

PyCAMA report generated by tropl2-proc

tropl2-proc

2025-05-15 (02:30)

1 Short Introduction

1.1 The list of parameters

You may want to keep the list given in table 1 at hand when viewing the results.

2 Definitions

The averages shown here are *unweighed* averages:

$$\bar{x} = \frac{1}{N} \sum_{i=1}^N x_i \quad (1)$$

with N the number of observations in the dataset.

The spread of the measurements is indicated with the variance $V(x)$, or rather the standard deviation $\sigma(x) = \sqrt{V(x)}$.

$$V(x) = \frac{1}{N-1} \sum_{i=1}^N (x_i - \bar{x})^2 \quad (2)$$

We also report the more robust statistics median, minimum, maximum, various percentiles and inter quartile range.

The median m is the value of parameter x for which half of the observations of x is smaller than m :

$$P(x \leq m) = P(x \geq m) = \int_{-\infty}^m f(x) dx = \frac{1}{2} \quad (3)$$

with $f(x)$ the probability density function.

The median is a special case of a percentile. Instead of $\frac{1}{2}$ in equation 3, other threshold values can be used. We report results for 1 %, 5 %, 10 %, 15.9 %, 25 %, 75 %, 84.1 %, 90 %, 95 % and 99 %. The inter quartile range is the difference between the 75 % and 25 % percentiles. Similarly the minimum and maximum values correspond to the 0 % and 100 % percentiles respectively.

For normally distributed parameters the mean and median are the same, while the $\mu \pm \sigma$ values and the 15.9 % and 84.1 % percentiles coincide.

To get a measure for the relation of one variable $x_{(k)}$ with another $x_{(l)}$, we calculate the covariance matrix C_{kl} .

$$C_{kl} = C(x_{(k)}, x_{(l)}) = \frac{1}{N-1} \sum_{i=1}^N (x_{(k),i} - \bar{x}_{(k)})(x_{(l),i} - \bar{x}_{(l)}) \quad (4)$$

Rather than a dimensionally dependent covariance, it is often easier to interpret a correlation matrix R_{kl} , a matrix of Pearson's r coefficients:

$$R_{kl} = R(x_{(k)}, x_{(l)}) = \frac{C_{kl}}{\sqrt{C_{kk}C_{ll}}} = \frac{C_{kl}}{\sqrt{V(x_{(k)})V(x_{(l)})}} \quad (5)$$

The diagonal elements of the covariance matrix are the variances of the elements, $V(x_{(k)}) = C_{kk}$ and obviously $R_{kk} = 1$.

Table 1: Parameterlist and basic statistics for the analysis

Variable	mean $\pm \sigma$	Count	Mode	IQR	Median	Minimum	Maximum
qa value [1]	0.589 ± 0.380	18120324	5.000×10^{-3}	0.690	0.710	0.0	1.000
cloud fraction [1]	0.575 ± 0.348	18120324	0.995	0.743	0.569	6.469×10^{-3}	1.000
cloud top height [m]	$(0.380 \pm 0.264) \times 10^4$	18120324	1.425×10^3	3.445×10^3	3.199×10^3	0.0	2.000×10^4
cloud optical thickness [1]	18.4 ± 32.4	18120324	8.51	10.6	9.08	1.000	250
cloud fraction crb [1]	0.575 ± 0.348	18120324	0.995	0.743	0.567	7.878×10^{-3}	1.000
cloud height crb [m]	$(0.290 \pm 0.229) \times 10^4$	18120324	75.0	3.006×10^3	2.404×10^3	0.0	2.000×10^4
cloud albedo crb [1]	0.584 ± 0.210	18120324	0.995	0.274	0.570	0.0	1.000
surface albedo fitted [1]	0.264 ± 0.319	18120324	2.500×10^{-2}	0.412	6.797×10^{-2}	0.0	1.000
surface albedo fitted crb [1]	0.256 ± 0.314	18120324	1.500×10^{-2}	0.447	5.173×10^{-2}	0.0	1.000
fitted root mean square [1]	$(7.968 \pm 12.436) \times 10^{-4}$	18120324	5.000×10^{-5}	9.749×10^{-4}	3.743×10^{-4}	1.136×10^{-6}	0.187
fitted root mean square crb [1]	$(7.002 \pm 9.119) \times 10^{-4}$	18120324	5.000×10^{-5}	9.287×10^{-4}	3.025×10^{-4}	9.614×10^{-7}	8.266×10^{-2}
wavelength shift [nm]	$(7.332 \pm 6.985) \times 10^{-3}$	18120324	-3.000×10^{-4}	1.020×10^{-2}	6.623×10^{-3}	-4.645×10^{-2}	6.635×10^{-2}
cloud fraction apriori [1]	0.589 ± 0.354	18120324	0.995	0.757	0.600	0.0	1.000
reflectance blue ocra [1]	0.558 ± 0.223	18120324	0.265	0.382	0.534	0.135	1.91
reflectance green ocra [1]	0.507 ± 0.251	18120324	0.185	0.449	0.485	7.990×10^{-2}	1.99
reflectance continuum aband [1]	0.459 ± 0.275	18120324	4.500×10^{-2}	0.459	0.450	1.156×10^{-2}	6.13

Table 2: Percentile ranges

Variable	1 %	5 %	10 %	15.9 %	25 %	75 %	84.1 %	90 %	95 %	99 %
qa value [1]	0.0	0.0	0.0	0.0	0.220	0.910	1.000	1.000	1.000	1.000
cloud fraction [1]	2.625×10^{-2}	6.815×10^{-2}	0.105	0.154	0.241	0.984	1.000	1.000	1.000	1.000
cloud top height [m]	188	628	1.020×10^3	1.343×10^3	1.760×10^3	5.205×10^3	6.485×10^3	7.668×10^3	9.158×10^3	1.140×10^4
cloud optical thickness [1]	1.000	2.74	3.85	4.68	5.67	16.2	24.5	36.1	61.1	223
cloud fraction crb [1]	2.571×10^{-2}	6.709×10^{-2}	0.104	0.153	0.240	0.983	1.000	1.000	1.000	1.000
cloud height crb [m]	0.0	62.3	405	737	1.120×10^3	4.126×10^3	5.260×10^3	6.287×10^3	7.563×10^3	9.549×10^3
cloud albedo crb [1]	6.396×10^{-3}	0.219	0.332	0.402	0.456	0.730	0.814	0.875	0.935	1.000
surface albedo fitted [1]	0.0	1.004×10^{-2}	1.582×10^{-2}	2.113×10^{-2}	2.891×10^{-2}	0.441	0.748	0.838	0.912	0.988
surface albedo fitted crb [1]	7.609×10^{-5}	7.477×10^{-3}	1.144×10^{-2}	1.541×10^{-2}	2.159×10^{-2}	0.469	0.740	0.812	0.868	0.947
fitted root mean square [1]	1.170×10^{-5}	2.458×10^{-5}	3.957×10^{-5}	6.235×10^{-5}	1.100×10^{-4}	1.085×10^{-3}	1.648×10^{-3}	2.169×10^{-3}	2.790×10^{-3}	4.195×10^{-3}
fitted root mean square crb [1]	5.799×10^{-6}	1.323×10^{-5}	2.319×10^{-5}	3.646×10^{-5}	6.667×10^{-5}	9.954×10^{-4}	1.541×10^{-3}	2.045×10^{-3}	2.662×10^{-3}	3.822×10^{-3}
wavelength shift [nm]	-7.939×10^{-3}	-1.210×10^{-3}	-1.584×10^{-4}	4.485×10^{-4}	1.842×10^{-3}	1.205×10^{-2}	1.449×10^{-2}	1.657×10^{-2}	1.931×10^{-2}	2.523×10^{-2}
cloud fraction apriori [1]	2.898×10^{-2}	6.470×10^{-2}	9.932×10^{-2}	0.149	0.243	1.000	1.000	1.000	1.000	1.000
reflectance blue ocra [1]	0.232	0.258	0.282	0.311	0.359	0.741	0.816	0.865	0.914	1.05
reflectance green ocra [1]	0.151	0.173	0.192	0.219	0.270	0.719	0.802	0.856	0.905	1.01
reflectance continuum aband [1]	2.970×10^{-2}	5.356×10^{-2}	8.638×10^{-2}	0.132	0.223	0.682	0.770	0.830	0.890	1.01

Table 3: Parameterlist and basic statistics for the analysis for observations in the northern hemisphere

Variable	mean $\pm \sigma$	Count	IQR	Median	Minimum	Maximum	25 % percentile	75 % percentile
qa value [1]	0.560 ± 0.375	11605213	0.770	0.690	0.0	1.000	0.130	0.900
cloud fraction [1]	0.609 ± 0.350	11605213	0.732	0.634	7.540×10^{-3}	1.000	0.267	0.999
cloud top height [m]	$(0.368 \pm 0.268) \times 10^4$	11605213	3.472×10^3	3.092×10^3	0.0	2.000×10^4	1.616×10^3	5.087×10^3
cloud optical thickness [1]	14.5 ± 26.0	11605213	8.01	8.21	1.000	250	5.21	13.2
cloud fraction crb [1]	0.609 ± 0.350	11605213	0.733	0.634	7.878×10^{-3}	1.000	0.267	1.000
cloud height crb [m]	$(0.268 \pm 0.229) \times 10^4$	11605213	3.027×10^3	2.198×10^3	0.0	2.000×10^4	860	3.886×10^3
cloud albedo crb [1]	0.591 ± 0.228	11605213	0.321	0.582	0.0	1.000	0.448	0.769
surface albedo fitted [1]	0.372 ± 0.348	11605213	0.707	0.246	0.0	1.000	3.722×10^{-2}	0.744
surface albedo fitted crb [1]	0.365 ± 0.340	11605213	0.706	0.247	0.0	1.000	3.066×10^{-2}	0.736
fitted root mean square [1]	$(1.052 \pm 1.448) \times 10^{-3}$	11605213	1.365×10^{-3}	6.479×10^{-4}	1.742×10^{-6}	0.187	1.806×10^{-4}	1.546×10^{-3}
fitted root mean square crb [1]	$(9.214 \pm 10.183) \times 10^{-4}$	11605213	1.308×10^{-3}	5.507×10^{-4}	9.614×10^{-7}	8.266×10^{-2}	1.220×10^{-4}	1.430×10^{-3}
wavelength shift [nm]	$(8.703 \pm 6.994) \times 10^{-3}$	11605213	1.013×10^{-2}	8.579×10^{-3}	-4.645×10^{-2}	6.635×10^{-2}	3.362×10^{-3}	1.349×10^{-2}
cloud fraction apriori [1]	0.630 ± 0.354	11605213	0.718	0.691	0.0	1.000	0.282	1.000
reflectance blue ocra [1]	0.595 ± 0.234	11605213	0.426	0.611	0.141	1.91	0.370	0.796
reflectance green ocra [1]	0.554 ± 0.261	11605213	0.489	0.582	7.990×10^{-2}	1.83	0.293	0.782
reflectance continuum aband [1]	0.517 ± 0.274	11605213	0.455	0.545	1.318×10^{-2}	4.03	0.290	0.745

Table 4: Parameterlist and basic statistics for the analysis for observations in the southern hemisphere

Variable	mean $\pm \sigma$	Count	IQR	Median	Minimum	Maximum	25 % percentile	75 % percentile
qa value [1]	0.641 ± 0.385	6515111	0.700	0.870	0.0	1.000	0.300	1.000
cloud fraction [1]	0.516 ± 0.335	6515111	0.645	0.479	6.469×10^{-3}	1.000	0.201	0.847
cloud top height [m]	$(0.402 \pm 0.255) \times 10^4$	6515111	3.477×10^3	3.390×10^3	0.0	2.000×10^4	1.966×10^3	5.444×10^3
cloud optical thickness [1]	25.3 ± 40.5	6515111	16.7	11.5	1.000	250	6.90	23.6
cloud fraction crb [1]	0.514 ± 0.335	6515111	0.643	0.475	8.206×10^{-3}	1.000	0.200	0.843
cloud height crb [m]	$(0.330 \pm 0.225) \times 10^4$	6515111	3.112×10^3	2.771×10^3	0.0	1.685×10^4	1.464×10^3	4.576×10^3
cloud albedo crb [1]	0.570 ± 0.172	6515111	0.203	0.557	0.0	1.000	0.468	0.671
surface albedo fitted [1]	$(7.184 \pm 10.041) \times 10^{-2}$	6515111	4.322×10^{-2}	3.799×10^{-2}	0.0	1.000	2.285×10^{-2}	6.606×10^{-2}
surface albedo fitted crb [1]	$(6.165 \pm 10.048) \times 10^{-2}$	6515111	3.223×10^{-2}	2.688×10^{-2}	0.0	1.000	1.538×10^{-2}	4.762×10^{-2}
fitted root mean square [1]	$(3.425 \pm 4.930) \times 10^{-4}$	6515111	3.458×10^{-4}	1.711×10^{-4}	1.136×10^{-6}	0.137	6.333×10^{-5}	4.091×10^{-4}
fitted root mean square crb [1]	$(3.062 \pm 4.725) \times 10^{-4}$	6515111	3.349×10^{-4}	1.092×10^{-4}	1.036×10^{-6}	2.448×10^{-2}	3.763×10^{-5}	3.726×10^{-4}
wavelength shift [nm]	$(4.889 \pm 6.267) \times 10^{-3}$	6515111	7.690×10^{-3}	3.598×10^{-3}	-4.444×10^{-2}	6.242×10^{-2}	6.010×10^{-4}	8.291×10^{-3}
cloud fraction apriori [1]	0.515 ± 0.342	6515111	0.669	0.476	0.0	1.000	0.190	0.859
reflectance blue oca [1]	0.494 ± 0.184	6515111	0.258	0.460	0.135	1.90	0.349	0.607
reflectance green oca [1]	0.424 ± 0.208	6515111	0.312	0.387	8.046×10^{-2}	1.99	0.249	0.561
reflectance continuum aband [1]	0.355 ± 0.246	6515111	0.370	0.324	1.156×10^{-2}	6.13	0.146	0.516

Table 5: Parameterlist and basic statistics for the analysis for observations over water

Variable	mean $\pm \sigma$	Count	IQR	Median	Minimum	Maximum	25 % percentile	75 % percentile
qa value [1]	0.603 ± 0.378	12291556	0.640	0.760	0.0	1.000	0.300	0.940
cloud fraction [1]	0.537 ± 0.344	12291556	0.711	0.501	7.632×10^{-3}	1.000	0.211	0.922
cloud top height [m]	$(0.381 \pm 0.267) \times 10^4$	12291556	3.550×10^3	3.170×10^3	0.0	2.000×10^4	1.720×10^3	5.270×10^3
cloud optical thickness [1]	20.5 ± 35.1	12291556	12.0	9.89	1.000	250	6.22	18.2
cloud fraction crb [1]	0.536 ± 0.345	12291556	0.710	0.498	8.438×10^{-3}	1.000	0.210	0.920
cloud height crb [m]	$(0.298 \pm 0.235) \times 10^4$	12291556	3.114×10^3	2.472×10^3	0.0	2.000×10^4	1.132×10^3	4.246×10^3
cloud albedo crb [1]	0.567 ± 0.201	12291556	0.250	0.550	0.0	1.000	0.447	0.697
surface albedo fitted [1]	0.170 ± 0.286	12291556	5.161×10^{-2}	3.788×10^{-2}	0.0	1.000	2.217×10^{-2}	7.378×10^{-2}
surface albedo fitted crb [1]	0.159 ± 0.278	12291556	3.999×10^{-2}	2.866×10^{-2}	0.0	1.000	1.620×10^{-2}	5.619×10^{-2}
fitted root mean square [1]	$(5.854 \pm 11.238) \times 10^{-4}$	12291556	6.273×10^{-4}	2.275×10^{-4}	1.136×10^{-6}	0.145	7.751×10^{-5}	7.048×10^{-4}
fitted root mean square crb [1]	$(5.036 \pm 7.678) \times 10^{-4}$	12291556	5.659×10^{-4}	1.693×10^{-4}	9.614×10^{-7}	8.266×10^{-2}	5.087×10^{-5}	6.168×10^{-4}
wavelength shift [nm]	$(6.546 \pm 6.840) \times 10^{-3}$	12291556	9.553×10^{-3}	5.539×10^{-3}	-4.477×10^{-2}	6.501×10^{-2}	1.406×10^{-3}	1.096×10^{-2}
cloud fraction apriori [1]	0.546 ± 0.350	12291556	0.747	0.518	0.0	1.000	0.209	0.956
reflectance blue oca [1]	0.538 ± 0.211	12291556	0.351	0.507	0.158	1.88	0.353	0.705
reflectance green oca [1]	0.479 ± 0.240	12291556	0.421	0.449	0.100	1.99	0.256	0.677
reflectance continuum aband [1]	0.404 ± 0.274	12291556	0.483	0.382	1.318×10^{-2}	6.13	0.145	0.628

Table 6: Parameterlist and basic statistics for the analysis for observations over land

Variable	mean $\pm \sigma$	Count	IQR	Median	Minimum	Maximum	25 % percentile	75 % percentile
qa value [1]	0.623 ± 0.366	3614256	0.580	0.750	0.0	1.000	0.350	0.930
cloud fraction [1]	0.635 ± 0.345	3614256	0.694	0.699	8.250×10^{-3}	1.000	0.305	0.999
cloud top height [m]	$(0.404 \pm 0.259) \times 10^4$	3614256	3.204×10^3	3.500×10^3	0.0	2.000×10^4	2.152×10^3	5.356×10^3
cloud optical thickness [1]	13.1 ± 20.8	3614256	7.74	7.85	1.000	250	5.11	12.9
cloud fraction crb [1]	0.634 ± 0.346	3614256	0.696	0.699	7.878×10^{-3}	1.000	0.304	1.000
cloud height crb [m]	$(0.297 \pm 0.216) \times 10^4$	3614256	2.831×10^3	2.453×10^3	0.0	2.000×10^4	1.360×10^3	4.191×10^3
cloud albedo crb [1]	0.615 ± 0.215	3614256	0.291	0.612	0.0	1.000	0.486	0.777
surface albedo fitted [1]	0.425 ± 0.274	3614256	0.373	0.301	0.0	1.000	0.227	0.600
surface albedo fitted crb [1]	0.422 ± 0.266	3614256	0.406	0.301	3.652×10^{-3}	1.000	0.223	0.629
fitted root mean square [1]	$(1.267 \pm 1.269) \times 10^{-3}$	3614256	1.378×10^{-3}	9.407×10^{-4}	4.399×10^{-6}	0.187	4.621×10^{-4}	1.841×10^{-3}
fitted root mean square crb [1]	$(1.162 \pm 0.993) \times 10^{-3}$	3614256	1.305×10^{-3}	8.993×10^{-4}	1.618×10^{-6}	4.516×10^{-2}	4.166×10^{-4}	1.721×10^{-3}
wavelength shift [nm]	$(9.039 \pm 6.817) \times 10^{-3}$	3614256	9.644×10^{-3}	8.968×10^{-3}	-3.871×10^{-2}	5.576×10^{-2}	4.042×10^{-3}	1.369×10^{-2}
cloud fraction apriori [1]	0.654 ± 0.352	3614256	0.685	0.754	0.0	1.000	0.315	1.000
reflectance blue ocra [1]	0.567 ± 0.241	3614256	0.425	0.543	0.136	1.91	0.348	0.773
reflectance green ocra [1]	0.530 ± 0.265	3614256	0.485	0.509	7.990×10^{-2}	1.86	0.277	0.762
reflectance continuum aband [1]	0.554 ± 0.234	3614256	0.400	0.527	1.431×10^{-2}	3.79	0.350	0.751

3 Granule outlines

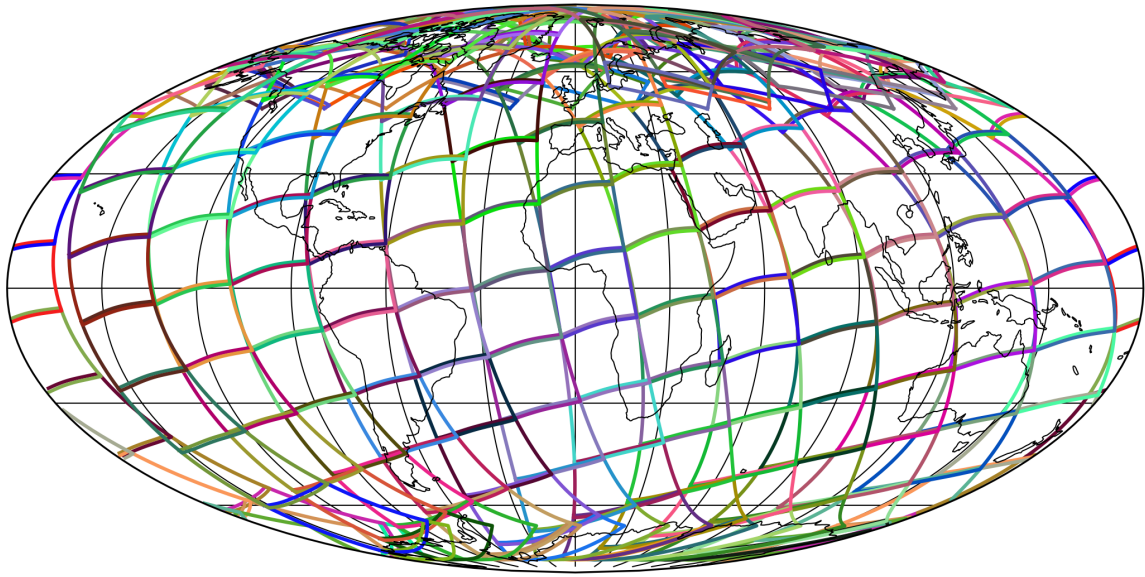


Figure 1: Outline of the granules.

