISR Medium Particle AOD Fraction	mean	0.000	0.000	0.024	0.031	0.215	0.205	0.288	0.280	0.273	0.268	0.072	0.053	0.250	0.241
	+/- σ	0.000	0.000	0.087	0.106	0.317	0.296	0.313	0.303	0.279	0.282	0.139	0.123	0.298	0.291
	min	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	LQ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	median	0.000	0.000	0.000	0.000	0.000	0.000	0.182	0.188	0.216	0.154	0.000	0.000	0.104	0.085
	UQ	0.000	0.000	0.000	0.000	0.329	0.329	0.570	0.557	0.469	0.441	0.084	0.000	0.470	0.441
	max	0.000	0.000	0.398	0.398	0.993	0.993	0.993	0.993	0.993	0.993	0.497	0.475	0.993	0.993
MISR Large Particle AOD Fraction	mean	0.261	0.236	0.089	0.076	0.032	0.034	0.034	0.034	0.050	0.046	0.026	0.024	0.040	0.039
	+/- σ	0.137	0.129	0.103	0.101	0.077	0.077	0.072	0.073	0.094	0.095	0.046	0.046	0.082	0.083
	min	0.107	0.087	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	LQ	0.171	0.135	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	median	0.235	0.209	0.019	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

UQ	0.338	0.338	0.192	0.126	0.015	0.019	0.022	0.027	0.063	0.048	0.027	0.029	0.039	0.038
max	0.440	0.440	0.256	0.256	0.427	0.427	0.467	0.467	0.658	0.658	0.163	0.163	0.658	0.658

Table S5C. Sensitivity table for Grassy plumes, stratified by month as well as across all months observed. LQ = lower quartile; UQ = upper quartile; 80% = at least 80% of a plume's MODIS fire pixels were associated with MODIS grassy land cover types (as used to define plume-types in this study); 90% = at least 90% of a plume's MODIS fire pixels were associated with MODIS grassy land cover types (to demonstrate sensitivity).

		Apr.		May		Jun.		Jul.		Aug.		Sept.		All Mos.	
		80%	90%	80%	90%	80%	90%	80%	90%	80%	90%	80%	90%	80%	90%
		N=33	N=22	N=18	N=15	N=327	N=316	N=570	N=534	N=575	N=539	N=73	N=68	N=1596	N=1494
MINX Median Plume Height	mean	1.472	1.526	1.713	1.747	1.478	1.459	1.450	1.429	1.345	1.345	0.865	0.846	1.395	1.383
	+/- σ	0.846	0.921	0.487	0.546	0.631	0.605	0.608	0.616	0.528	0.534	0.422	0.428	0.598	0.598
	min	0.454	0.454	0.825	0.677	0.223	0.223	0.339	0.339	0.213	0.213	0.314	0.314	0.213	0.213
	LQ	0.866	0.837	1.476	1.488	1.007	1.007	1.027	0.991	0.982	0.979	0.600	0.587	0.972	0.962
	median	1.165	1.134	1.636	1.716	1.407	1.400	1.375	1.355	1.267	1.267	0.773	0.714	1.321	1.316
	UQ	2.205	2.399	2.176	2.217	1.828	1.812	1.757	1.743	1.647	1.650	0.996	0.968	1.709	1.704
	max	3.573	3.573	2.514	2.514	3.888	3.888	4.829	4.829	5.007	5.007	3.257	3.257	5.007	5.007
MISR Median Plume AOD	mean	0.803	0.711	0.766	0.812	1.026	1.022	1.466	1.453	1.622	1.594	0.945	0.833	1.387	1.367
	+/- σ	0.389	0.211	0.296	0.338	0.612	0.614	1.021	1.034	1.104	1.092	0.702	0.484	0.992	0.987