4 Input data monitoring

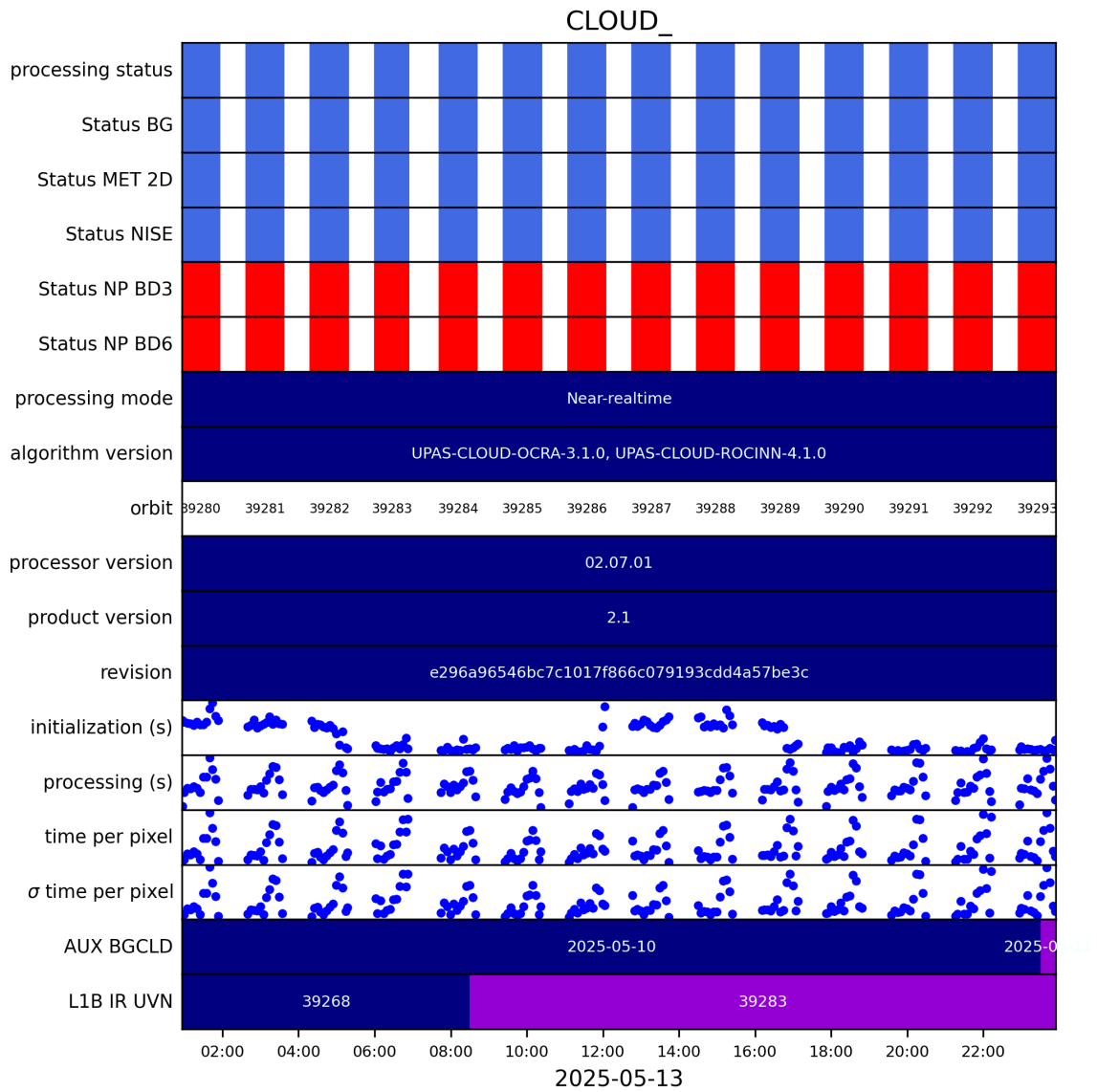


Figure 2: Input data per granule

5 Warnings and errors

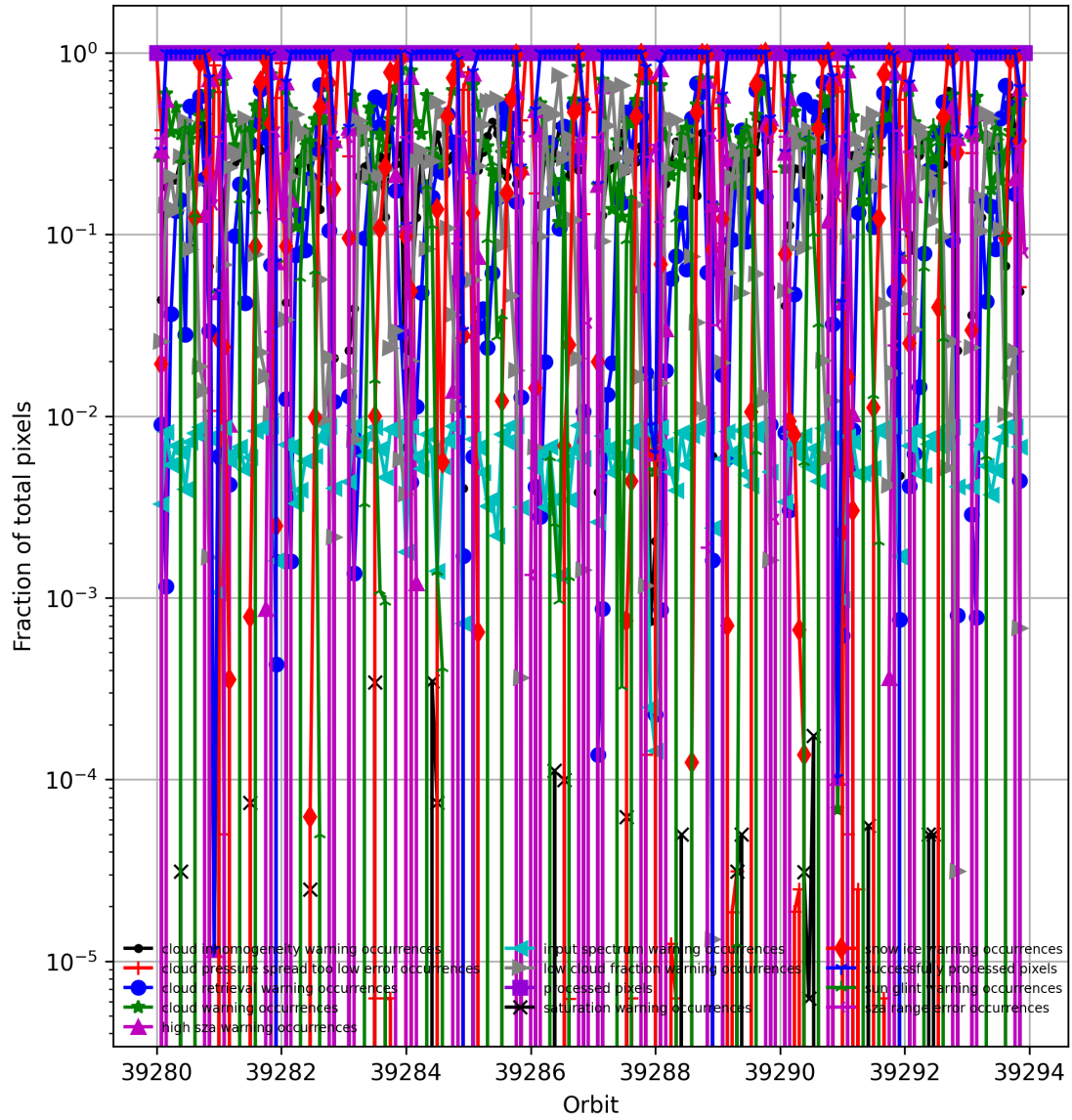


Figure 3: Fraction of pixels with specific warnings and errors during processing

6 World maps

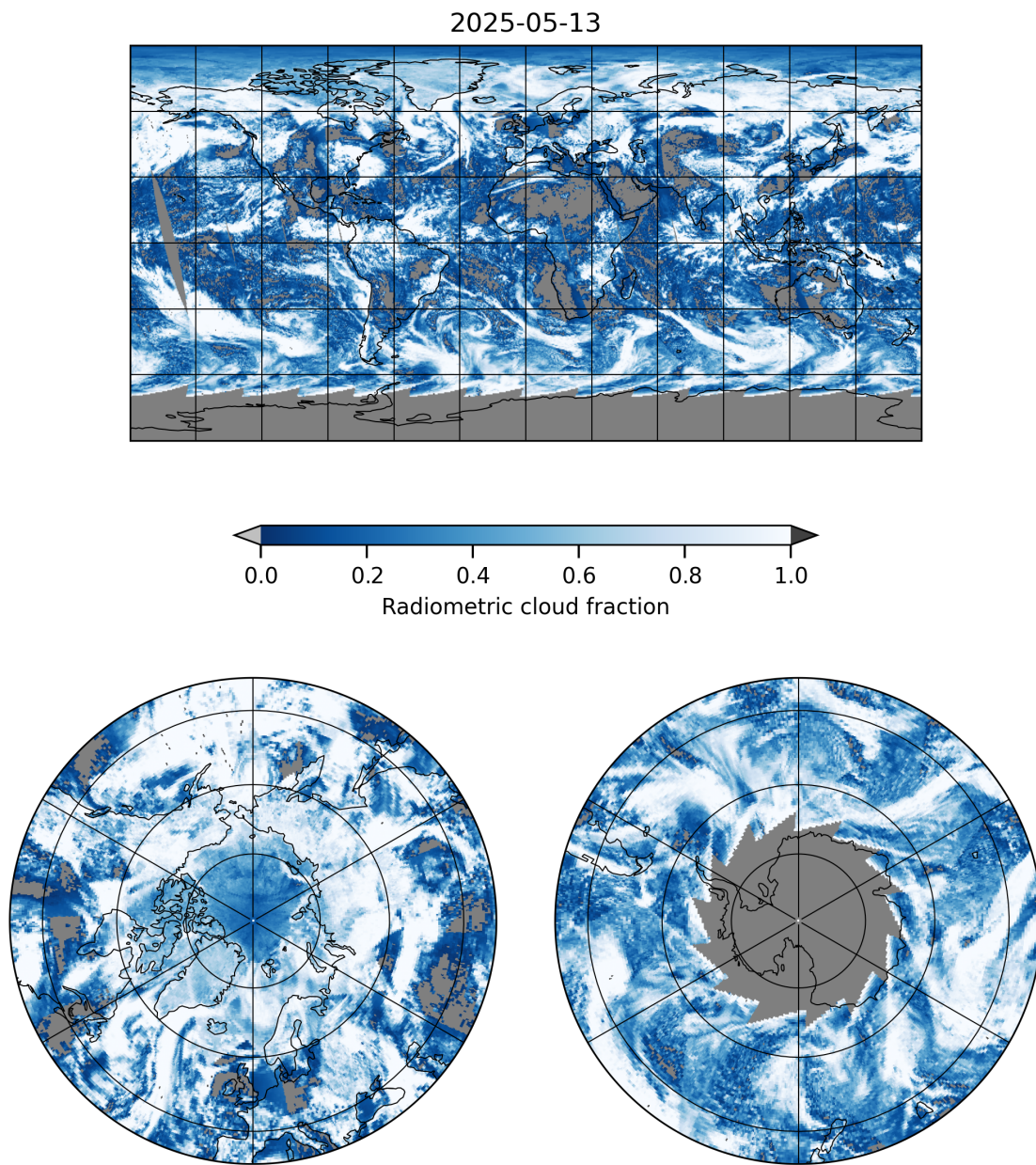


Figure 4: Map of “Radiometric cloud fraction” for 2025-05-13 to 2025-05-13

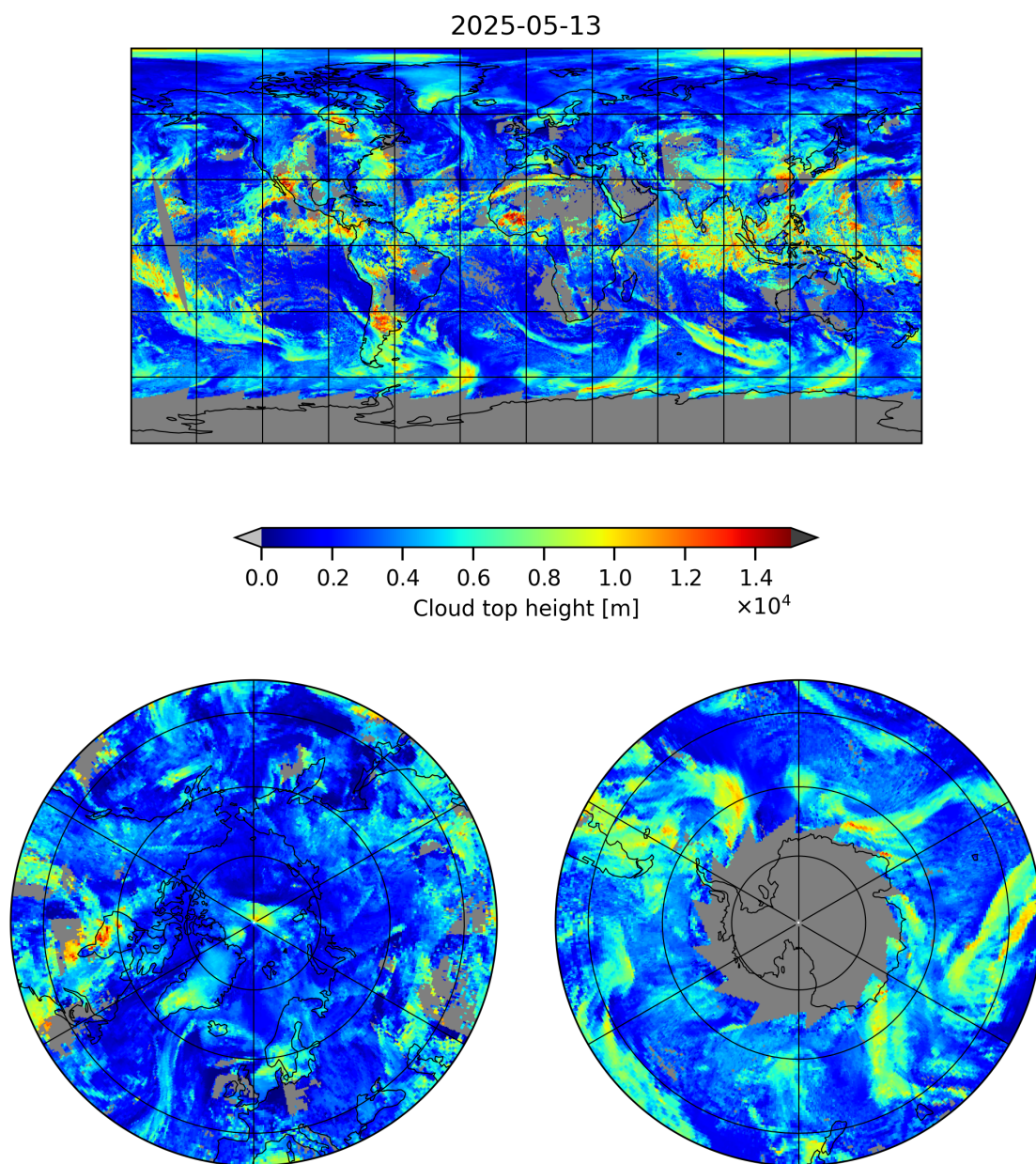


Figure 5: Map of “Cloud top height” for 2025-05-13 to 2025-05-13

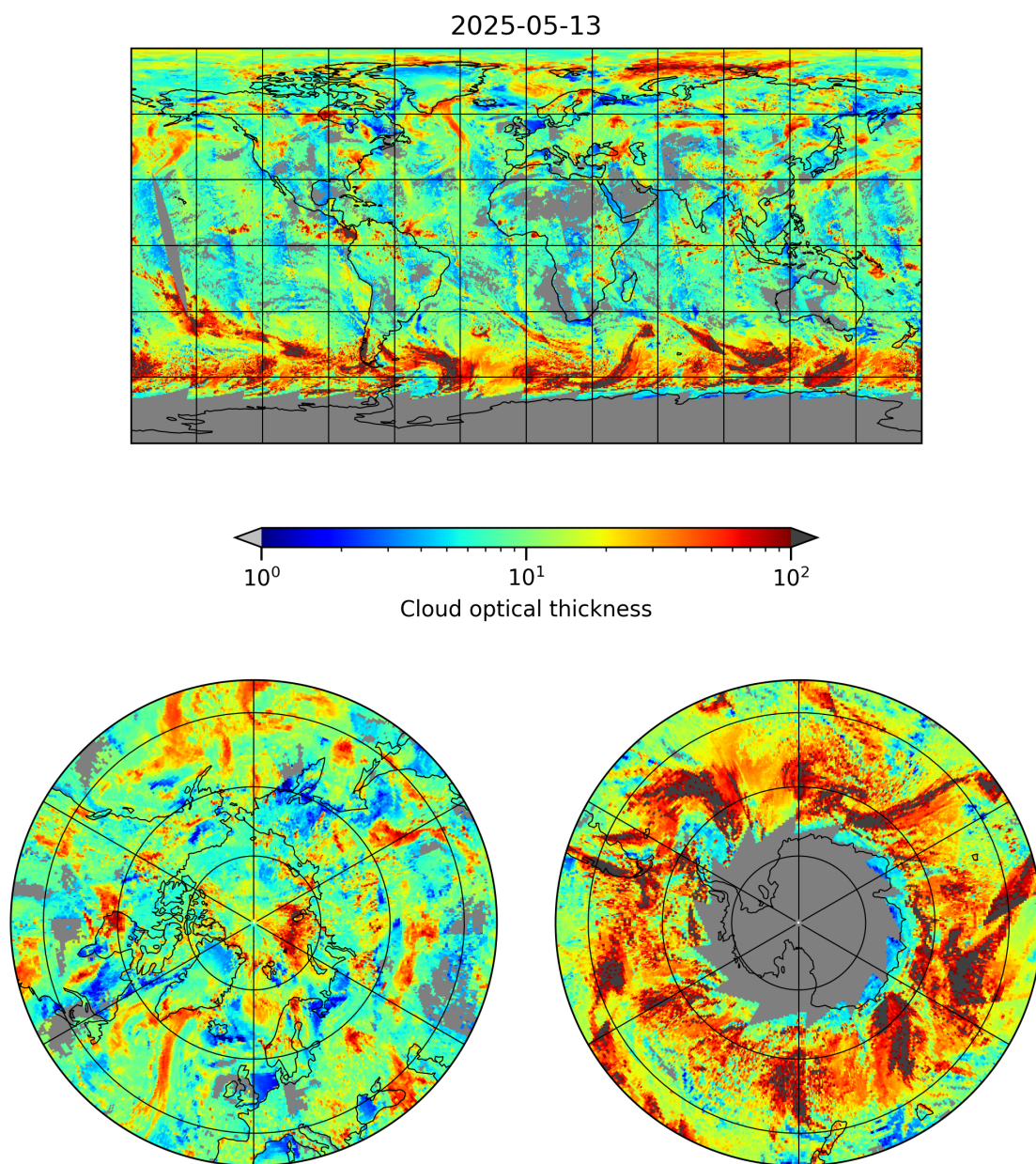


Figure 6: Map of “Cloud optical thickness” for 2025-05-13 to 2025-05-13

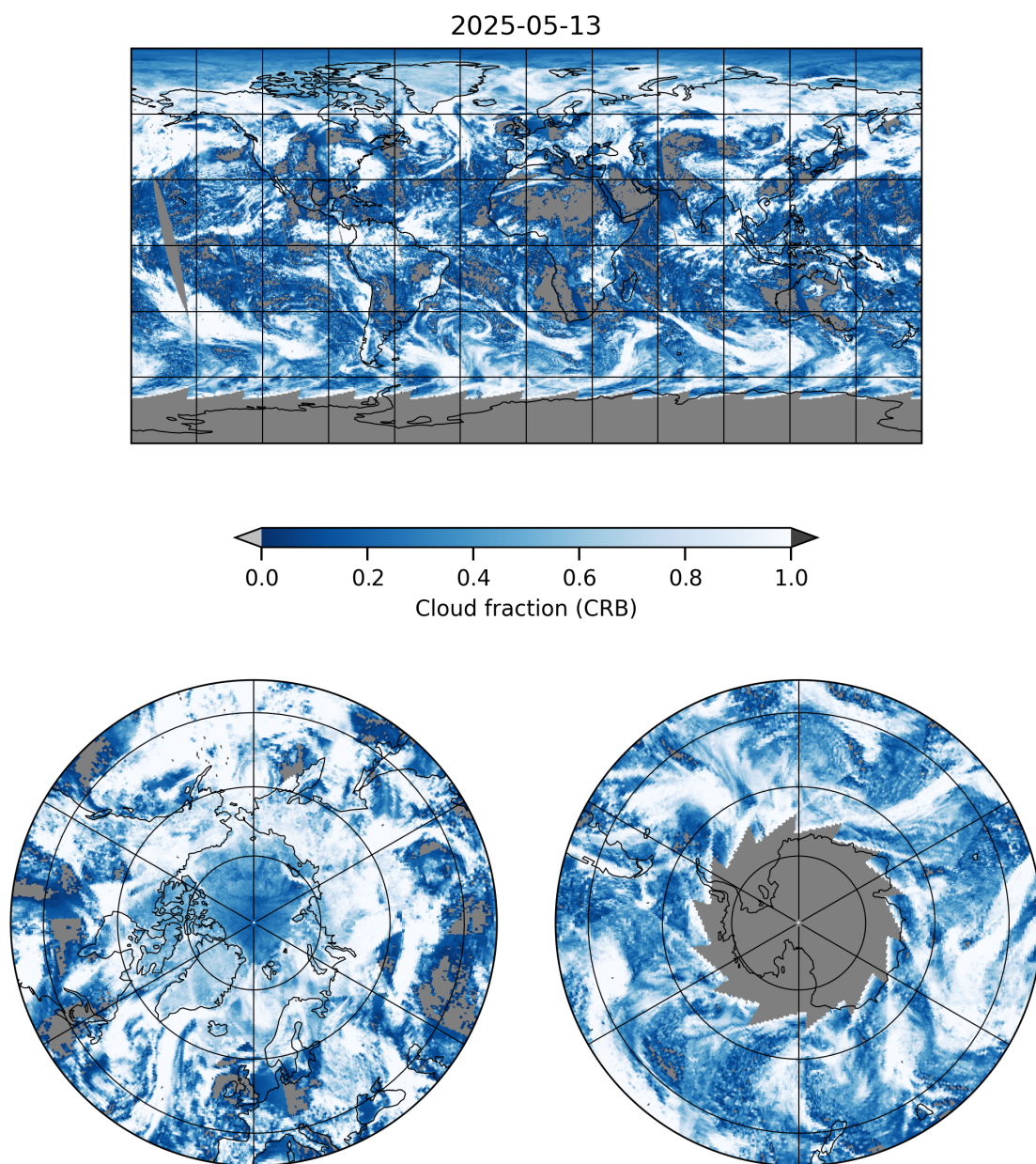