	min	0.262	0.262	0.280	0.280	0.189	0.189	0.203	0.203	0.198	0.198	0.176	0.176	0.176	0.176
	LQ	0.632	0.647	0.546	0.546	0.540	0.530	0.721	0.701	0.815	0.783	0.510	0.460	0.659	0.648
	median	0.770	0.753	0.736	0.777	0.890	0.883	1.239	1.216	1.318	1.301	0.726	0.688	1.140	1.117
	UQ	0.911	0.844	0.920	1.008	1.391	1.391	1.956	1.950	2.170	2.161	1.283	1.117	1.804	1.767
	max	2.456	1.036	1.395	1.433	3.952	3.952	6.272	6.272	6.113	6.113	4.441	2.351	6.272	6.272
MODIS Median Plume FRP	mean	35.45	33.78	37.00	32.61	29.18	28.86	38.82	39.13	33.30	33.01	30.41	30.55	34.38	34.21
	+/- σ	20.32	19.41	26.89	14.79	21.16	21.47	33.96	34.26	27.06	25.89	26.98	27.82	28.83	28.59
	min	8.500	8.500	14.80	14.80	0.000	0.000	0.000	0.000	0.000	4.450	5.550	5.550	0.000	0.000
	LQ	22.25	21.30	18.20	17.90	18.67	18.20	21.07	20.80	18.72	18.67	15.55	15.37	19.22	19.07
	median	29.80	30.05	31.10	31.30	25.80	25.60	31.00	31.07	26.45	26.10	24.70	23.12	27.47	27.30
	UQ	45.90	42.60	40.40	40.40	35.10	34.90	45.25	45.50	41.00	40.95	35.75	36.20	40.77	40.77
	max	84.45	84.45	131.70	63.45	288.5	288.5	327.2	327.2	313.3	313.3	183.2	183.2	327.2	327.2
MERRA-2 PBL Height	mean	1.498	1.483	1.776	1.785	1.561	1.560	1.474	1.445	1.422	1.420	0.854	0.837	1.448	1.436
	+/- σ	0.399	0.434	0.290	0.310	0.476	0.473	0.406	0.408	0.416	0.413	0.332	0.327	0.444	0.445
	min	0.579	0.579	1.183	1.236	0.262	0.262	0.368	0.368	0.258	0.258	0.303	0.303	0.258	0.258
	LQ	1.270	1.279	1.687	1.600	1.269	1.275	1.204	1.179	1.168	1.176	0.637	0.636	1.174	1.162
	median	1.450	1.433	1.760	1.790	1.556	1.554	1.448	1.407	1.401	1.401	0.823	0.784	1.426	1.414
	UQ	1.705	1.705	1.915	1.924	1.883	1.886	1.714	1.705	1.640	1.621	1.009	0.995	1.713	1.704
	max	2.343	2.343	2.286	2.286	2.860	2.860	2.716	2.696	2.730	2.730	1.804	1.804	2.860	2.860
MERRA-2 PBL-Top Stability	mean	7.764	7.955	5.753	5.525	4.466	4.432	5.818	5.952	5.204	5.281	5.580	5.624	5.348	5.399
	+/- σ	5.468	6.071	3.210	3.087	3.385	3.377	3.583	3.637	3.096	3.115	3.642	3.726	3.478	3.510
	min	-0.031	-0.031	0.817	0.817	-0.575	-0.575	-0.592	-0.592	-0.690	-0.690	-0.155	-0.155	-0.690	-0.690
	LQ	1.932	1.688	4.043	4.043	1.851	1.787	3.128	3.264	2.832	2.988	2.728	2.720	2.667	2.746
	median	8.851	8.855	5.158	5.707	3.702	3.698	5.060	5.111	4.895	4.941	4.519	4.228	4.676	4.707
	UQ	10.99	11.93	7.085	6.559	6.259	6.293	7.824	8.084	7.052	7.099	7.276	7.626	7.341	7.387
	max	19.18	19.18	12.59	12.59	15.98	15.61	19.26	19.26	19.64	19.64	16.52	16.52	19.64	19.64
MERRA-2 24-Hour Soil Moisture	mean	0.680	0.679	0.646	0.626	0.703	0.708	0.608	0.616	0.569	0.572	0.510	0.514	0.611	0.616
	+/- σ	0.130	0.141	0.147	0.148	0.130	0.129	0.132	0.135	0.106	0.106	0.042	0.040	0.132	0.133
	min	0.451	0.451	0.393	0.393	0.396	0.396	0.379	0.379	0.364	0.364	0.393	0.425	0.364	0.364
	LQ	0.556	0.555	0.498	0.478	0.589	0.591	0.497	0.498	0.491	0.494	0.490	0.491	0.498	0.501
	median	0.721	0.736	0.737	0.613	0.731	0.738	0.574	0.587	0.546	0.547	0.511	0.514	0.583	0.592
	UQ	0.782	0.789	0.767	0.763	0.810	0.812	0.726	0.737	0.652	0.654	0.534	0.535	0.722	0.730
	max	0.847	0.847	0.805	0.805	0.926	0.926	0.879	0.866	0.854	0.854	0.605	0.605	0.926	0.926
MISR SSA₅₅₈	mean	0.875	0.867	0.876	0.881	0.920	0.920	0.934	0.934	0.927	0.926	0.884	0.884	0.924	0.924
	+/- σ	0.038	0.037	0.043	0.047	0.037	0.037	0.035	0.034	0.038	0.038	0.041	0.041	0.039	0.039
	min	0.801	0.801	0.801	0.801	0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800
	LQ	0.848	0.842	0.850	0.850	0.902	0.902	0.916	0.915	0.912	0.912	0.857	0.858	0.905	0.906

	median	0.871	0.862	0.870	0.880	0.925	0.924	0.942	0.942	0.937	0.937	0.889	0.888	0.934	0.934
	UQ	0.900	0.897	0.910	0.919	0.944	0.944	0.958	0.958	0.952	0.952	0.918	0.917	0.952	0.952
	max	0.957	0.957	0.967	0.967	0.993	0.993	0.999	0.999	0.995	0.995	0.965	0.965	0.999	0.999
MISR ANG	mean	1.964	1.979	1.750	1.700	1.742	1.745	1.654	1.654	1.626	1.630	1.827	1.817	1.678	1.677
	+/- σ	0.166	0.178	0.339	0.364	0.260	0.259	0.275	0.276	0.239	0.234	0.224	0.229	0.265	0.264
	min	1.524	1.524	0.703	0.703	0.279	0.279	0.364	0.364	1.032	1.032	0.866	0.866	0.279	0.279
	LQ	1.880	1.894	1.635	1.472	1.589	1.591	1.469	1.472	1.477	1.480	1.725	1.721	1.496	1.500
	median	1.973	1.984	1.864	1.772	1.777	1.782	1.670	1.666	1.614	1.618	1.853	1.839	1.689	1.686
	UQ	2.048	2.043	1.971	1.971	1.929	1.931	1.853	1.856	1.803	1.803	1.998	1.976	1.885	1.877
	max	2.297	2.297	2.244	2.244	2.288	2.288	2.251	2.237	2.195	2.195	2.177	2.177	2.297	2.297
MISR BIS AOD Fraction	mean	0.693	0.678	0.573	0.561	0.572	0.577	0.475	0.478	0.546	0.549	0.731	0.724	0.538	0.539
	+/- σ	0.197	0.229	0.310	0.286	0.245	0.242	0.247	0.246	0.217	0.219	0.205	0.207	0.242	0.242
	min	0.054	0.054	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.053	0.053	0.000	0.000
	LQ	0.637	0.616	0.466	0.466	0.430	0.438	0.309	0.312	0.391	0.392	0.640	0.622	0.368	0.370
	median	0.723	0.724	0.610	0.546	0.581	0.590	0.451	0.451	0.524	0.528	0.758	0.757	0.529	0.531
	UQ	0.794	0.840	0.799	0.710	0.762	0.762	0.649	0.652	0.707	0.713	0.878	0.866	0.725	0.725
	max	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
MISR BrS AOD Fraction	mean	0.088	0.102	0.086	0.072	0.018	0.017	0.024	0.024	0.019	0.020	0.041	0.042	0.024	0.023
	+/- σ	0.094	0.103	0.133	0.107	0.046	0.046	0.053	0.054	0.041	0.043	0.080	0.082	0.054	0.053
	min	0.008	0.008	0.003	0.003	0.001	0.001	0.000	0.000	0.002	0.002	0.004	0.004	0.000	0.000
	LQ	0.010	0.010	0.010	0.010	0.007	0.007	0.006	0.006	0.006	0.006	0.009	0.009	0.006	0.006
	median	0.035	0.049	0.012	0.015	0.009	0.009	0.008	0.008	0.007	0.008	0.010	0.010	0.008	0.008