Figure 7: Map of “Cloud fraction (CRB)” for 2025-05-13 to 2025-05-13

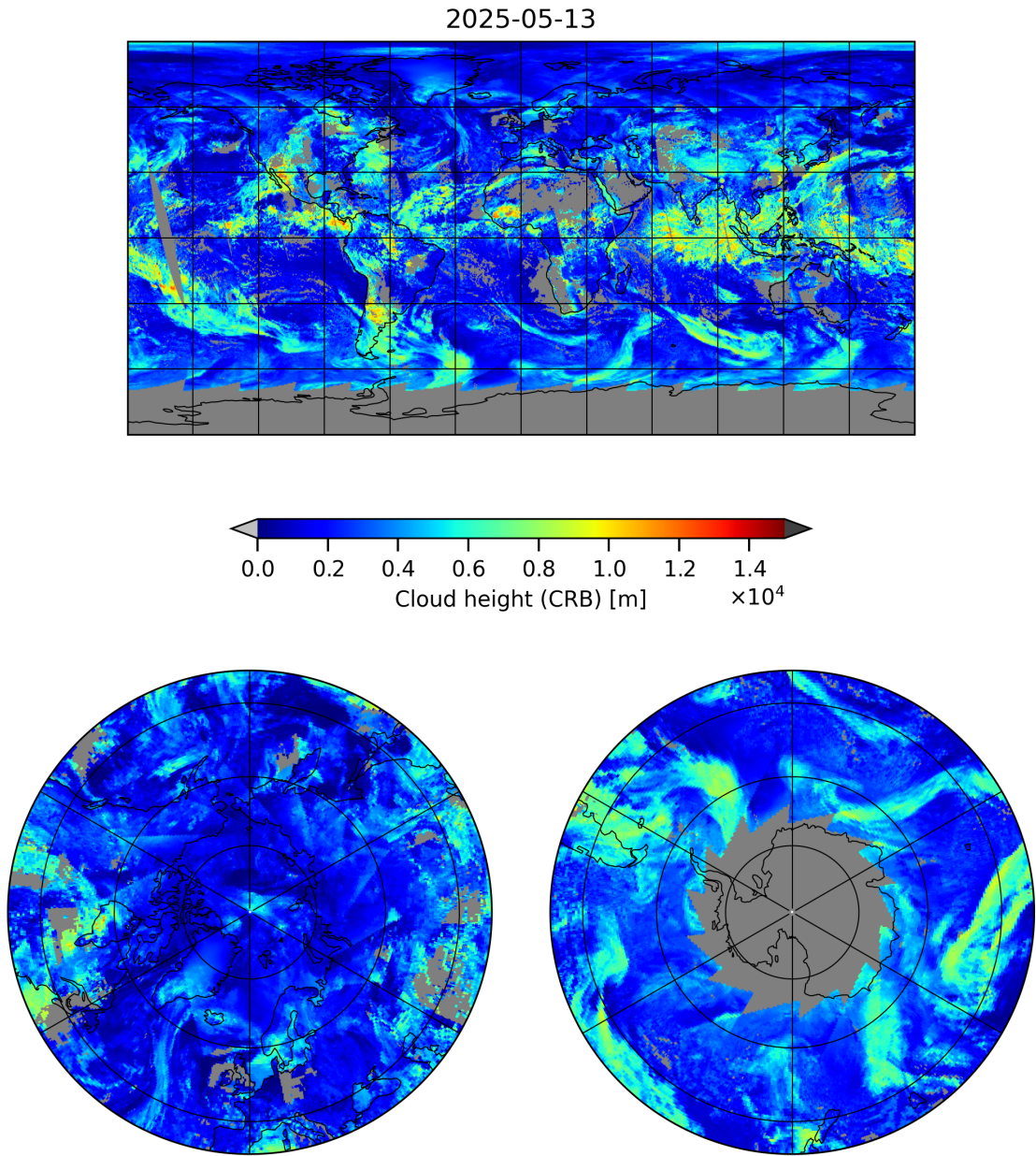


Figure 8: Map of “Cloud height (CRB)” for 2025-05-13 to 2025-05-13

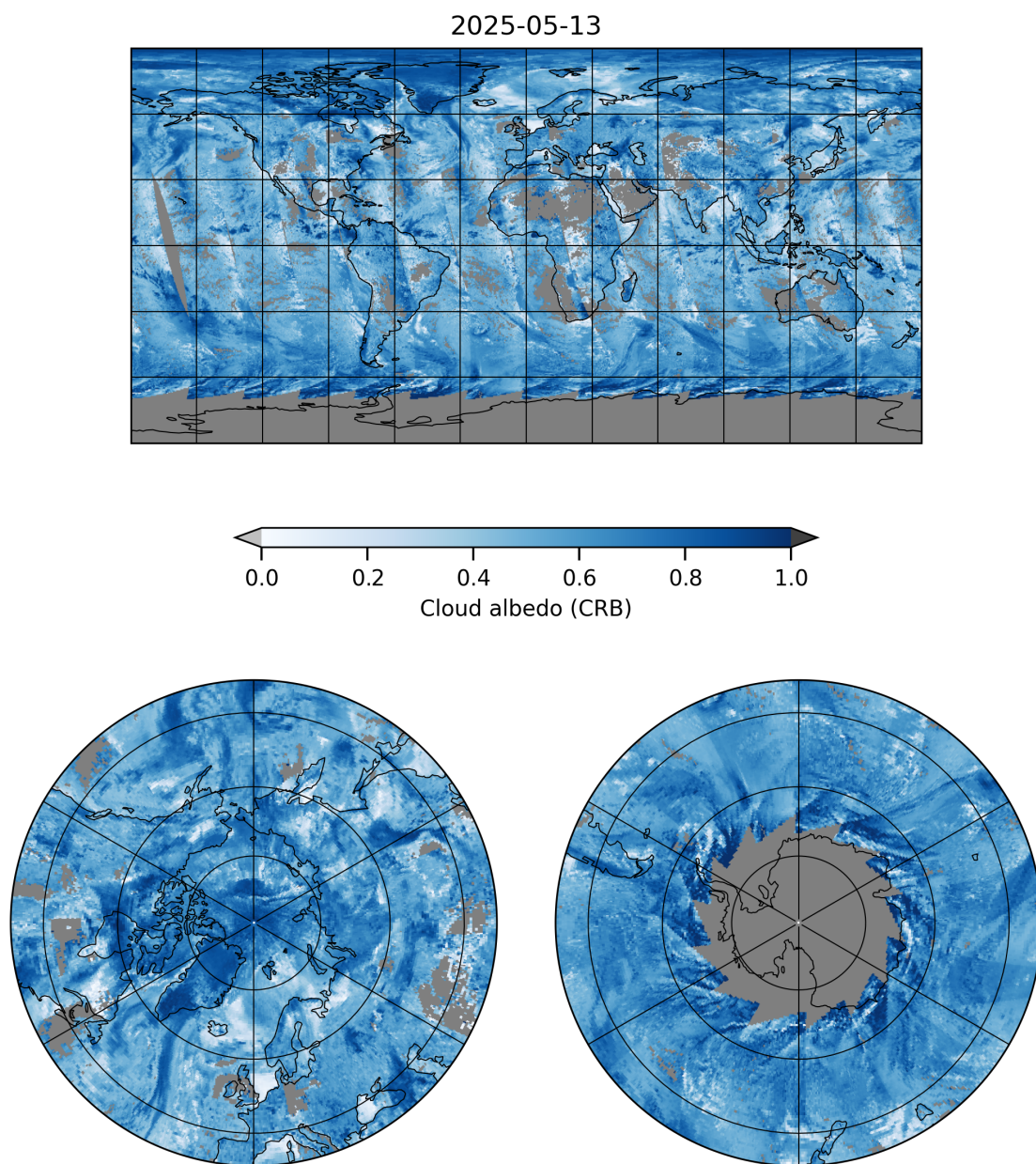


Figure 9: Map of “Cloud albedo (CRB)” for 2025-05-13 to 2025-05-13

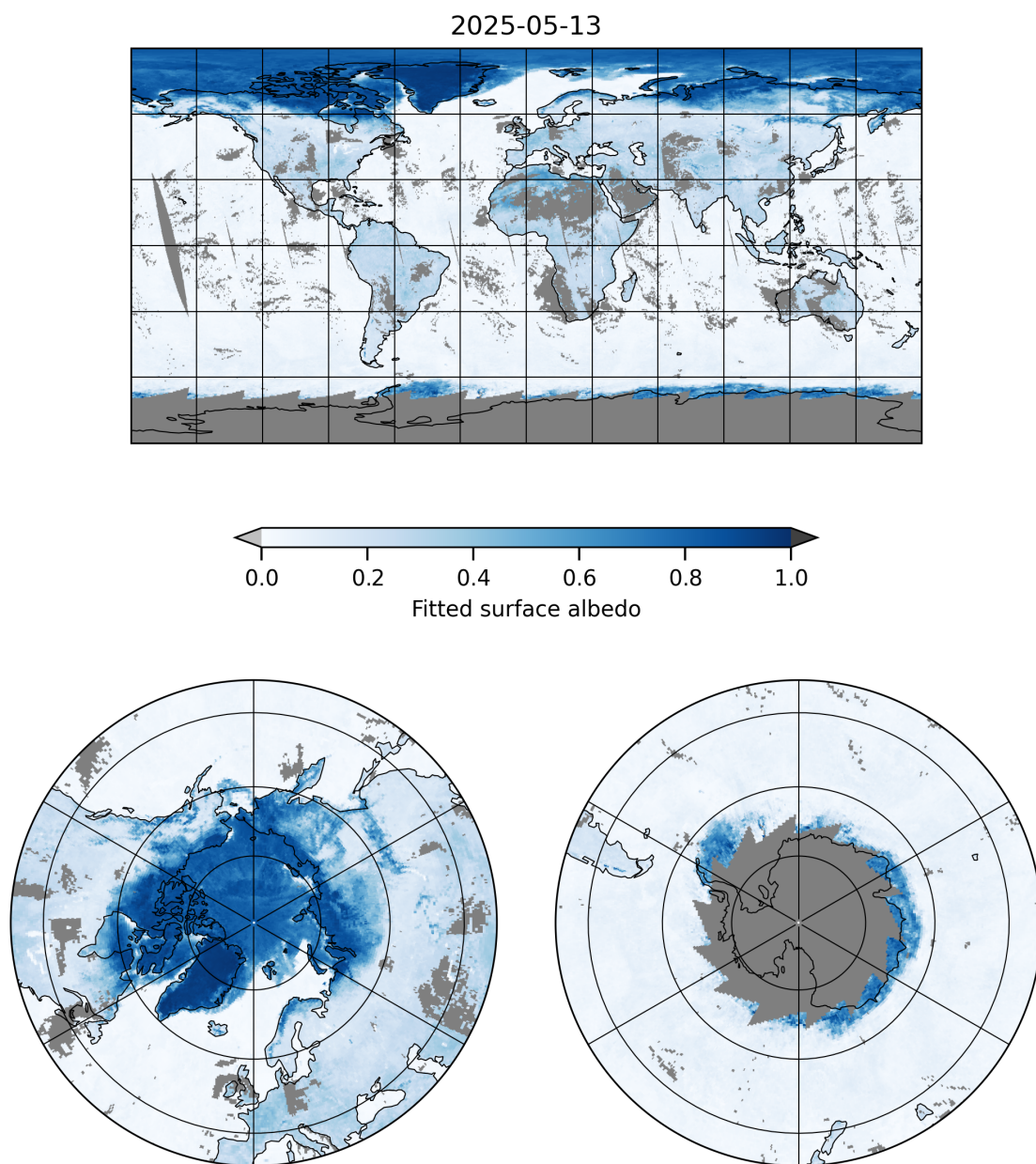


Figure 10: Map of “Fitted surface albedo” for 2025-05-13 to 2025-05-13

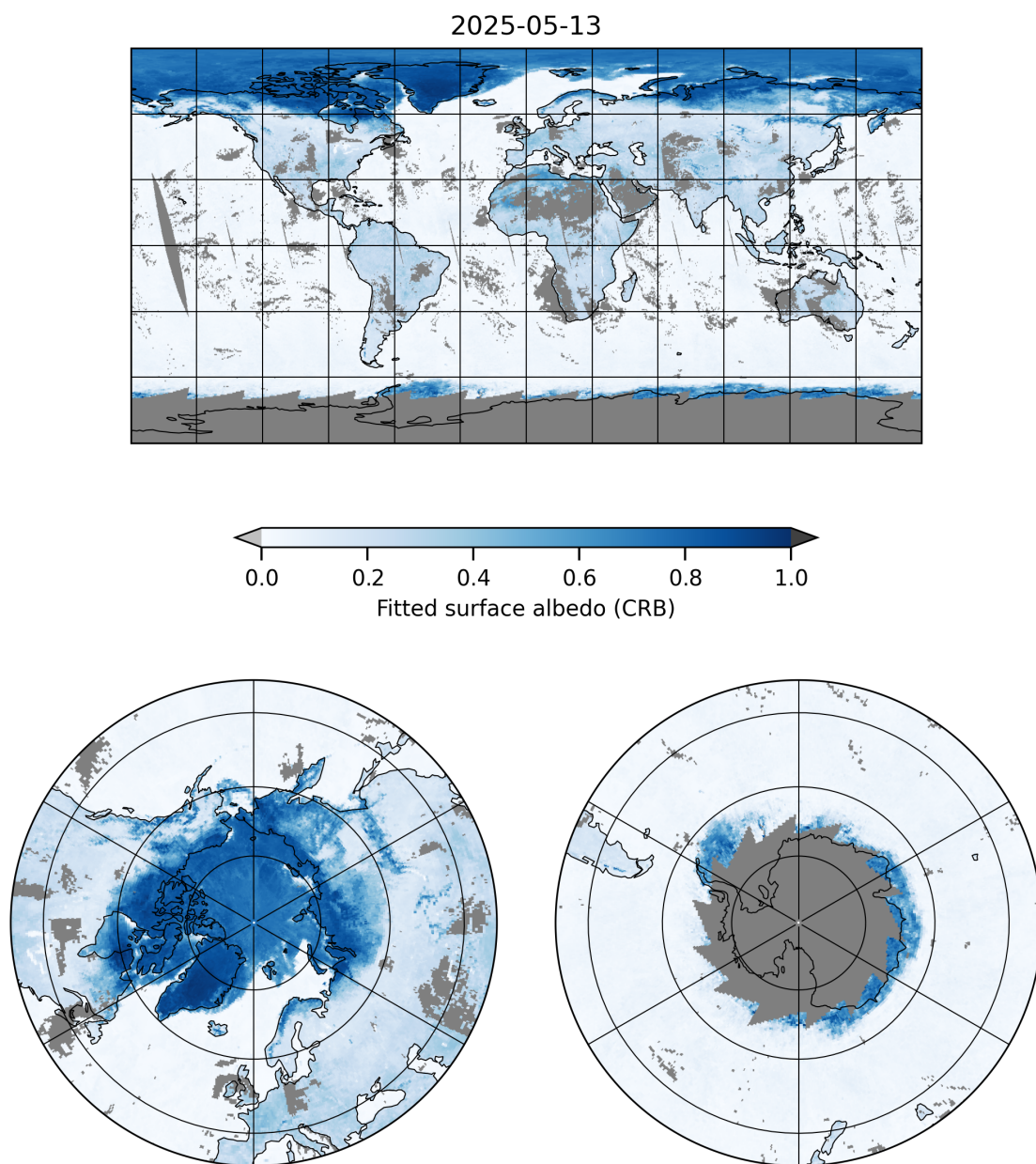


Figure 11: Map of “Fitted surface albedo (CRB)” for 2025-05-13 to 2025-05-13

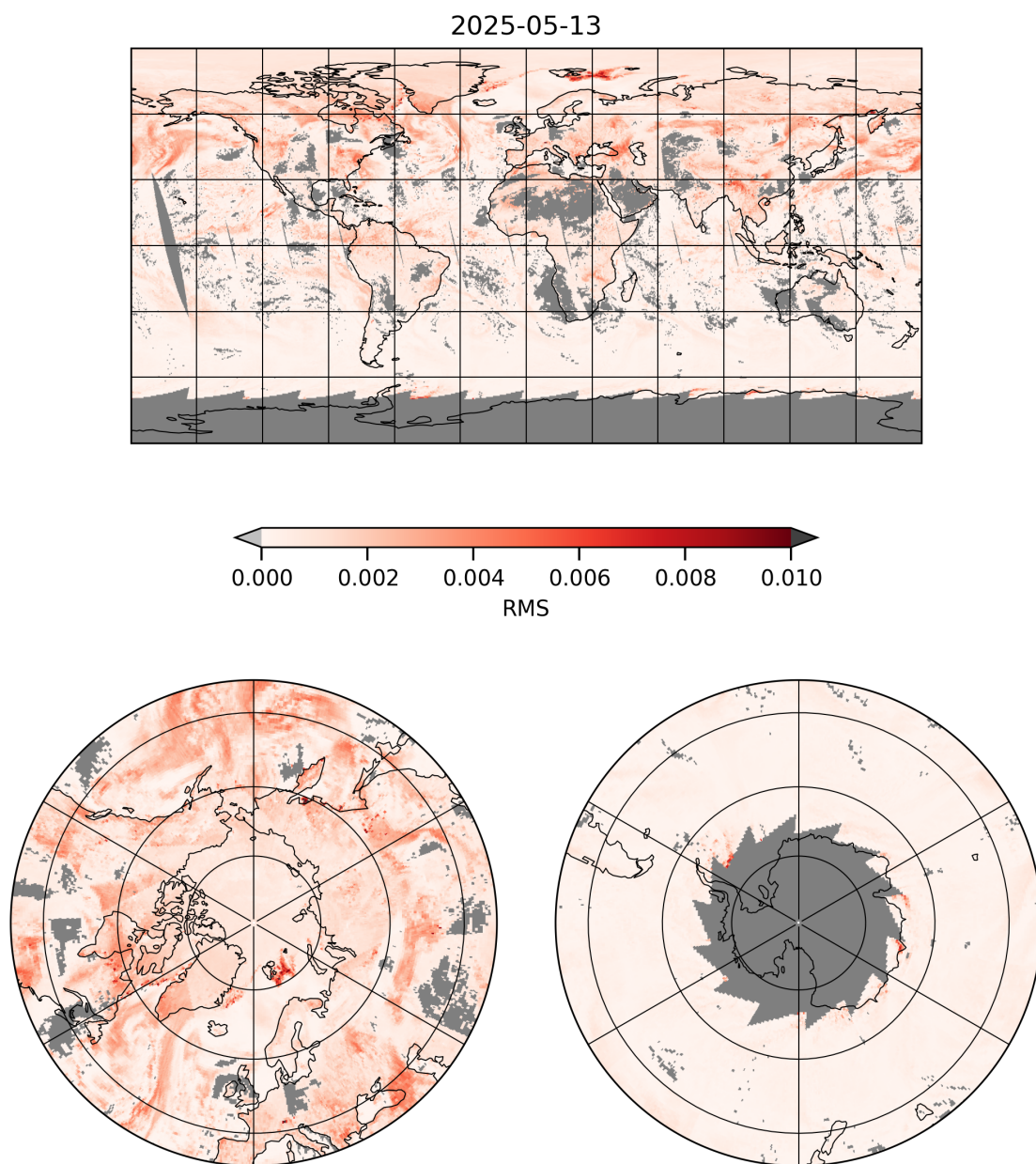


Figure 12: Map of “RMS” for 2025-05-13 to 2025-05-13