	UQ	0.154	0.171	0.083	0.083	0.010	0.010	0.010	0.010	0.010	0.010	0.020	0.020	0.010	0.010
	max	0.305	0.305	0.455	0.372	0.545	0.545	0.513	0.513	0.343	0.343	0.521	0.521	0.545	0.545
MISR NonSph Particle AOD Fraction	mean	0.037	0.040	0.068	0.083	0.014	0.014	0.011	0.010	0.016	0.016	0.048	0.051	0.016	0.016
	+/- σ	0.056	0.056	0.156	0.172	0.048	0.049	0.037	0.036	0.044	0.044	0.067	0.068	0.048	0.048
	min	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	LQ	0.000	0.002	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	median	0.007	0.010	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.019	0.000	0.000
	UQ	0.053	0.060	0.045	0.083	0.002	0.002	0.002	0.002	0.003	0.004	0.092	0.098	0.003	0.003
	max	0.237	0.237	0.667	0.667	0.453	0.453	0.320	0.320	0.347	0.347	0.374	0.374	0.667	0.667
MISR Very Small Particle AOD Fraction	mean	0.265	0.310	0.211	0.197	0.072	0.072	0.063	0.061	0.069	0.069	0.142	0.139	0.077	0.075
	+/- σ	0.162	0.168	0.158	0.154	0.118	0.117	0.127	0.125	0.131	0.132	0.131	0.130	0.133	0.132
	min	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	LQ	0.138	0.211	0.084	0.057	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	median	0.244	0.285	0.241	0.186	0.000	0.000	0.000	0.000	0.000	0.000	0.113	0.110	0.000	0.000
	UQ	0.356	0.386	0.296	0.296	0.104	0.103	0.056	0.052	0.087	0.086	0.250	0.250	0.109	0.103
	max	0.664	0.664	0.529	0.529	0.597	0.597	0.661	0.661	0.650	0.650	0.478	0.478	0.664	0.664
MISR Small Particle AOD Fraction	mean	0.596	0.555	0.433	0.451	0.560	0.563	0.490	0.493	0.479	0.484	0.647	0.644	0.509	0.512
	+/- σ	0.213	0.219	0.305	0.302	0.250	0.245	0.246	0.246	0.226	0.224	0.156	0.163	0.241	0.239
	min	0.013	0.013	0.005	0.005	0.003	0.003	0.005	0.005	0.007	0.007	0.109	0.109	0.003	0.003
	LQ	0.486	0.475	0.203	0.203	0.391	0.414	0.317	0.320	0.334	0.345	0.568	0.561	0.352	0.358
	median	0.597	0.583	0.465	0.477	0.588	0.585	0.522	0.526	0.511	0.513	0.667	0.661	0.544	0.546
	UQ	0.770	0.679	0.656	0.646	0.759	0.759	0.676	0.679	0.642	0.646	0.749	0.755	0.690	0.689
	max	0.875	0.875	0.949	0.949	1.000	0.993	1.000	1.000	0.989	0.989	0.915	0.915	1.000	1.000
MISR Medium Particle AOD Fraction	mean	0.003	0.000	0.000	0.000	0.138	0.135	0.218	0.218	0.242	0.235	0.036	0.034	0.195	0.193
	+/- σ	0.015	0.000	0.001	0.001	0.228	0.226	0.276	0.274	0.281	0.273	0.089	0.086	0.266	0.262
	min	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	LQ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	median	0.000	0.000	0.000	0.000	0.000	0.000	0.074	0.082	0.134	0.130	0.000	0.000	0.016	0.020
	UQ	0.000	0.000	0.000	0.000	0.215	0.215	0.387	0.389	0.433	0.424	0.000	0.000	0.352	0.347
	max	0.088	0.000	0.004	0.004	0.993	0.993	0.993	0.993	0.993	0.993	0.362	0.344	0.993	0.993