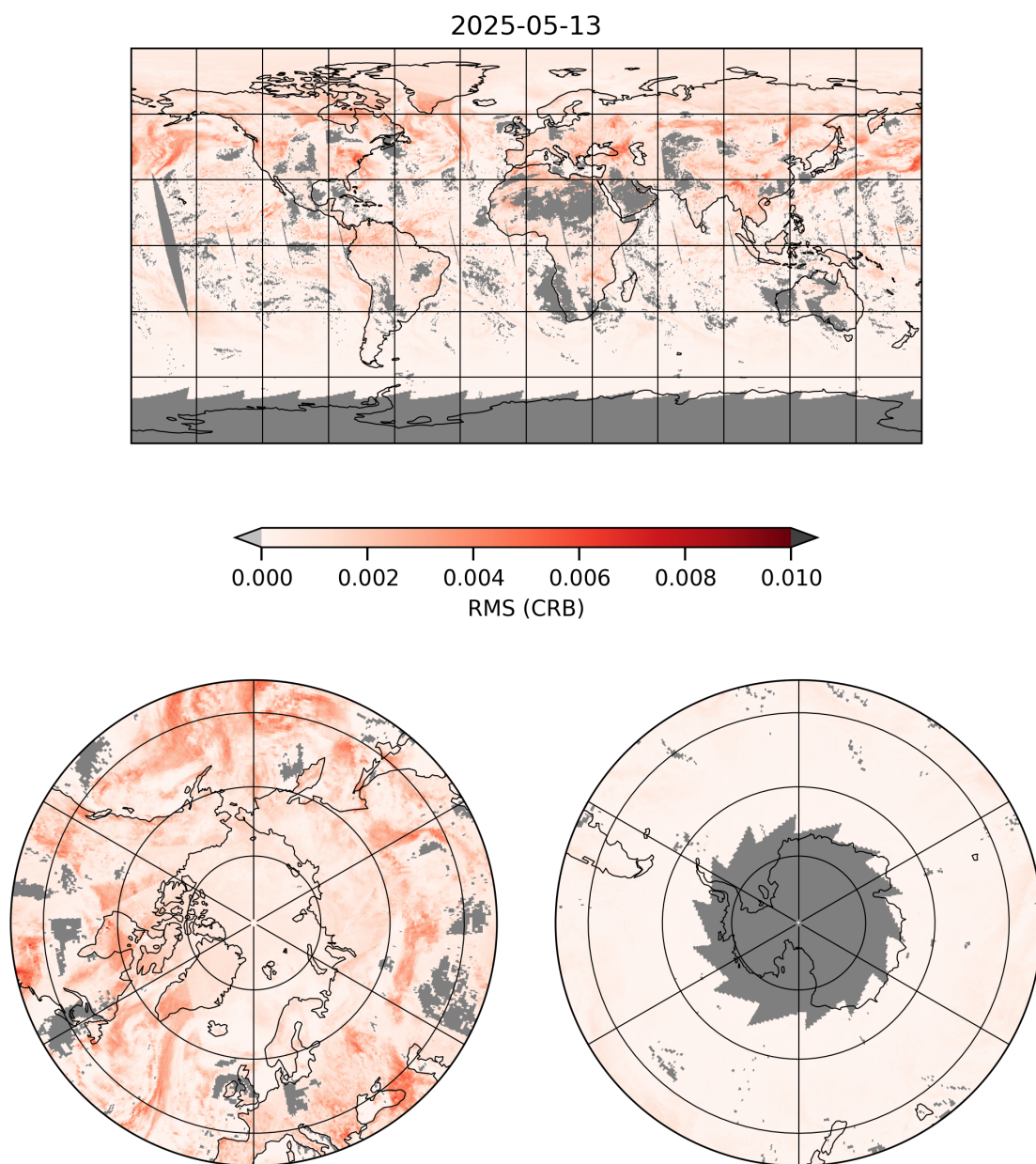


Figure 13: Map of “RMS (CRB)” for 2025-05-13 to 2025-05-13

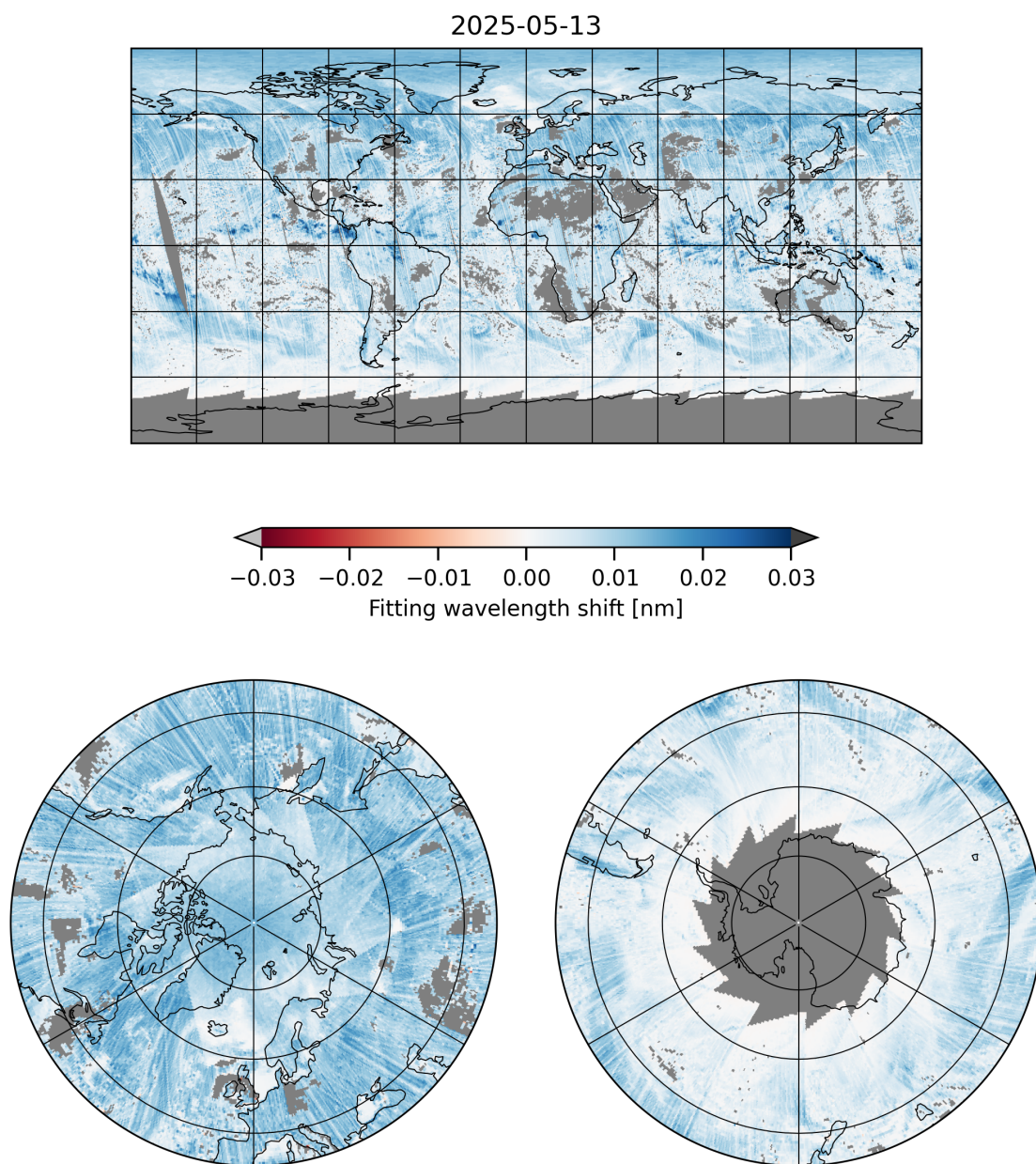


Figure 14: Map of “Fitting wavelength shift” for 2025-05-13 to 2025-05-13

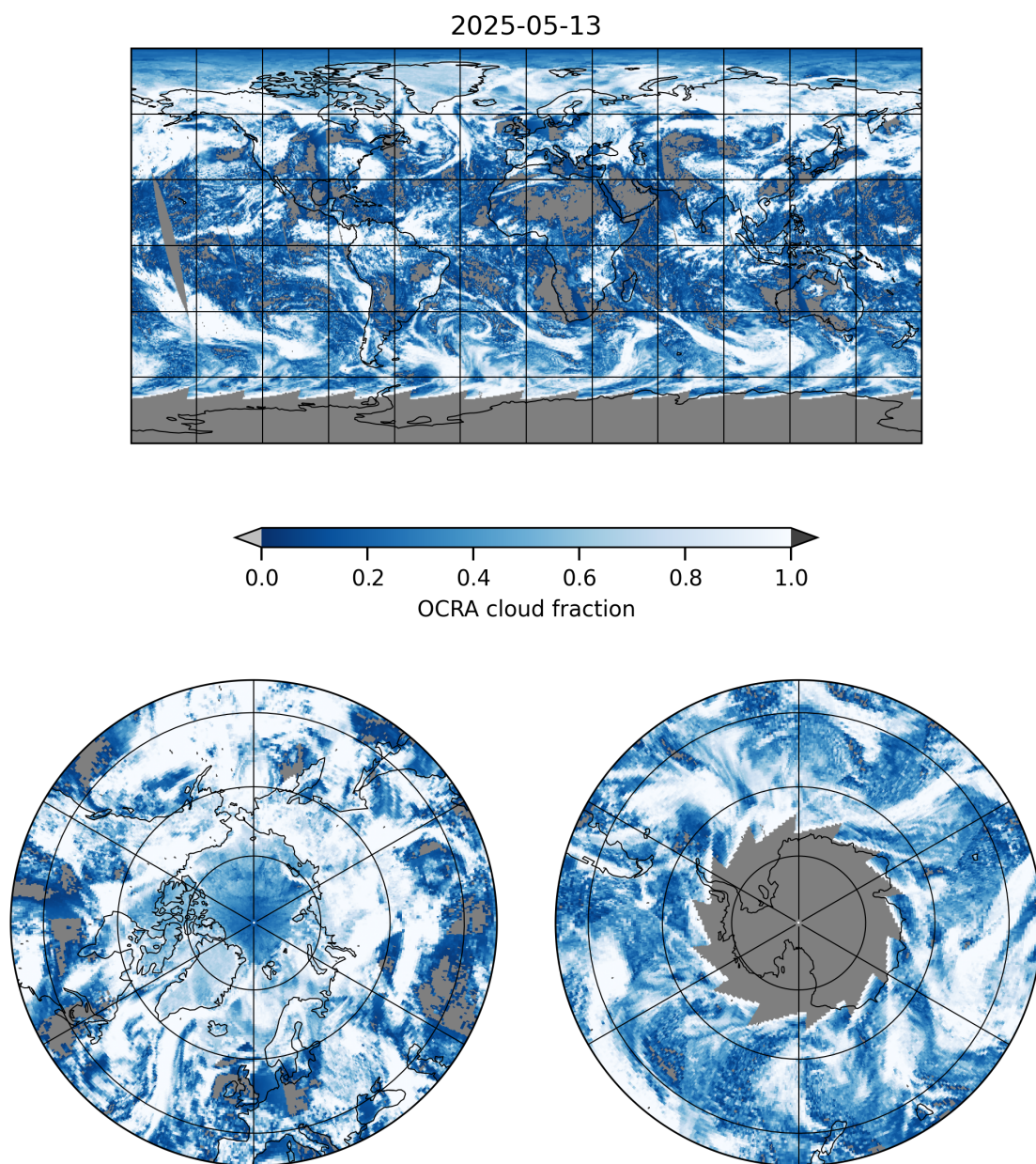


Figure 15: Map of “OCRA cloud fraction” for 2025-05-13 to 2025-05-13

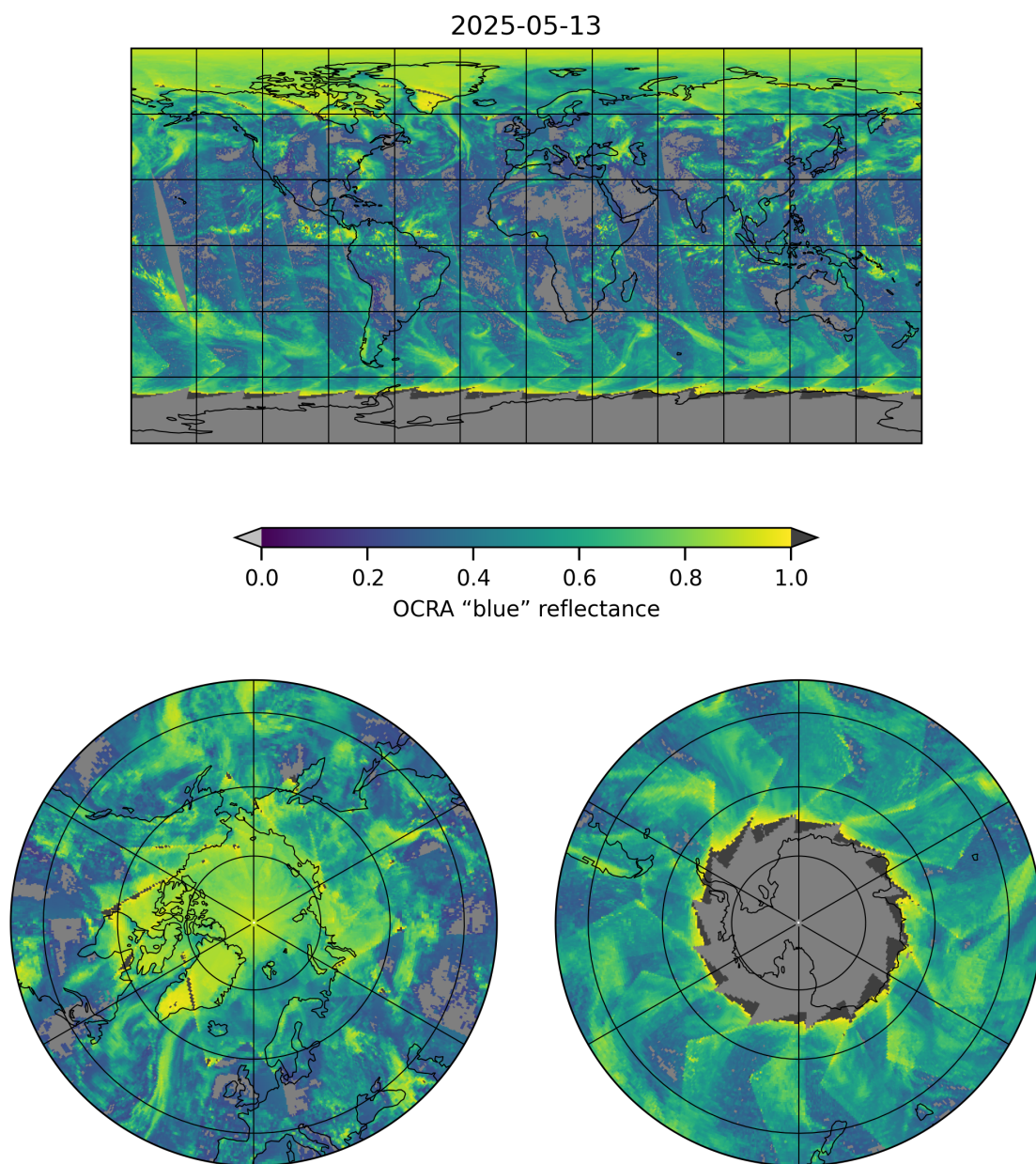


Figure 16: Map of "OCRA "blue" reflectance" for 2025-05-13 to 2025-05-13

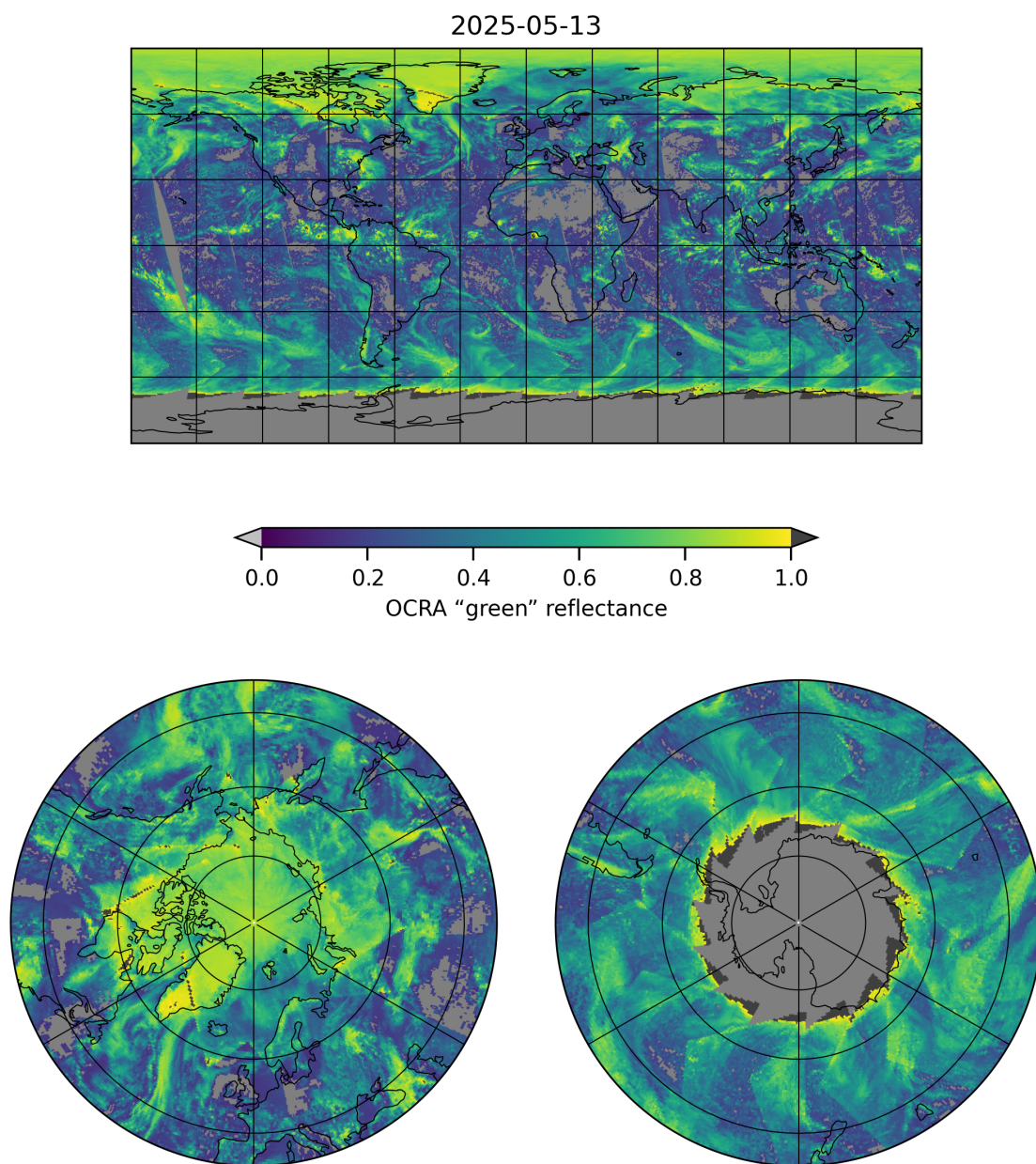


Figure 17: Map of "OCRA "green" reflectance" for 2025-05-13 to 2025-05-13

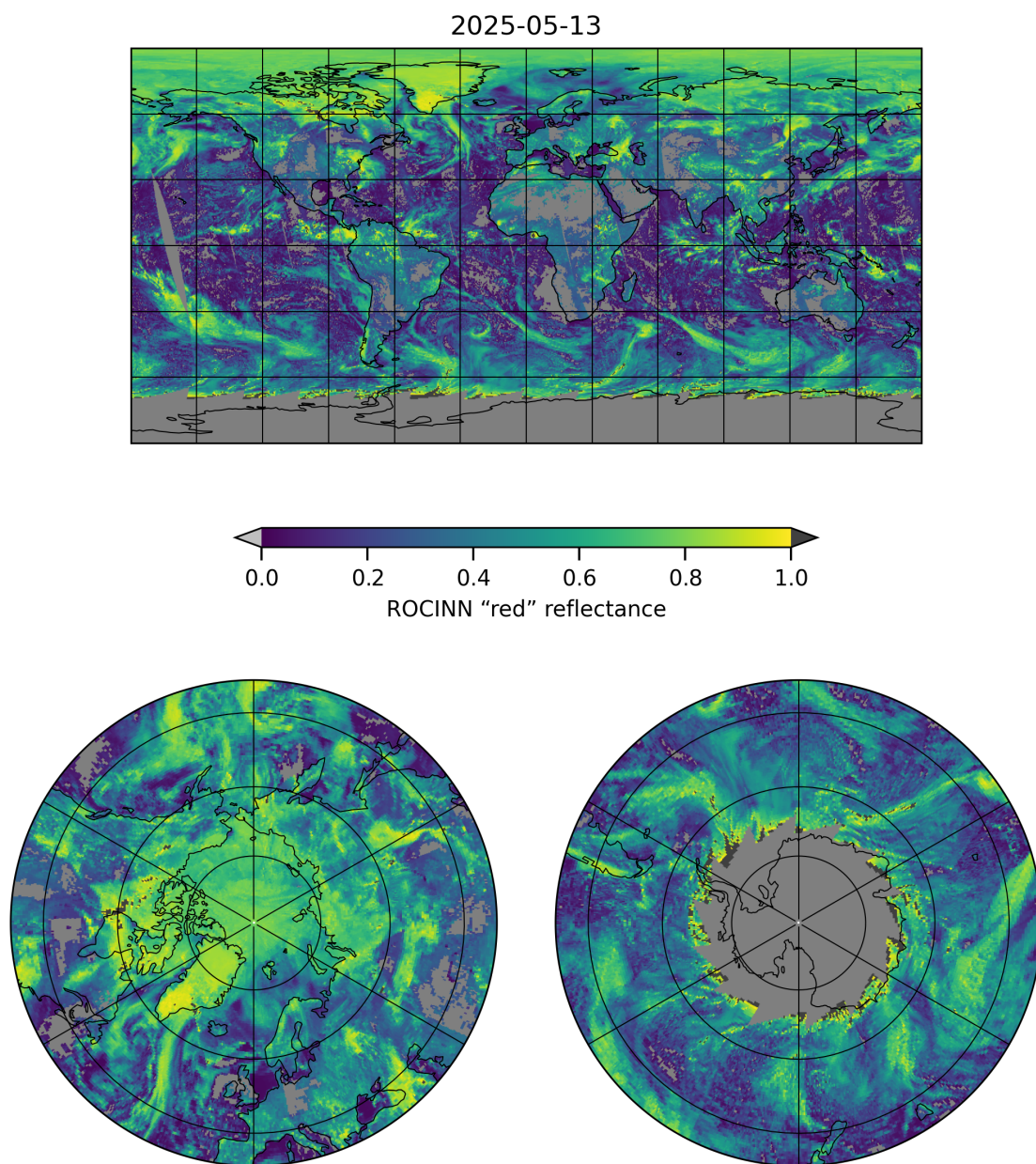


Figure 18: Map of "ROCINN "red" reflectance" for 2025-05-13 to 2025-05-13

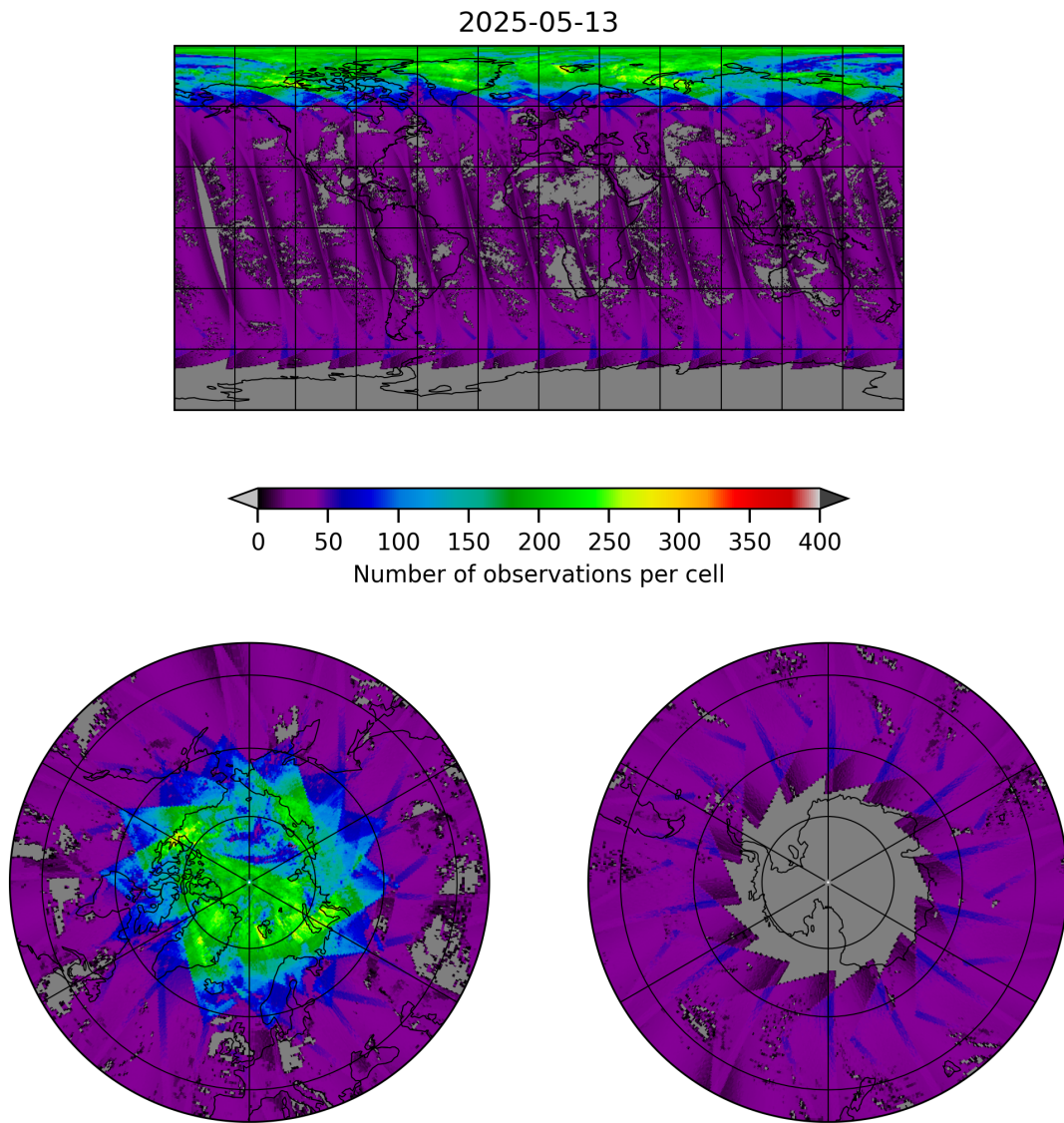


Figure 19: Map of the number of observations for 2025-05-13 to 2025-05-13

7 Zonal average

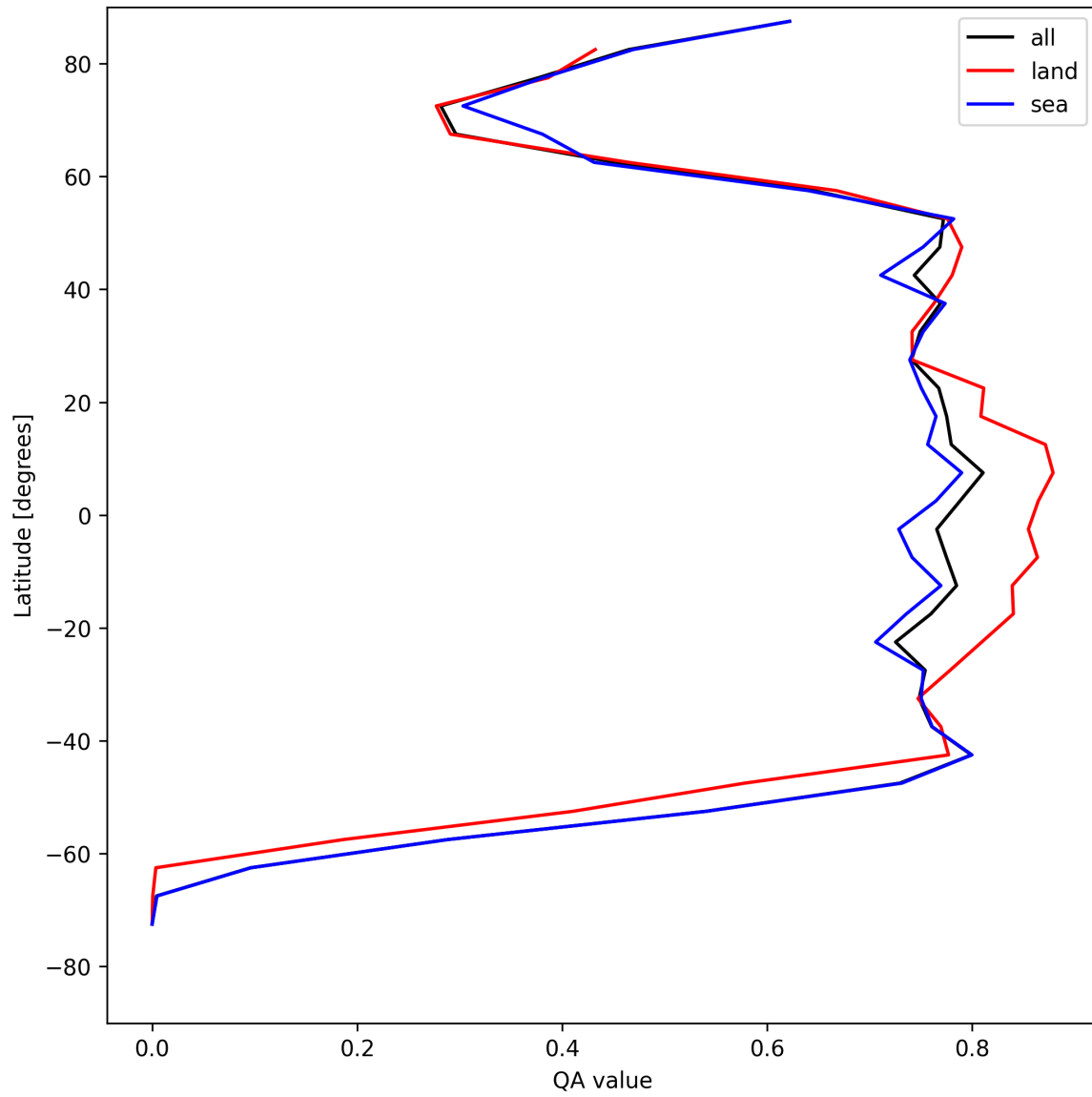


Figure 20: Zonal average of “QA value” for 2025-05-13 to 2025-05-13.

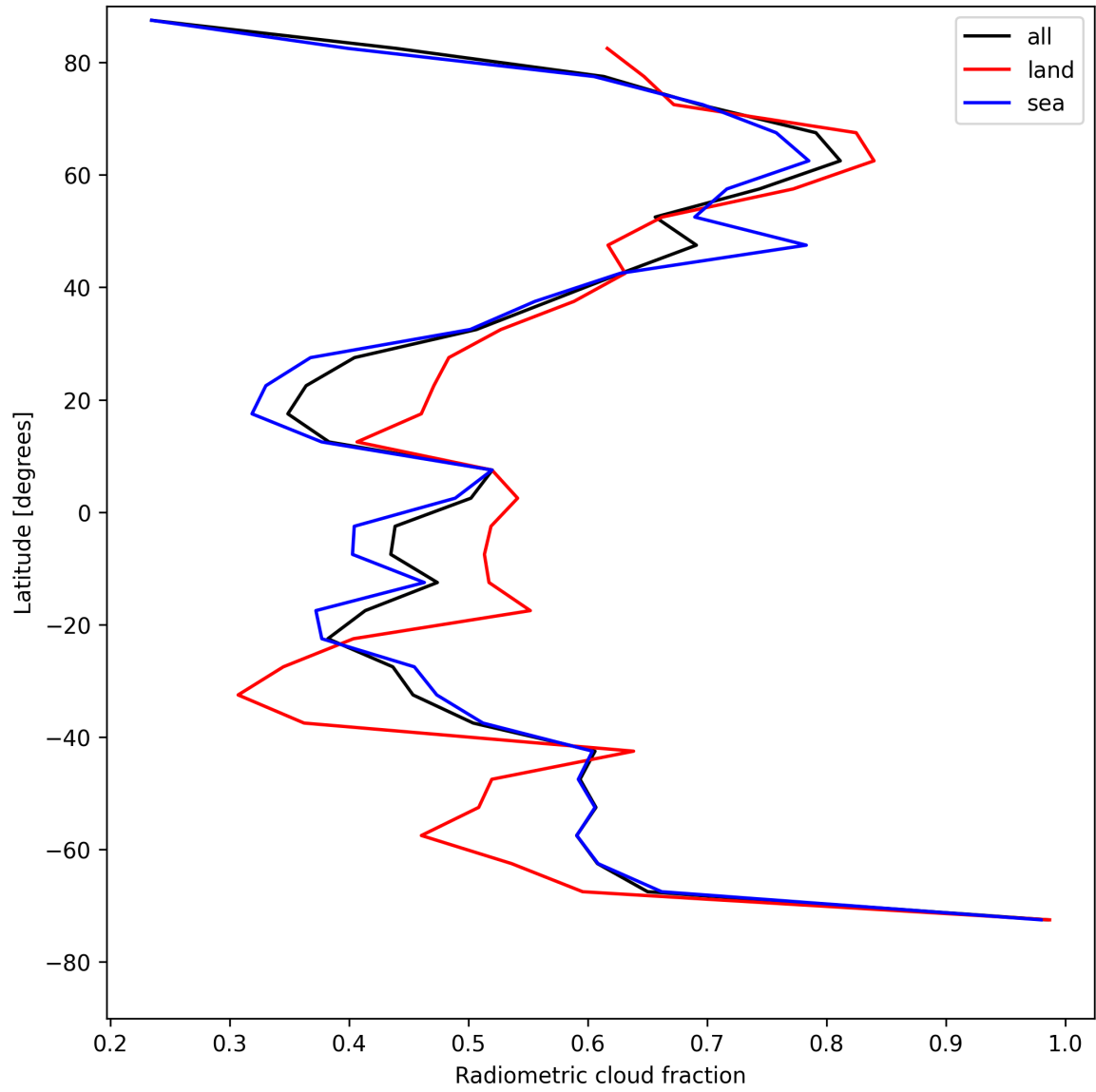


Figure 21: Zonal average of “Radiometric cloud fraction” for 2025-05-13 to 2025-05-13.

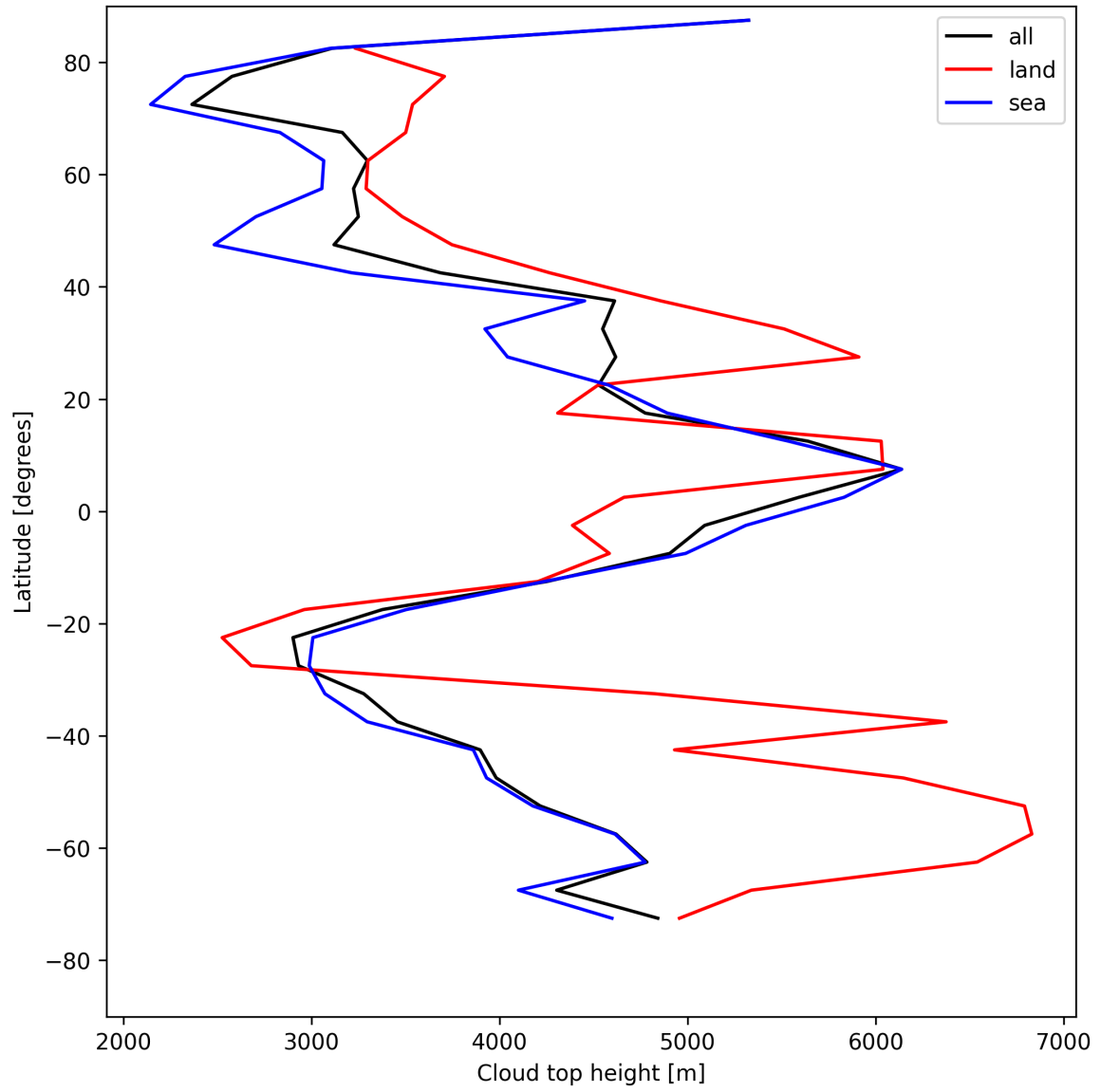


Figure 22: Zonal average of “Cloud top height” for 2025-05-13 to 2025-05-13.

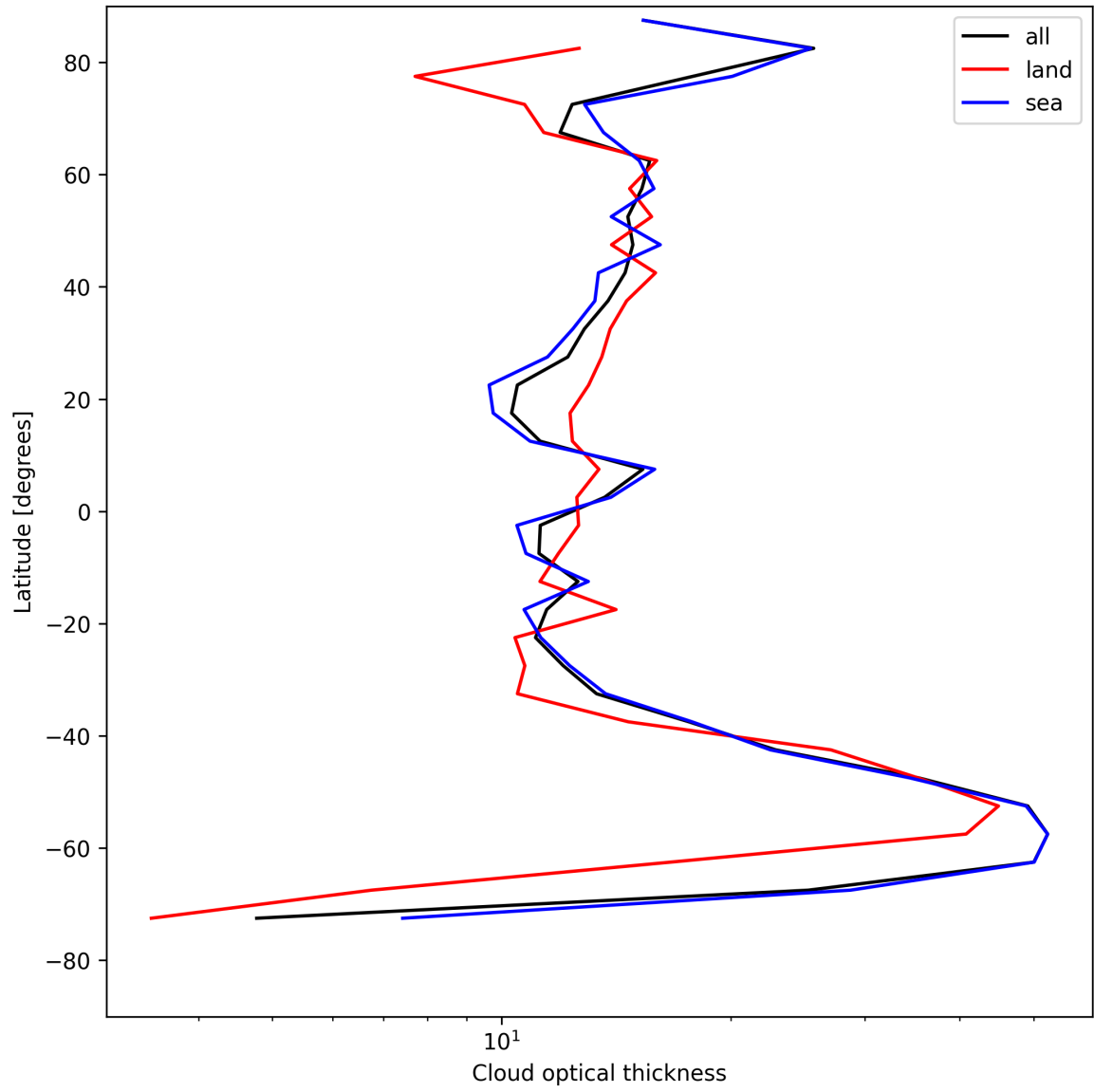


Figure 23: Zonal average of “Cloud optical thickness” for 2025-05-13 to 2025-05-13.