MISR Large Particle AOD Fraction	mean	0.067	0.072	0.123	0.142	0.042	0.042	0.047	0.046	0.049	0.050	0.074	0.078	0.049	0.049
	+/- σ	0.069	0.069	0.164	0.173	0.091	0.090	0.085	0.083	0.076	0.076	0.078	0.079	0.085	0.084
	min	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	LQ	0.003	0.012	0.000	0.023	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
	median	0.058	0.059	0.093	0.102	0.000	0.000	0.000	0.000	0.000	0.000	0.059	0.073	0.000	0.000
	UQ	0.097	0.104	0.146	0.193	0.049	0.055	0.065	0.059	0.074	0.077	0.124	0.131	0.072	0.072
	max	0.283	0.283	0.703	0.703	0.832	0.832	0.521	0.479	0.433	0.433	0.436	0.436	0.832	0.832

Table S5D. Sensitivity table for Peat plumes, stratified by month as well as across all months observed. LQ = lower quartile; UQ = upper quartile; 30% = at least 30% of a plume's MODIS fire pixels were associated with peat provided by Hugelius et al., 2021 (as used to define plume-types in this study); 40% = at least 40% of a plume's MODIS fire pixels were associated with peat (to demonstrate sensitivity)

		Apr.		May		Jun.		Jul.		Aug.		Sept.		All Mos.	
		30%	40%	30%	40%	30%	40%	30%	40%	30%	40%	30%	40%	30%	40%
		N=8	N=4	N=18	N=9	N=20	N=4	N=104	N=52	N=12	N=5	N=11	N=9	N=173	N=83
MINX Median Plume Height	mean	1.521	1.197	1.342	1.220	1.584	1.323	0.917	0.877	1.550	1.524	0.555	0.568	1.087	0.957
	+/- σ	0.492	0.424	0.703	0.805	0.575	0.531	0.284	0.233	0.356	0.274	0.093	0.096	0.503	0.434
	min	0.637	0.637	0.491	0.491	0.745	0.747	0.441	0.441	0.789	1.026	0.450	0.462	0.441	0.441
	LQ	1.241	0.789	0.783	0.747	1.148	0.911	0.729	0.697	1.330	1.503	0.498	0.503	0.745	0.684
	median	1.578	1.241	1.058	0.821	1.481	1.183	0.853	0.887	1.648	1.598	0.519	0.519	0.920	0.879
	UQ	1.780	1.605	1.750	1.439	1.940	1.735	1.029	0.972	1.832	1.639	0.573	0.594	1.439	1.031
	max	2.330	1.669	2.866	2.866	3.087	2.180	1.667	1.585	1.979	1.855	0.737	0.737	3.087	2.866
MISR Median Plume AOD	mean	0.746	0.820	1.163	1.206	1.020	0.866	0.850	0.781	1.971	2.589	1.155	1.219	0.995	0.990
	+/- σ	0.471	0.412	0.742	0.914	0.489	0.366	0.721	0.811	1.682	1.894	1.148	1.232	0.880	1.045
	min	0.287	0.366	0.244	0.244	0.288	0.445	0.193	0.193	0.272	0.272	0.236	0.236	0.193	0.193
	LQ	0.381	0.469	0.602	0.604	0.597	0.504	0.342	0.289	0.473	0.786	0.329	0.349	0.378	0.335
	median	0.511	0.728	0.947	0.835	0.930	0.872	0.511	0.385	1.137	2.420	1.093	1.093	0.693	0.529
	UQ	1.170	1.170	1.450	1.246	1.289	1.229	1.086	0.922	3.537	4.540	1.463	1.496	1.395	1.214
	max	1.553	1.457	3.122	3.122	2.226	1.275	3.791	3.791	4.929	4.929	4.426	4.426	4.929	4.929
MODIS Median Plume FRP	mean	32.48	26.35	27.47	23.57	25.36	16.82	30.60	30.73	58.00	47.19	20.44	18.41	31.01	28.73
	+/- σ	12.00	7.86	13.15	9.830	16.02	8.612	29.49	36.76	70.99	41.06	6.776	3.271	31.50	31.80
	min	17.40	17.40	12.55	12.55	6.400	6.400	6.600	7.100	11.85	11.85	10.90	10.90	6.400	6.400
	LQ	22.75	18.82	16.95	15.50	13.12	9.450	15.20	12.77	22.67	23.70	17.90	17.70	15.50	14.20
	median	29.57	25.60	26.00	23.40	19.07	15.60	20.20	17.95	36.42	34.80	18.80	18.40	21.20	18.80
	UQ	41.62	33.87	30.72	30.10	35.15	24.20	39.32	37.70	41.40	38.40	20.85	20.50	38.05	31.25
	max	54.60	36.80	58.60	44.40	61.20	29.70	249.20	249.20	273.8	127.2	39.70	23.35	273.8	249.2
MERRA-2 PBL Height	mean	1.796	1.659	1.279	1.072	1.721	1.349	1.192	1.217	1.543	1.339	0.827	0.866	1.291	1.198
	+/- σ	0.415	0.463	0.534	0.560	0.484	0.485	0.258	0.246	0.263	0.127	0.454	0.493	0.424	0.384
	min	1.086	1.086	0.272	0.272	0.880	0.902	0.423	0.894	1.230	1.230	0.317	0.317	0.272	0.272
	LQ	1.363	1.203	0.815	0.725	1.349	1.028	1.051	1.085	1.339	1.230	0.323	0.323	1.059	1.070
	median	2.098	1.709	1.234	0.815	1.779	1.163	1.166	1.158	1.493	1.249	0.657	1.140	1.199	1.172
	UQ	2.114	2.114	1.774	1.231	2.141	1.670	1.294	1.284	1.628	1.468	1.322	1.322	1.468	1.311
	max	2.131	2.131	2.142	2.108	2.634	2.168	2.377	2.377	2.066	1.518	1.392	1.392	2.634	2.377
MERRA-2 PBL-Top Stability	mean	2.689	4.486	5.045	6.576	2.382	2.448	7.556	7.865	4.459	6.602	9.603	11.07	6.387	7.573
	+/- σ	2.966	2.987	4.068	3.982	1.820	1.196	4.695	5.033	3.390	3.900	3.854	2.502	4.682	4.791
	min	-1.648	1.640	0.716	1.787	-0.080	0.653	-0.420	0.553	0.604	3.454	2.973	6.520	-1.648	0.553
	LQ	1.488	1.777	1.873	2.803	0.969	1.384	3.099	2.168	2.042	3.463	8.253	10.22	2.005	2.796
	median	1.894	3.666	3.616	7.346	1.798	2.688	7.300	8.685	3.458	3.625	10.57	10.99	5.251	7.452
	UQ	3.711	7.194	7.399	9.921	3.678	3.512	11.98	12.87	5.384	9.732	11.31	11.44	11.18	12.17
	max	8.971	8.971	12.38	12.17	6.484	3.761	16.02	16.02	12.73	12.73	16.77	16.77	16.77	16.77
MERRA-2 24-Hour Soil Moisture	mean	0.705	0.709	0.651	0.678	0.699	0.693	0.751	0.779	0.551	0.589	0.525	0.529	0.704	0.722
	+/- σ	0.063	0.086	0.068	0.054	0.108	0.106	0.099	0.073	0.103	0.072	0.021	0.013	0.118	0.111
	min	0.612	0.612	0.554	0.586	0.494	0.531	0.465	0.465	0.394	0.531	0.472	0.512	0.394	0.465
	LQ	0.685	0.649	0.594	0.637	0.606	0.613	0.750	0.786	0.484	0.531	0.515	0.517	0.593	0.646
	median	0.691	0.688	0.652	0.685	0.743	0.707	0.795	0.799	0.532	0.532	0.529	0.529	0.752	0.784
	UQ	0.715	0.769	0.724	0.733	0.772	0.772	0.808	0.805	0.654	0.655	0.537	0.537	0.801	0.802
	max	0.847	0.847	0.737	0.737	0.832	0.827	0.866	0.866	0.710	0.696	0.548	0.548	0.866	0.866
MISR SSA₅₅₈	mean	0.849	0.865	0.892	0.870	0.923	0.920	0.932	0.927	0.933	0.938	0.891	0.890	0.920	0.914
	+/- σ	0.044	0.044	0.038	0.040	0.027	0.022	0.034	0.041	0.026	0.007	0.035	0.038	0.040	0.045
	min	0.800	0.803	0.814	0.814	0.876	0.900	0.814	0.814	0.872	0.926	0.813	0.813	0.800	0.803