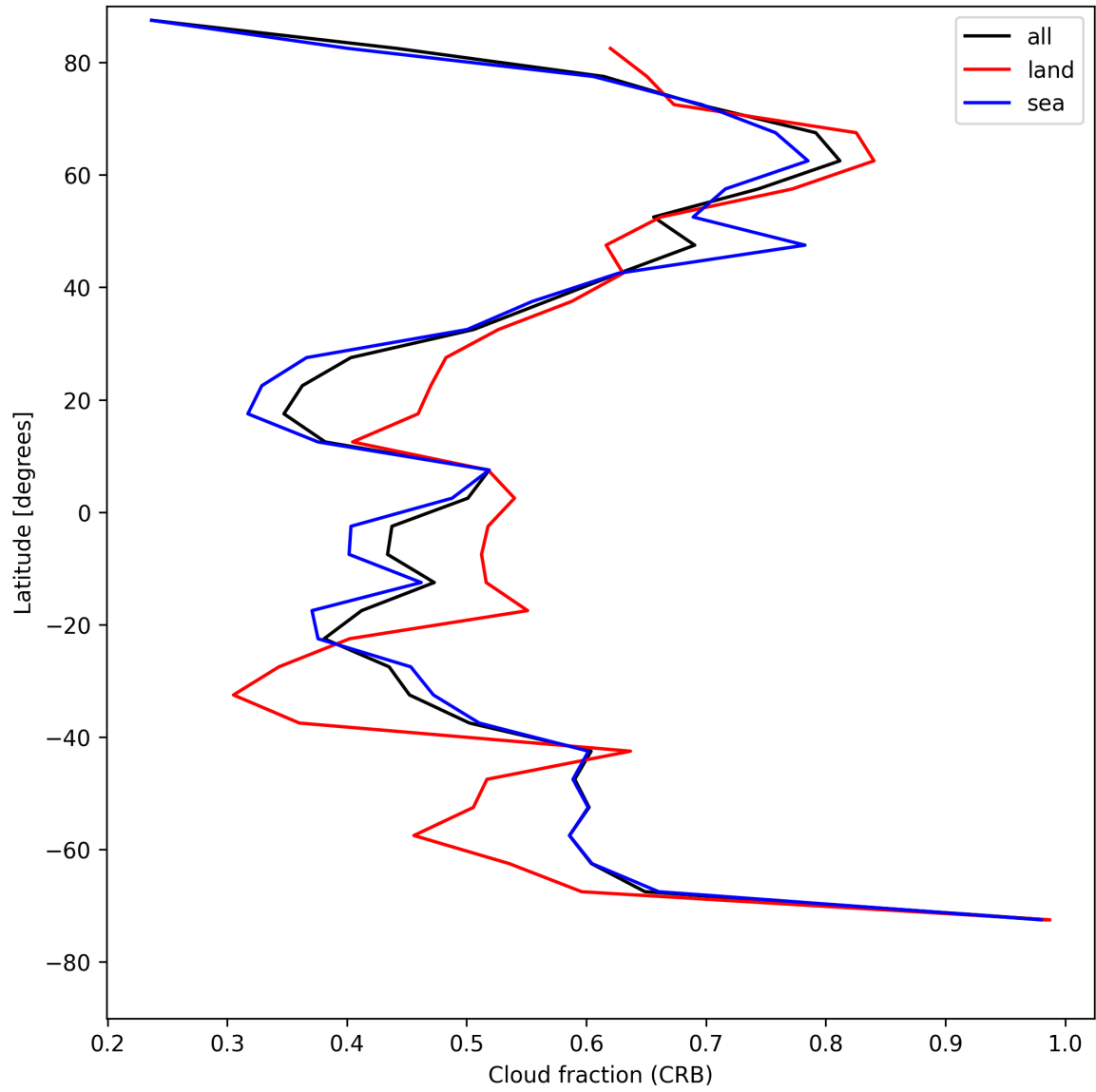


Figure 24: Zonal average of “Cloud fraction (CRB)” for 2025-05-13 to 2025-05-13.

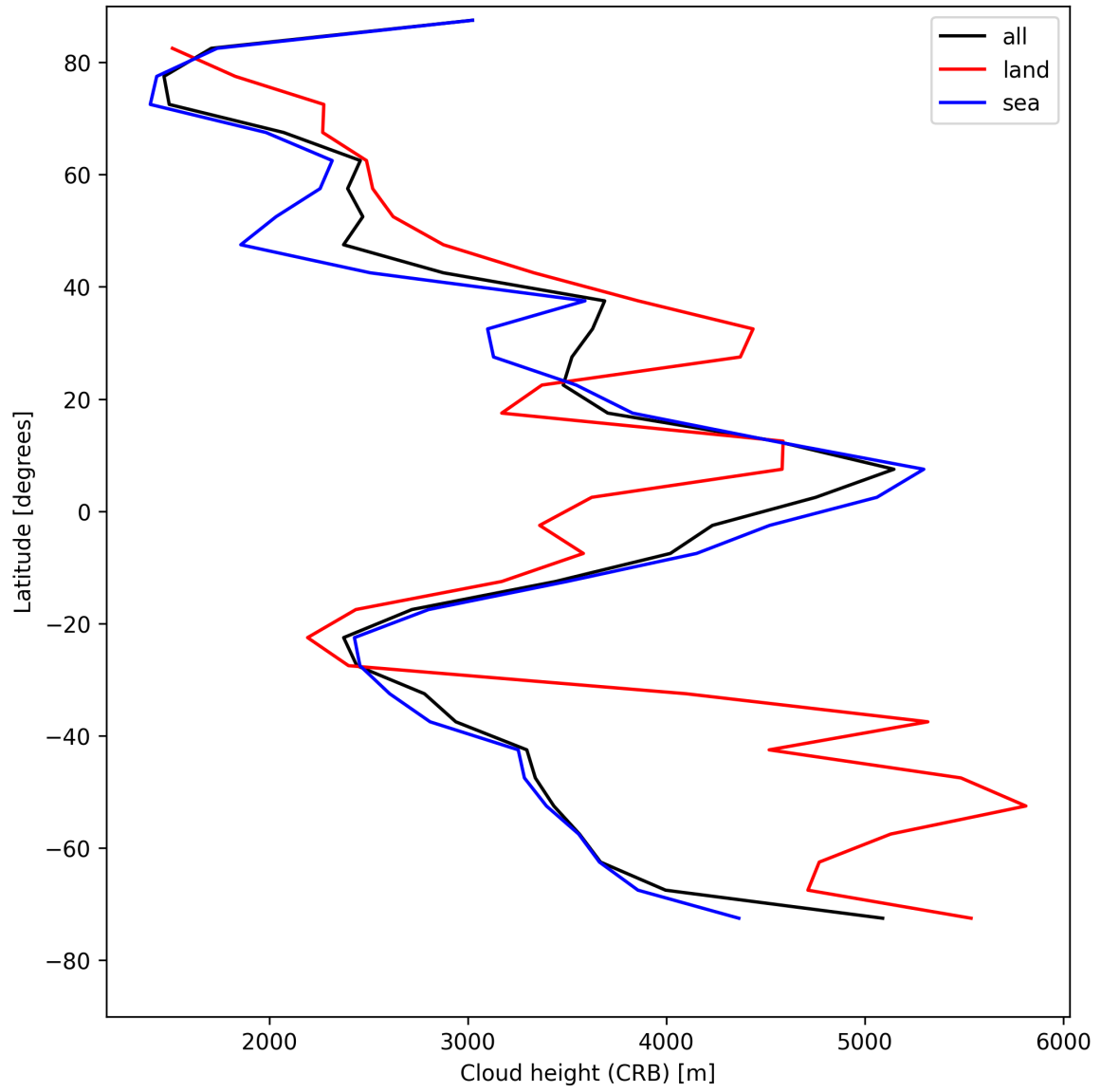


Figure 25: Zonal average of “Cloud height (CRB)” for 2025-05-13 to 2025-05-13.

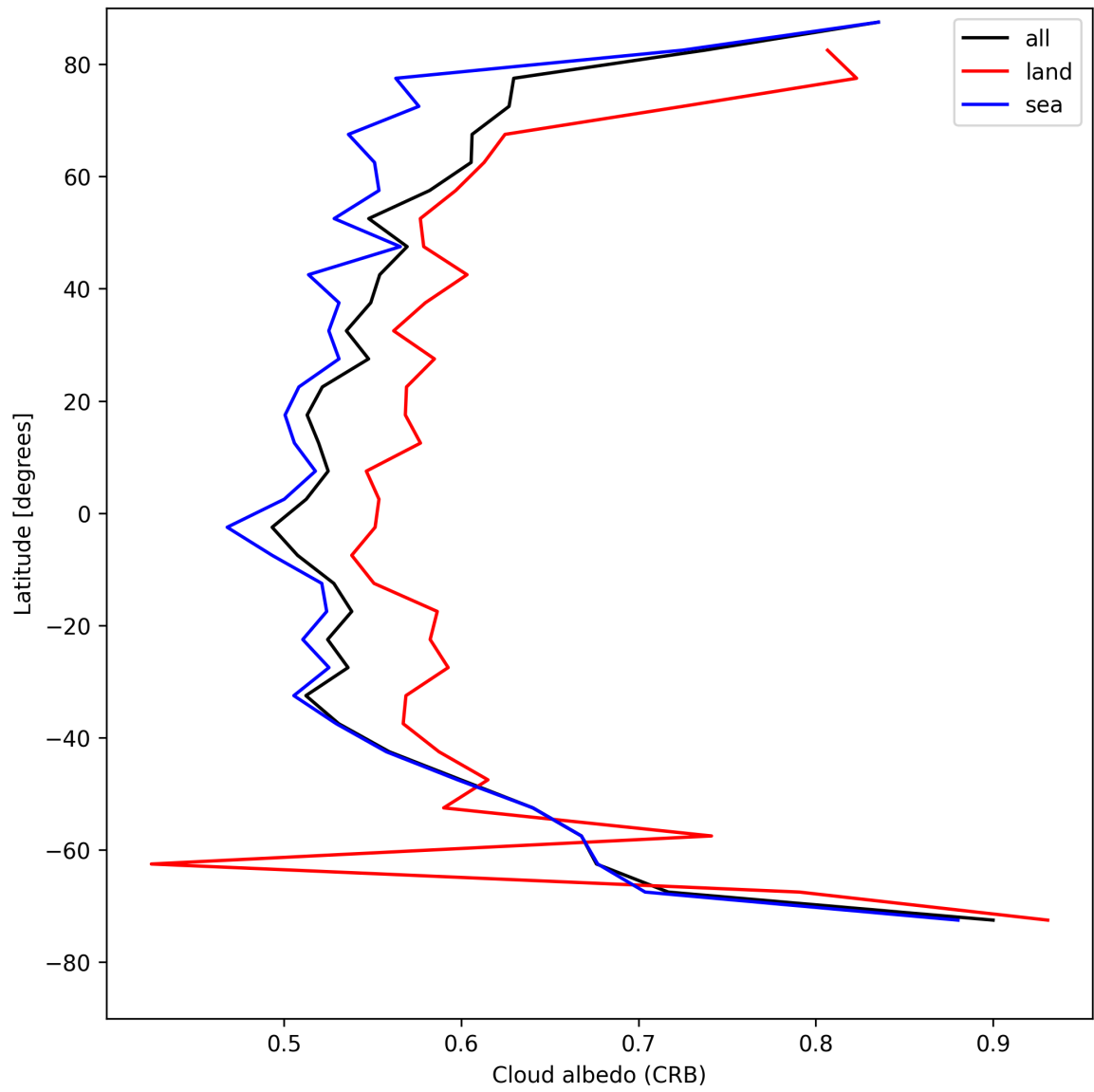


Figure 26: Zonal average of “Cloud albedo (CRB)” for 2025-05-13 to 2025-05-13.

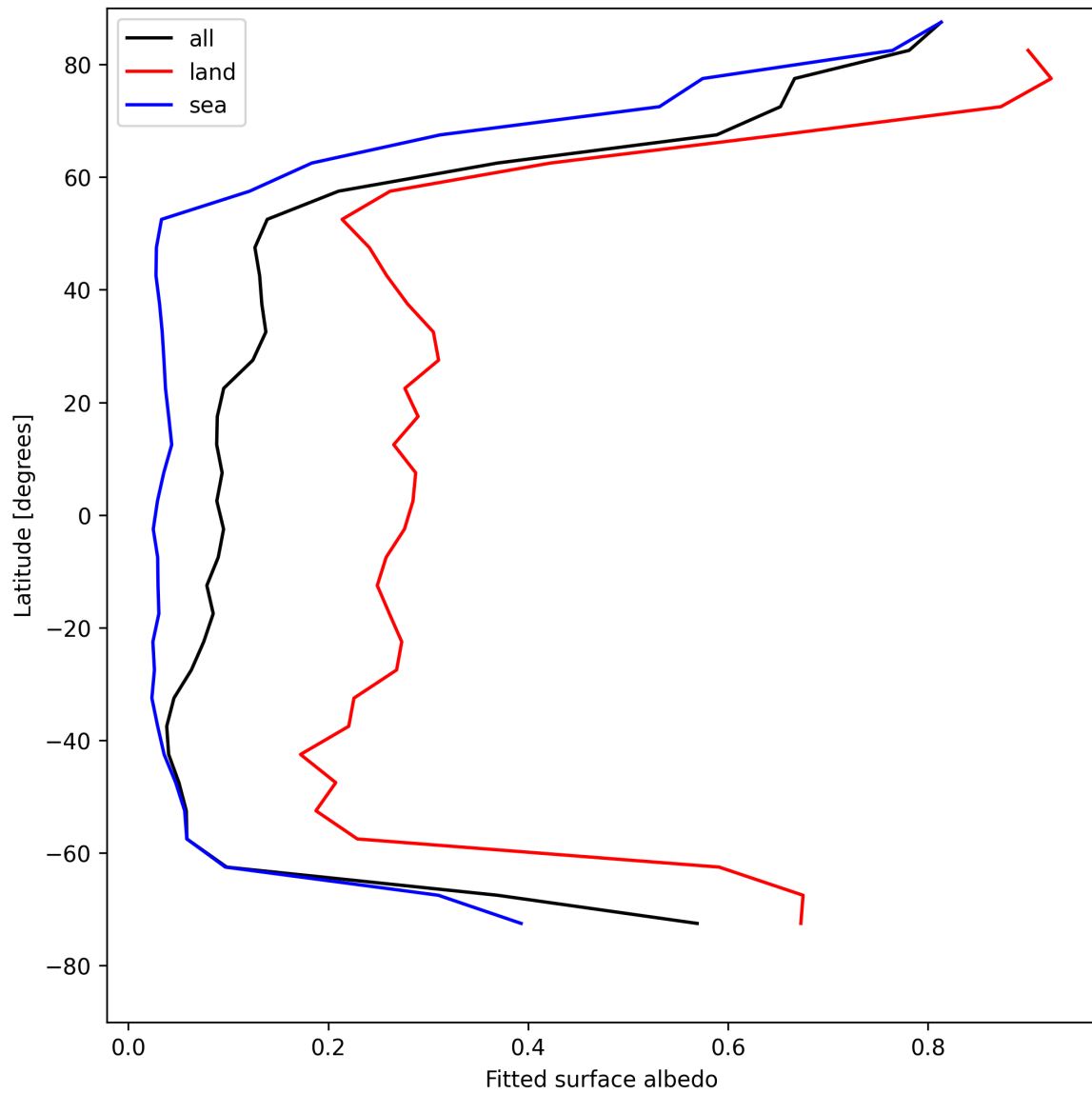


Figure 27: Zonal average of “Fitted surface albedo” for 2025-05-13 to 2025-05-13.

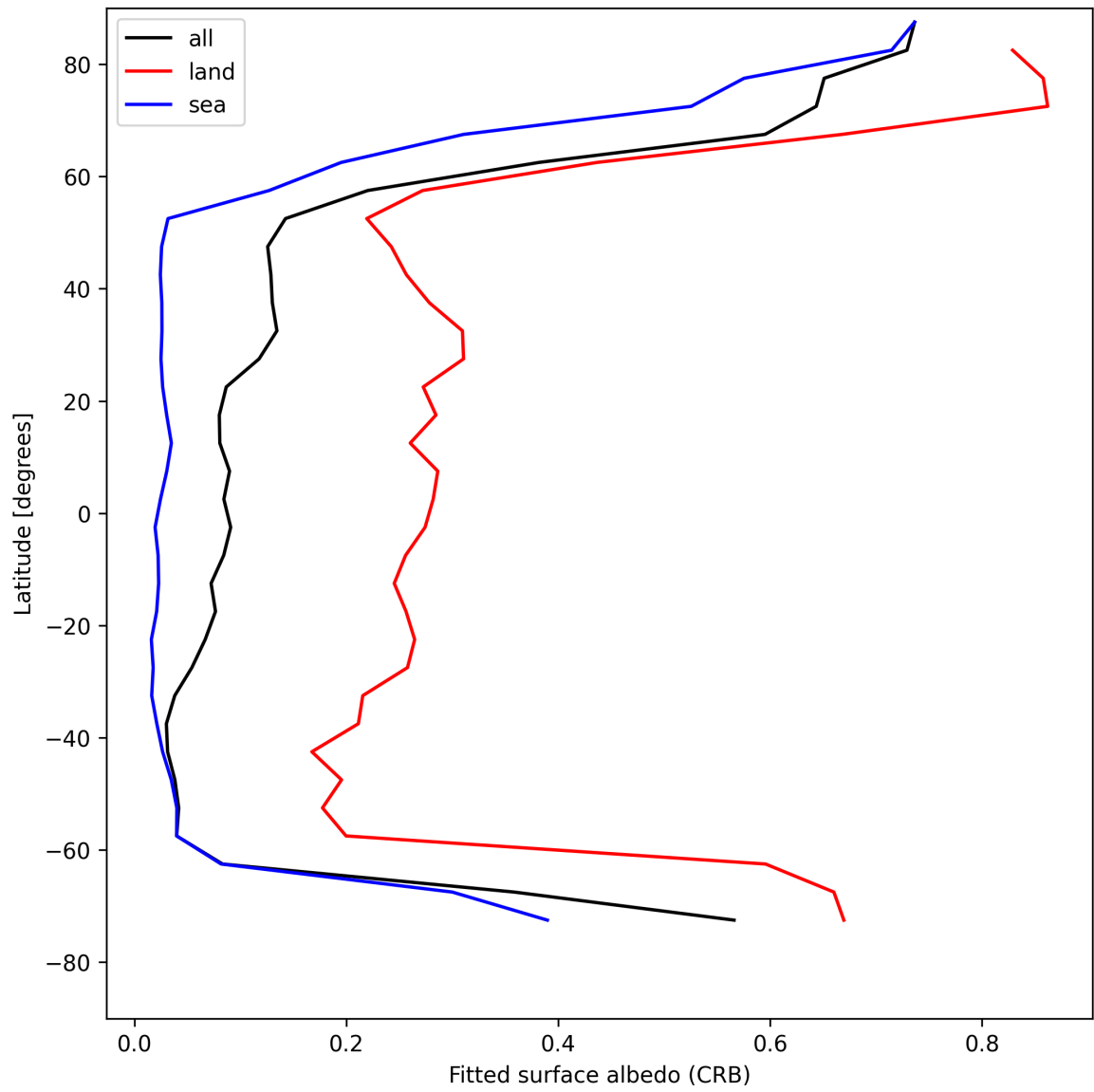


Figure 28: Zonal average of “Fitted surface albedo (CRB)” for 2025-05-13 to 2025-05-13.

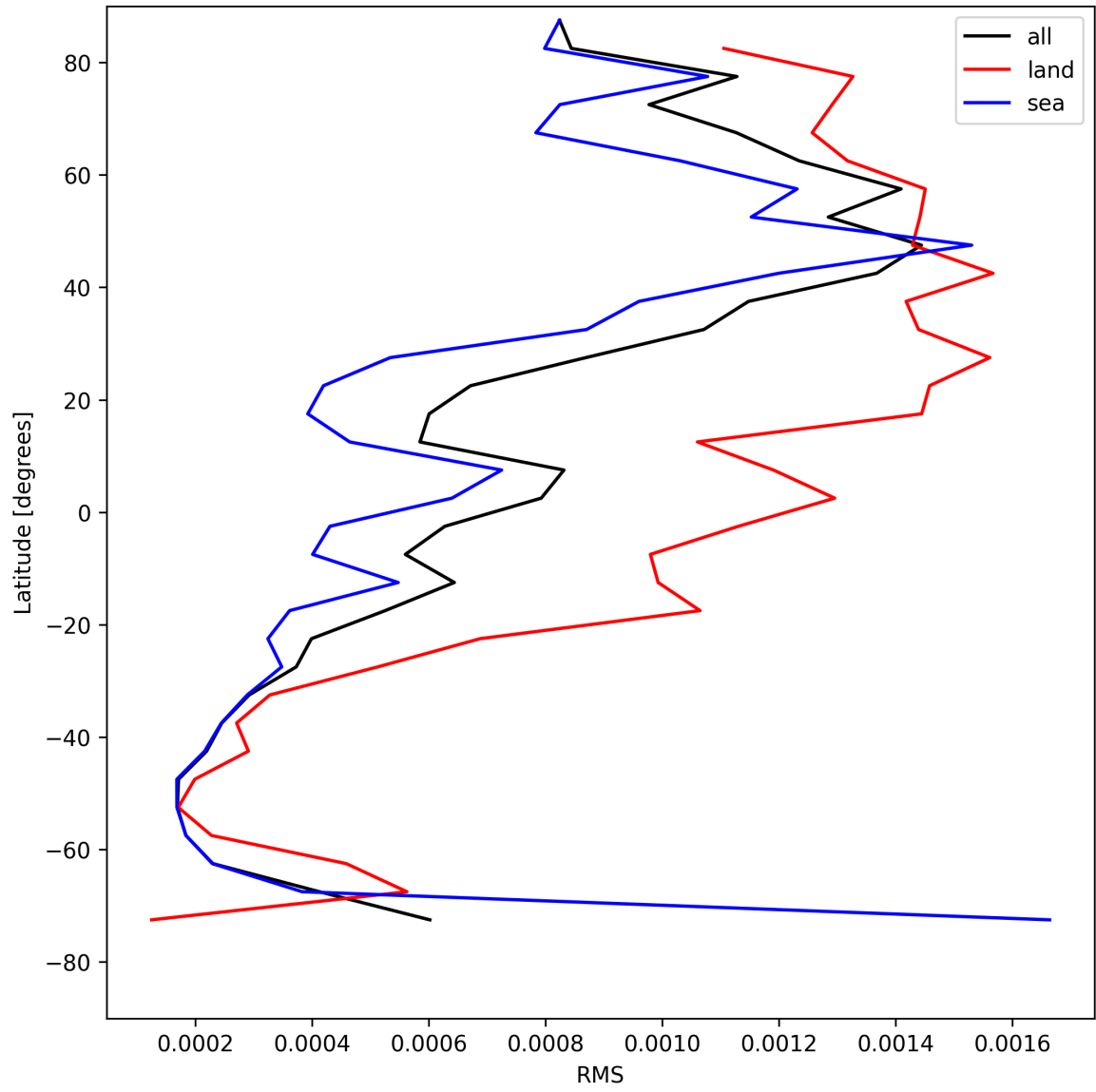


Figure 29: Zonal average of “RMS” for 2025-05-13 to 2025-05-13.

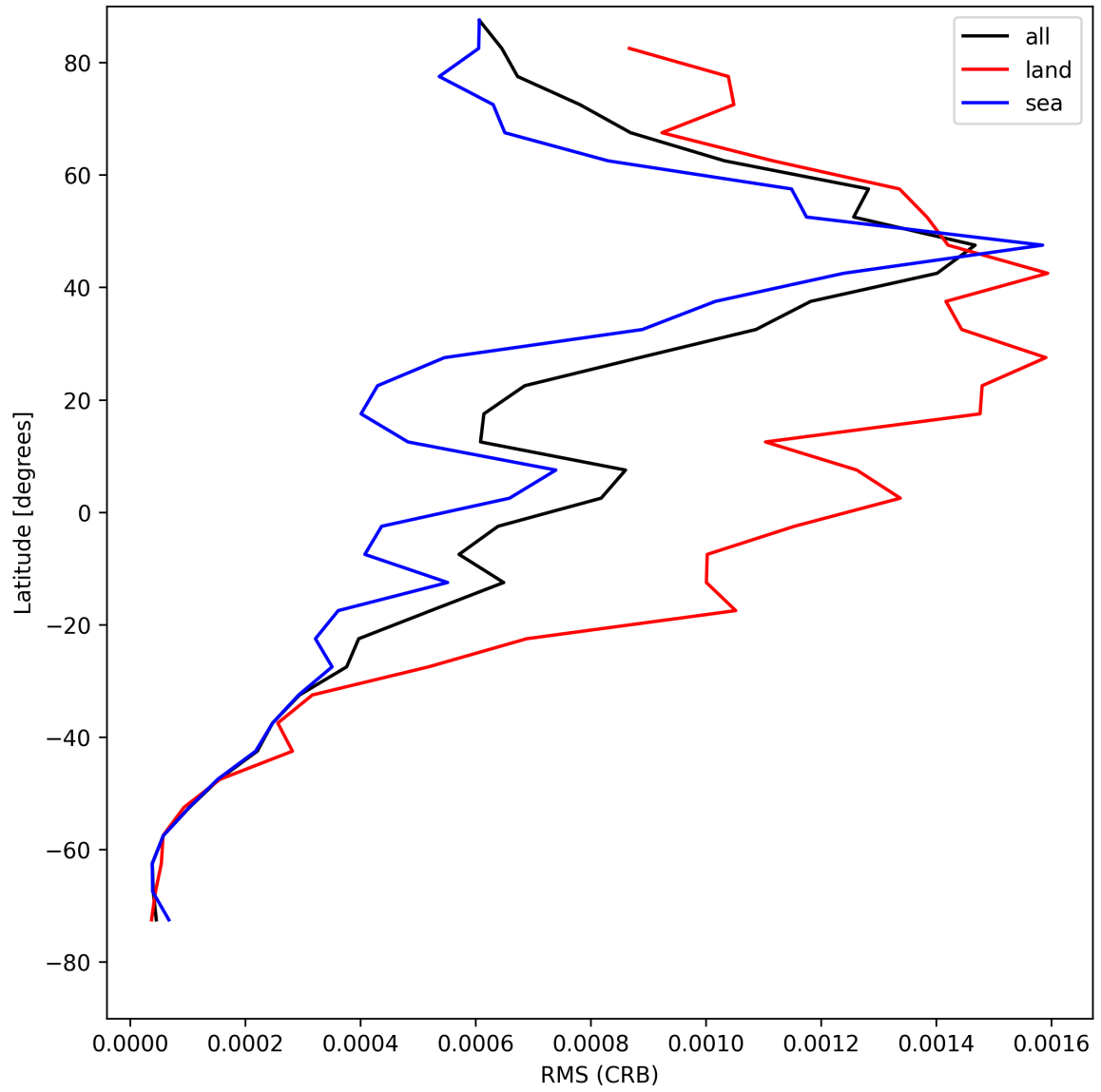


Figure 30: Zonal average of “RMS (CRB)” for 2025-05-13 to 2025-05-13.

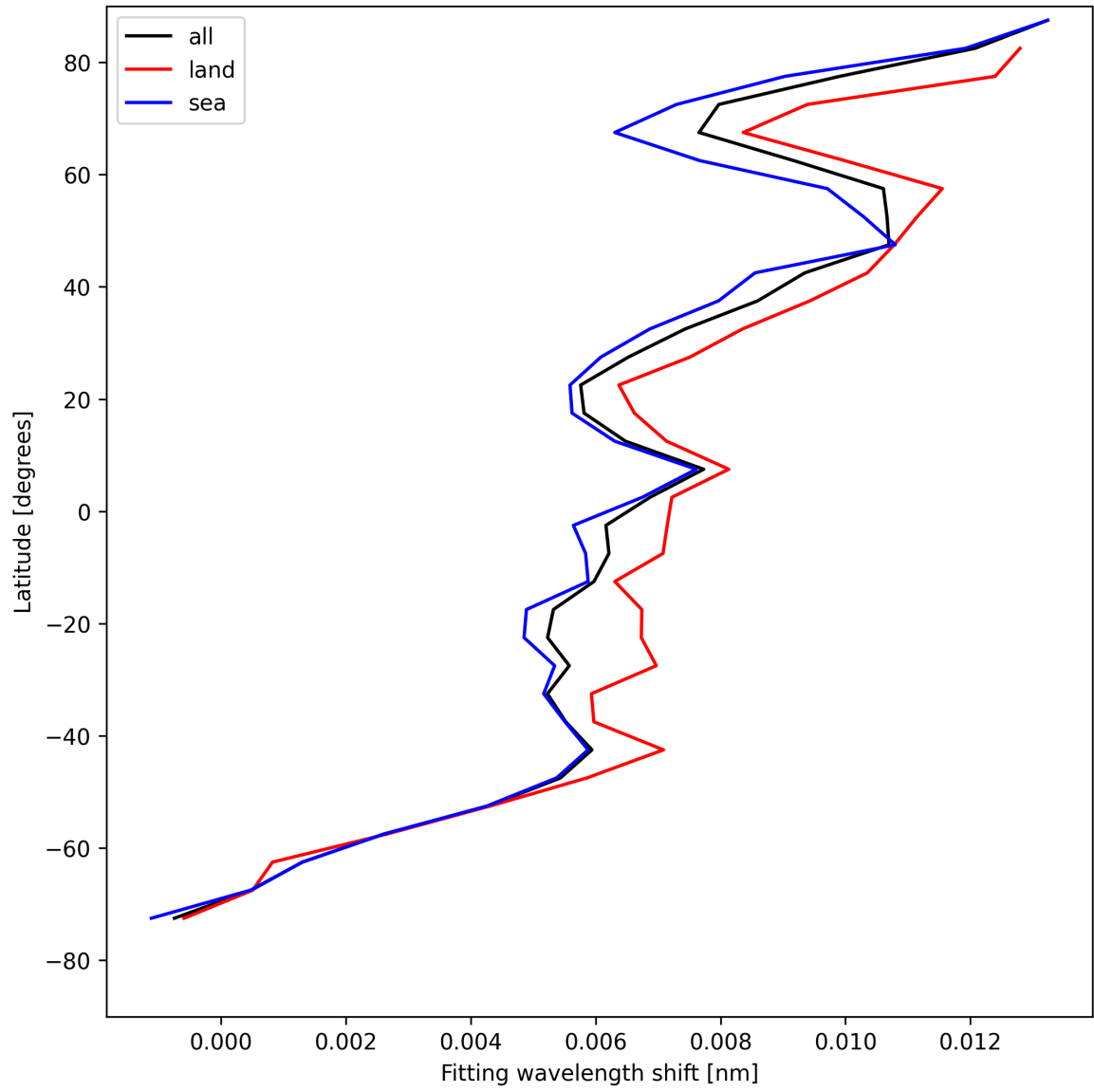


Figure 31: Zonal average of “Fitting wavelength shift” for 2025-05-13 to 2025-05-13.

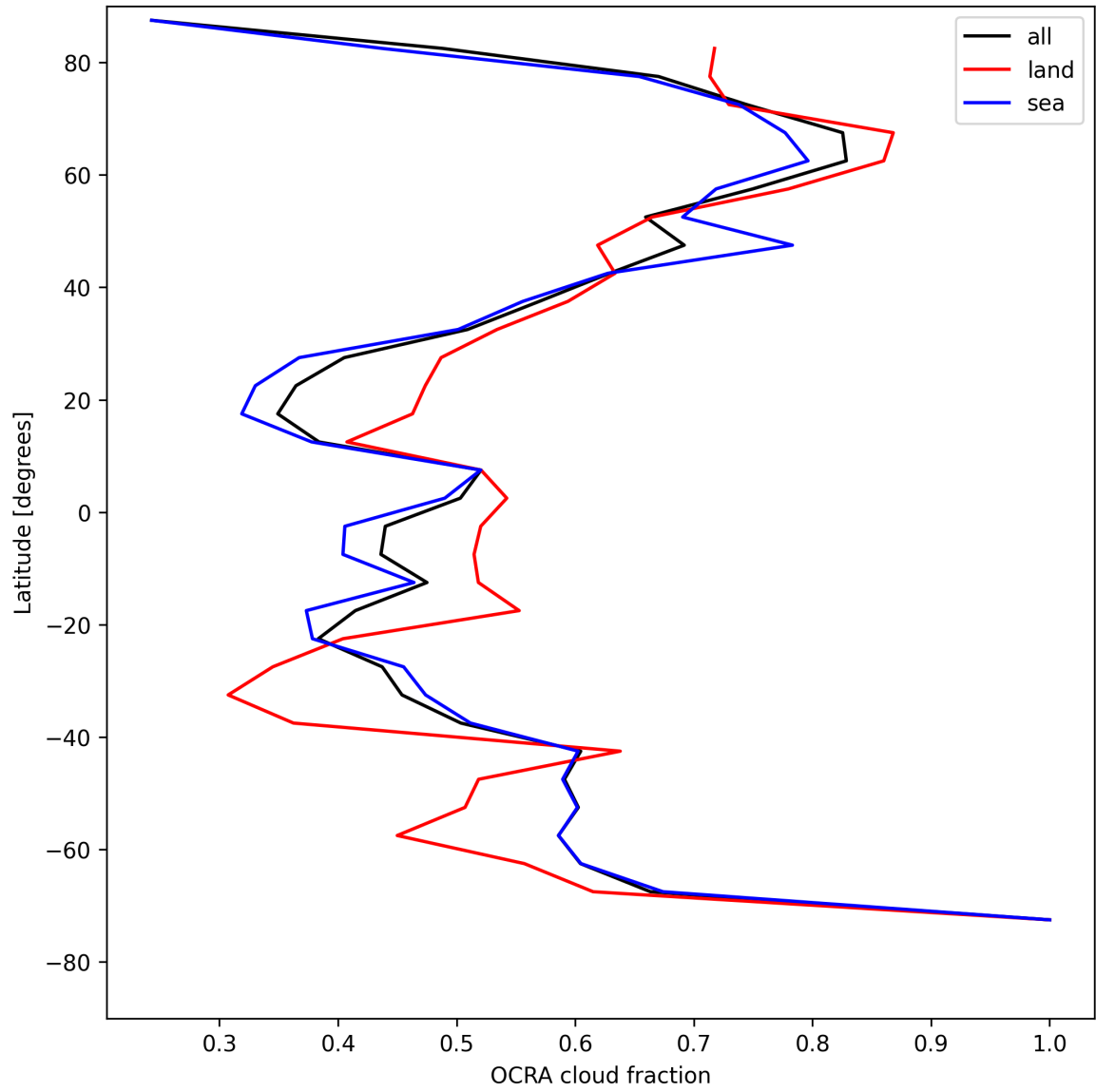


Figure 32: Zonal average of “OCRA cloud fraction” for 2025-05-13 to 2025-05-13.

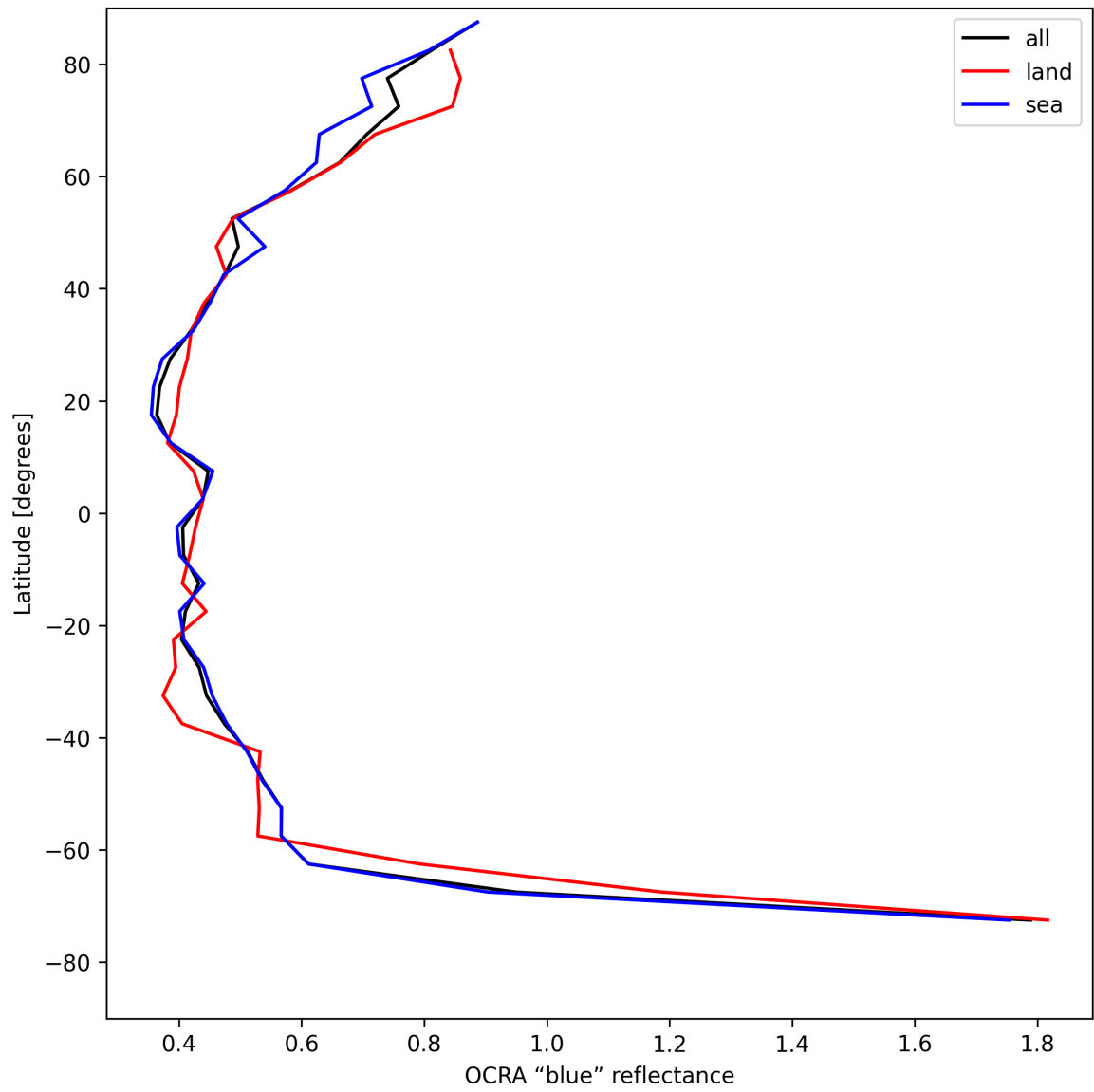


Figure 33: Zonal average of “OCRA “blue” reflectance” for 2025-05-13 to 2025-05-13.

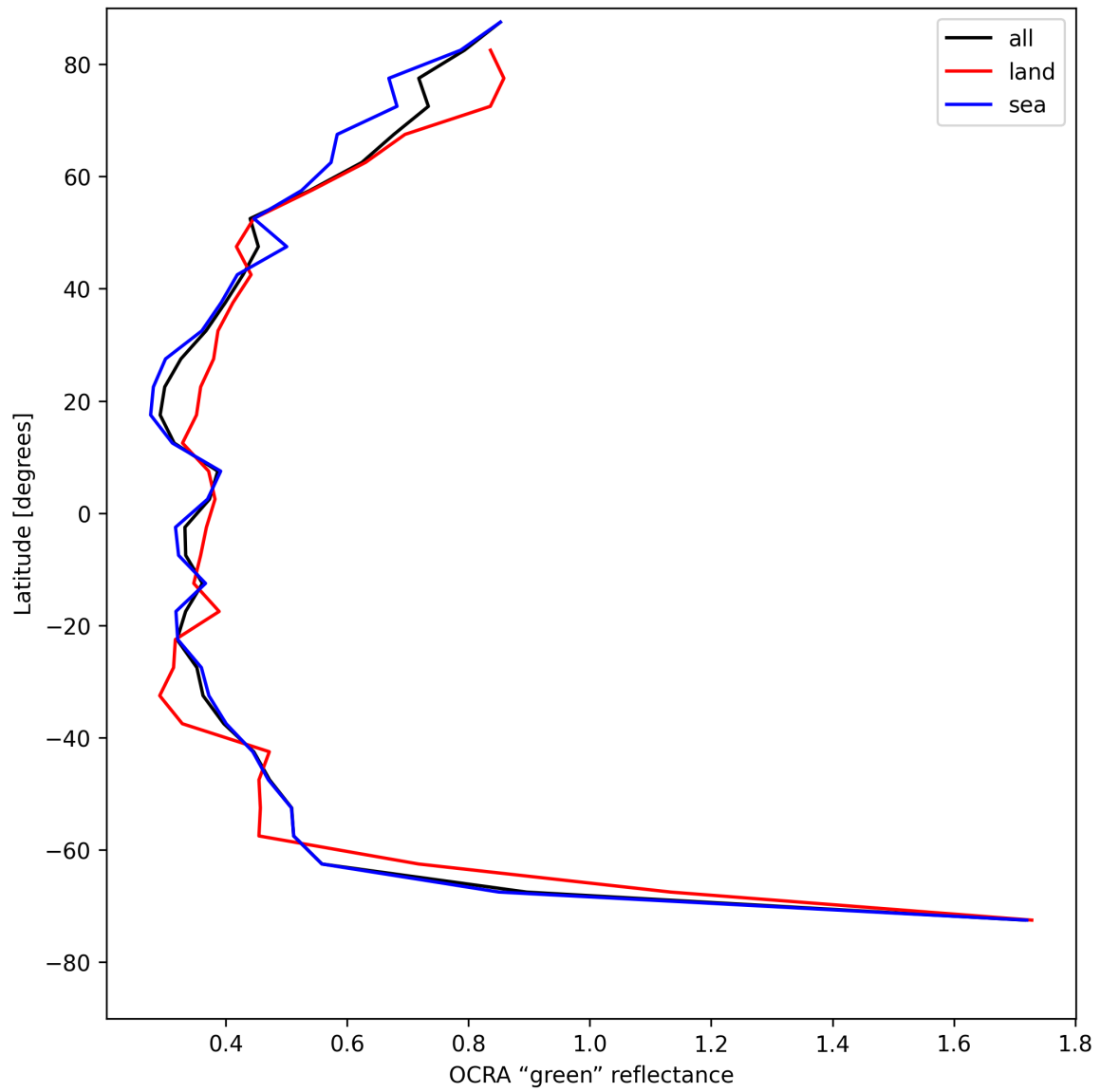


Figure 34: Zonal average of “OCRA “green” reflectance” for 2025-05-13 to 2025-05-13.