	LQ	0.801	0.832	0.862	0.837	0.907	0.904	0.913	0.903	0.919	0.936	0.877	0.878	0.899	0.890
	median	0.852	0.865	0.901	0.860	0.916	0.912	0.936	0.936	0.942	0.938	0.891	0.891	0.927	0.923
	UQ	0.878	0.897	0.920	0.918	0.941	0.935	0.959	0.961	0.953	0.945	0.916	0.921	0.950	0.950
	max	0.927	0.927	0.941	0.925	0.983	0.956	0.985	0.984	0.960	0.946	0.937	0.937	0.985	0.984
MISR ANG	mean	1.894	1.912	1.718	1.822	1.800	1.770	1.780	1.813	1.579	1.568	1.783	1.788	1.768	1.799
	+/- σ	0.199	0.197	0.253	0.250	0.196	0.256	0.252	0.242	0.296	0.368	0.298	0.315	0.258	0.268

	min	1.622	1.714	1.238	1.238	1.441	1.441	1.188	1.280	1.101	1.101	1.126	1.126	1.101	1.101
	LQ	1.720	1.720	1.491	1.733	1.599	1.578	1.568	1.601	1.264	1.174	1.608	1.648	1.569	1.619
	median	1.880	1.883	1.742	1.925	1.805	1.741	1.816	1.861	1.675	1.659	1.731	1.731	1.797	1.839
	UQ	2.083	2.103	1.955	1.997	2.003	1.961	2.005	2.033	1.817	1.943	2.037	2.042	1.997	2.036
	max	2.167	2.167	2.062	2.062	2.158	2.158	2.165	2.147	1.962	1.962	2.166	2.166	2.167	2.167
MISR BIS AOD Fraction	mean	0.793	0.799	0.678	0.724	0.606	0.664	0.528	0.536	0.515	0.559	0.803	0.809	0.582	0.606
	+/- σ	0.223	0.164	0.201	0.114	0.242	0.183	0.245	0.256	0.204	0.082	0.157	0.170	0.249	0.245
	min	0.333	0.616	0.006	0.592	0.010	0.349	0.007	0.010	0.083	0.463	0.456	0.456	0.006	0.010
	LQ	0.636	0.636	0.639	0.641	0.456	0.544	0.342	0.345	0.381	0.499	0.715	0.725	0.396	0.446
	median	0.884	0.795	0.670	0.669	0.721	0.760	0.528	0.528	0.524	0.550	0.851	0.886	0.620	0.622
	UQ	0.990	0.961	0.763	0.780	0.781	0.785	0.721	0.732	0.695	0.580	0.919	0.946	0.780	0.787
	max	0.990	0.990	0.990	0.990	0.896	0.788	0.990	0.990	0.796	0.703	0.990	0.990	0.990	0.990
MISR BrS AOD Fraction	mean	0.048	0.010	0.049	0.082	0.013	0.008	0.010	0.011	0.027	0.012	0.022	0.025	0.018	0.020
	+/- σ	0.101	0.000	0.067	0.080	0.017	0.002	0.017	0.022	0.058	0.010	0.040	0.044	0.041	0.041
	min	0.009	0.009	0.006	0.008	0.004	0.005	0.002	0.003	0.005	0.006	0.007	0.007	0.002	0.003
	LQ	0.010	0.009	0.009	0.010	0.007	0.007	0.006	0.005	0.006	0.007	0.009	0.010	0.006	0.006
	median	0.010	0.010	0.010	0.018	0.009	0.009	0.008	0.008	0.007	0.007	0.010	0.010	0.009	0.009
	UQ	0.010	0.010	0.045	0.174	0.010	0.010	0.009	0.009	0.009	0.008	0.010	0.010	0.010	0.010
	max	0.316	0.010	0.191	0.191	0.084	0.010	0.165	0.165	0.218	0.031	0.150	0.150	0.316	0.191
MISR NonSph Particle AOD Fraction	mean	0.034	0.047	0.031	0.009	0.004	0.001	0.009	0.011	0.005	0.000	0.012	0.015	0.012	0.012
	+/- σ	0.049	0.057	0.069	0.023	0.015	0.001	0.025	0.028	0.013	0.000	0.032	0.035	0.034	0.030
	min	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	LQ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	median	0.002	0.025	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	UQ	0.066	0.094	0.002	0.002	0.002	0.001	0.001	0.002	0.001	0.000	0.001	0.001	0.002	0.002
	max	0.139	0.139	0.230	0.074	0.068	0.002	0.134	0.117	0.049	0.001	0.112	0.112	0.230	0.139
MISR Very Small Particle AOD Fraction	mean	0.260	0.262	0.137	0.183	0.057	0.055	0.045	0.058	0.034	0.000	0.090	0.109	0.068	0.083
	+/- σ	0.161	0.183	0.162	0.162	0.098	0.095	0.079	0.096	0.086	0.000	0.122	0.127	0.114	0.127
	min	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	LQ	0.115	0.093	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	median	0.301	0.289	0.049	0.181	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	UQ	0.391	0.431	0.254	0.294	0.088	0.109	0.071	0.084	0.000	0.000	0.206	0.232	0.097	0.127
	max	0.470	0.470	0.483	0.483	0.364	0.219	0.435	0.435	0.304	0.000	0.325	0.325	0.483	0.483
MISR Small Particle AOD Fraction	mean	0.557	0.591	0.518	0.533	0.618	0.586	0.641	0.652	0.446	0.463	0.646	0.644	0.608	0.621
	+/- σ	0.203	0.239	0.213	0.205	0.184	0.170	0.194	0.173	0.259	0.333	0.198	0.187	0.209	0.203
	min	0.197	0.197	0.085	0.250	0.300	0.300	0.090	0.161	0.033	0.033	0.122	0.122	0.033	0.033
	LQ	0.387	0.401	0.355	0.341	0.485	0.460	0.483	0.526	0.220	0.104	0.660	0.676	0.459	0.496
	median	0.611	0.691	0.543	0.603	0.598	0.657	0.669	0.660	0.481	0.594	0.713	0.713	0.640	0.662
	UQ	0.739	0.781	0.656	0.689	0.758	0.712	0.797	0.806	0.632	0.735	0.740	0.738	0.762	0.753
	max	0.784	0.784	0.830	0.818	0.929	0.728	0.999	0.913	0.850	0.850	0.896	0.746	0.999	0.913
MISR Medium Particle AOD Fraction	mean	0.006	0.012	0.130	0.114	0.121	0.147	0.145	0.120	0.303	0.412	0.176	0.182	0.147	0.140
	+/- σ	0.016	0.022	0.227	0.241	0.190	0.148	0.205	0.180	0.324	0.392	0.232	0.246	0.220	0.222
	min	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	LQ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.023	0.000	0.000	0.000	0.000
	median	0.000	0.000	0.000	0.000	0.000	0.132	0.000	0.000	0.202	0.291	0.169	0.169	0.000	0.000
	UQ	0.000	0.025	0.155	0.000	0.293	0.293	0.273	0.234	0.524	0.806	0.237	0.196	0.272	0.249
	max	0.050	0.050	0.750	0.750	0.498	0.322	0.905	0.609	0.939	0.939	0.817	0.817	0.939	0.939
MISR Large Particle AOD Fraction	mean	0.072	0.077	0.064	0.045	0.030	0.007	0.033	0.034	0.030	0.007	0.022	0.026	0.037	0.034
	+/- σ	0.085	0.093	0.092	0.045	0.059	0.011	0.067	0.062	0.057	0.014	0.038	0.041	0.069	0.059
	min	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	LQ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	median	0.039	0.039	0.040	0.049	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	UQ	0.135	0.153	0.081	0.079	0.040	0.013	0.037	0.039	0.029	0.000	0.027	0.044	0.045	0.044
	max	0.228	0.228	0.364	0.125	0.237	0.026	0.326	0.247	0.195	0.034	0.131	0.131	0.364	0.247