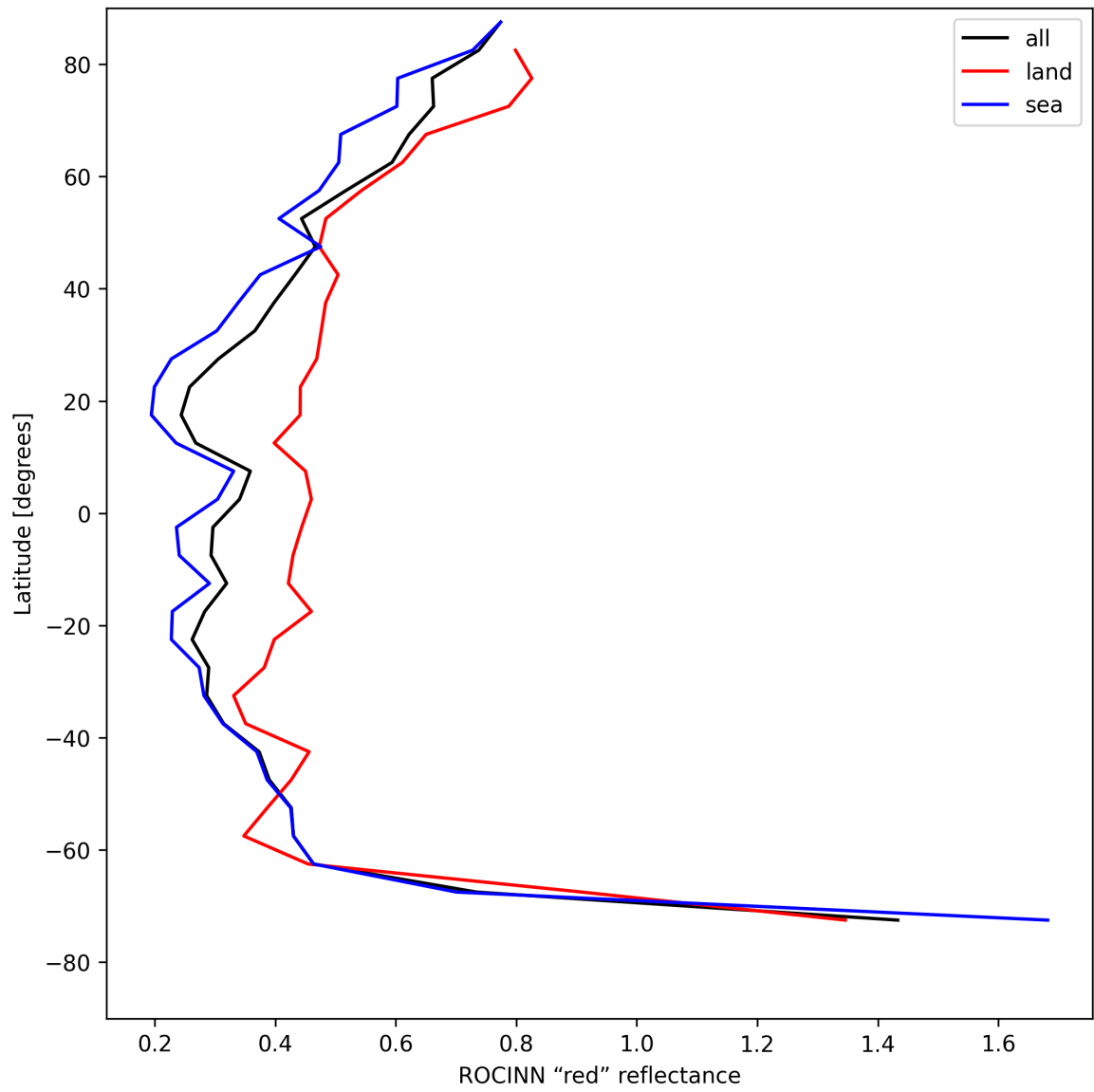


Figure 35: Zonal average of “ROCINN “red” reflectance” for 2025-05-13 to 2025-05-13.

8 Histograms

The definitions of the parameters given in this section can be found in section 2.

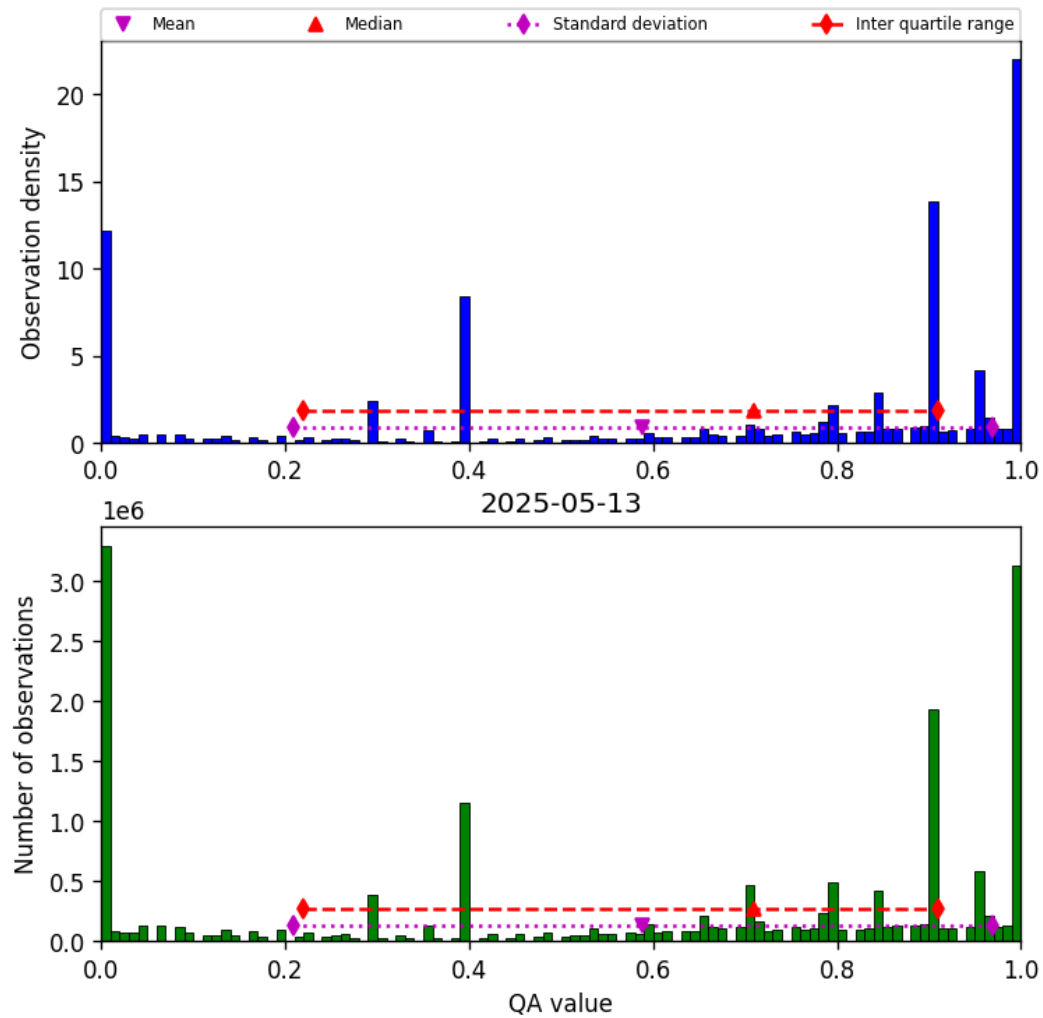


Figure 36: Histogram of “QA value” for 2025-05-13 to 2025-05-13

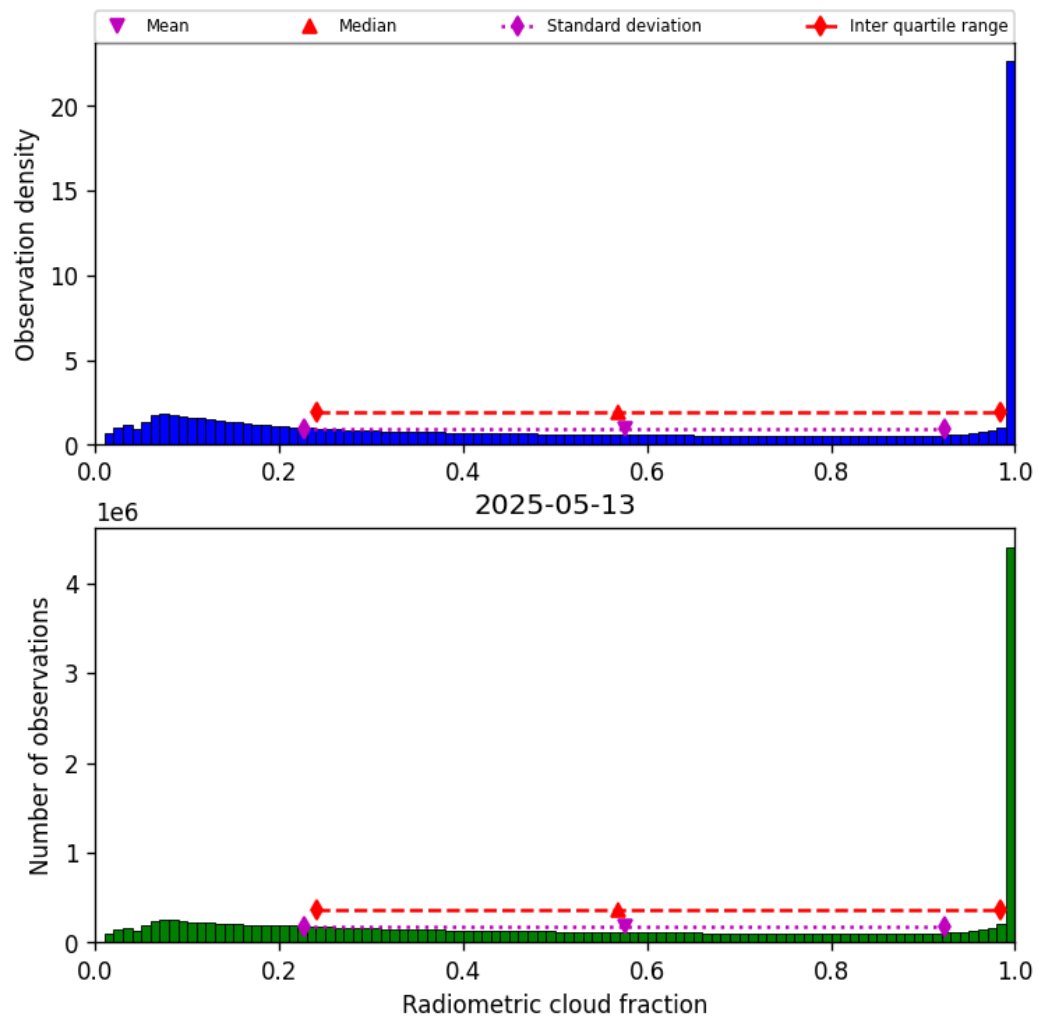


Figure 37: Histogram of “Radiometric cloud fraction” for 2025-05-13 to 2025-05-13

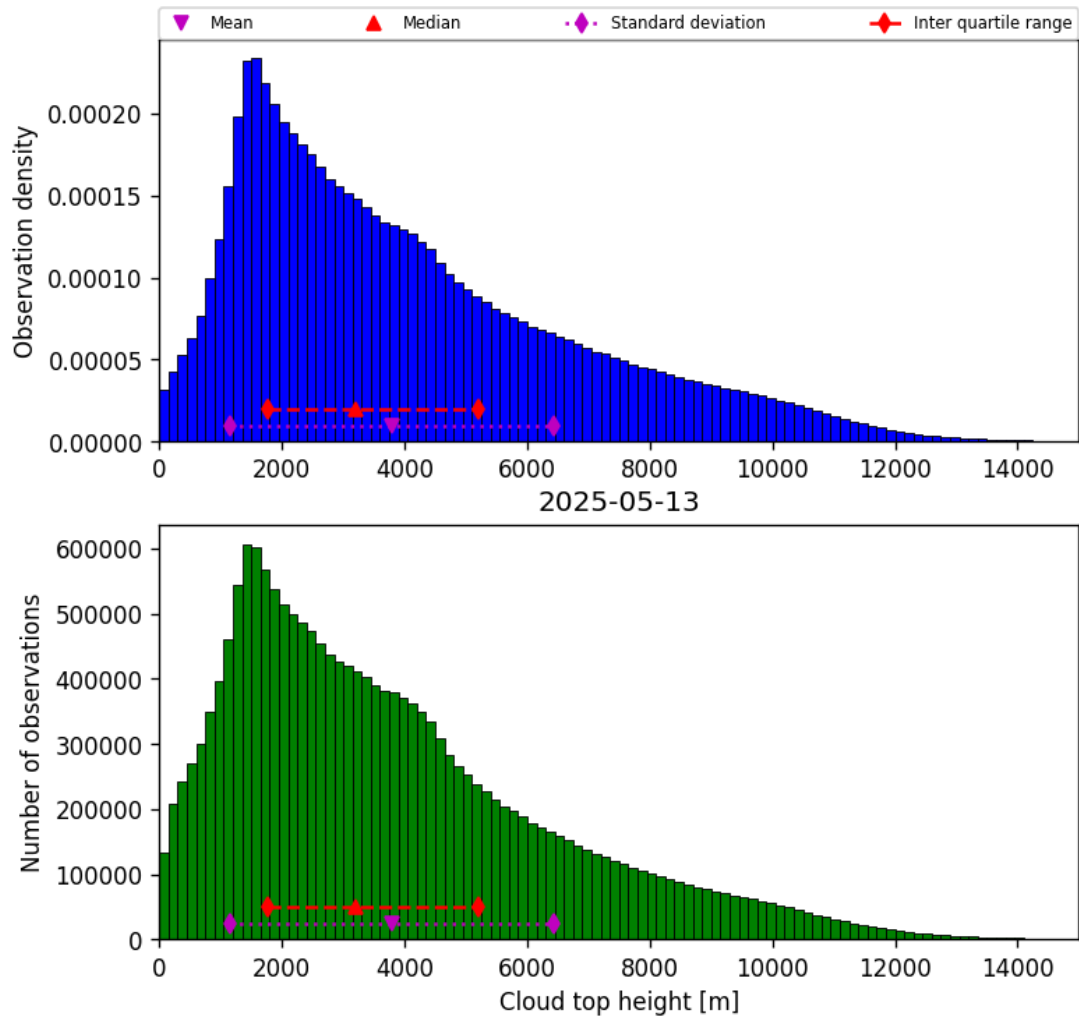


Figure 38: Histogram of “Cloud top height” for 2025-05-13 to 2025-05-13

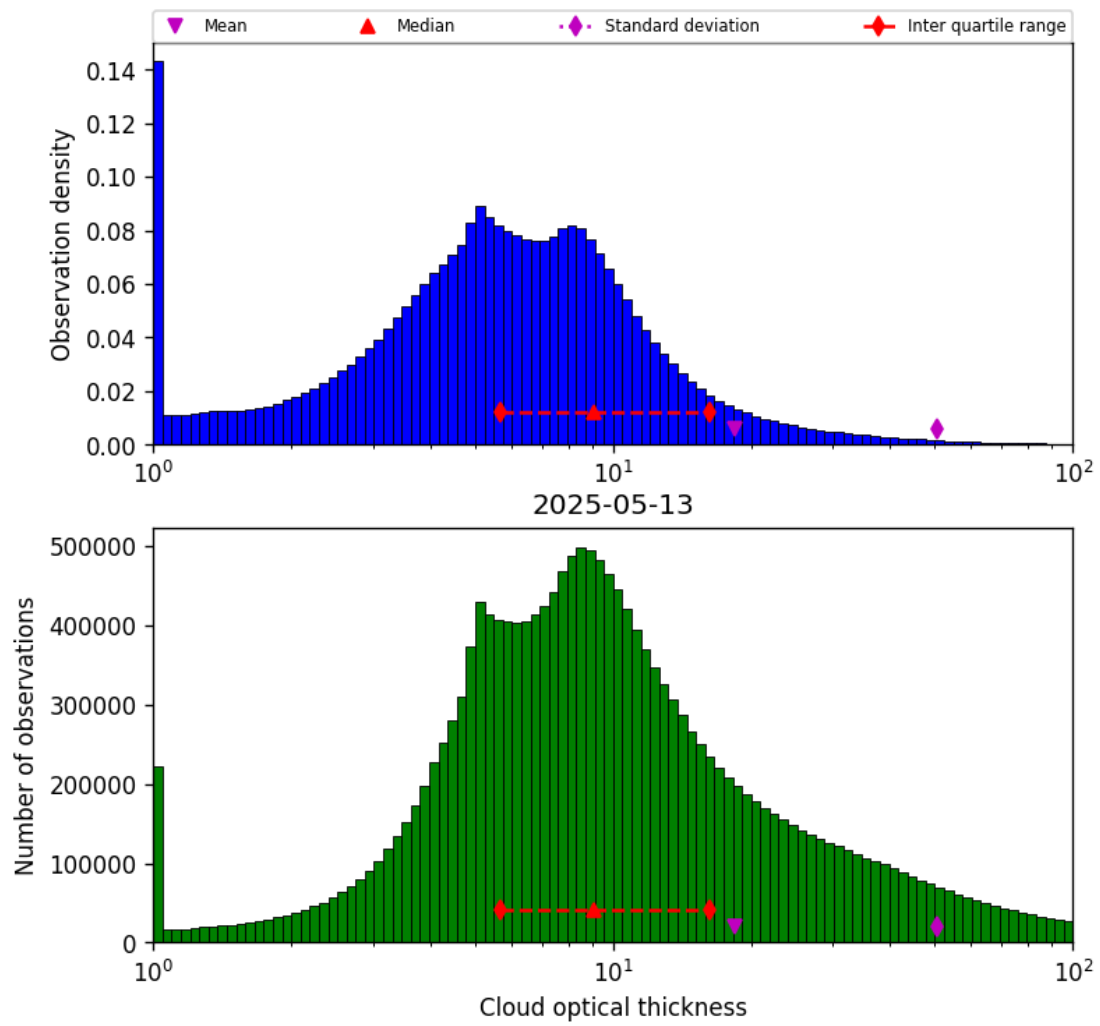


Figure 39: Histogram of “Cloud optical thickness” for 2025-05-13 to 2025-05-13

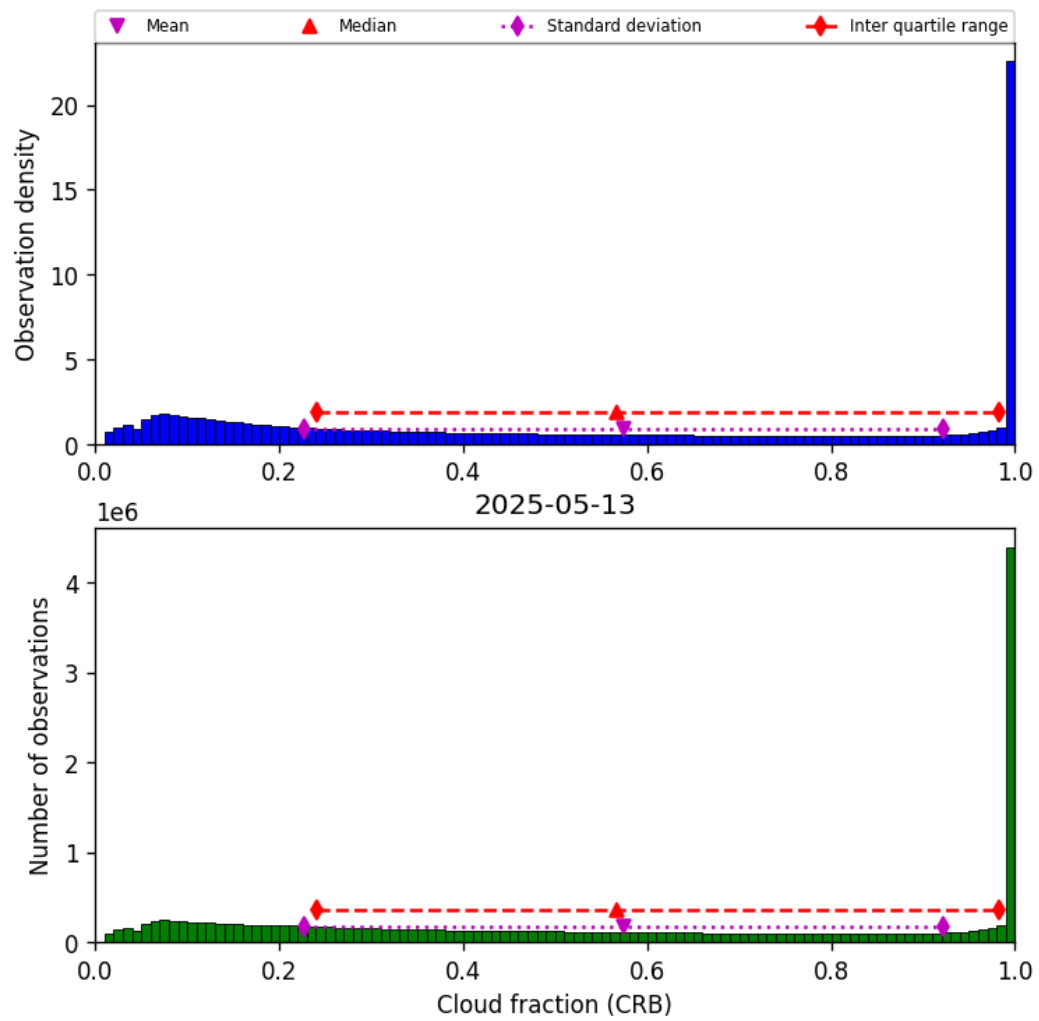


Figure 40: Histogram of “Cloud fraction (CRB)” for 2025-05-13 to 2025-05-13

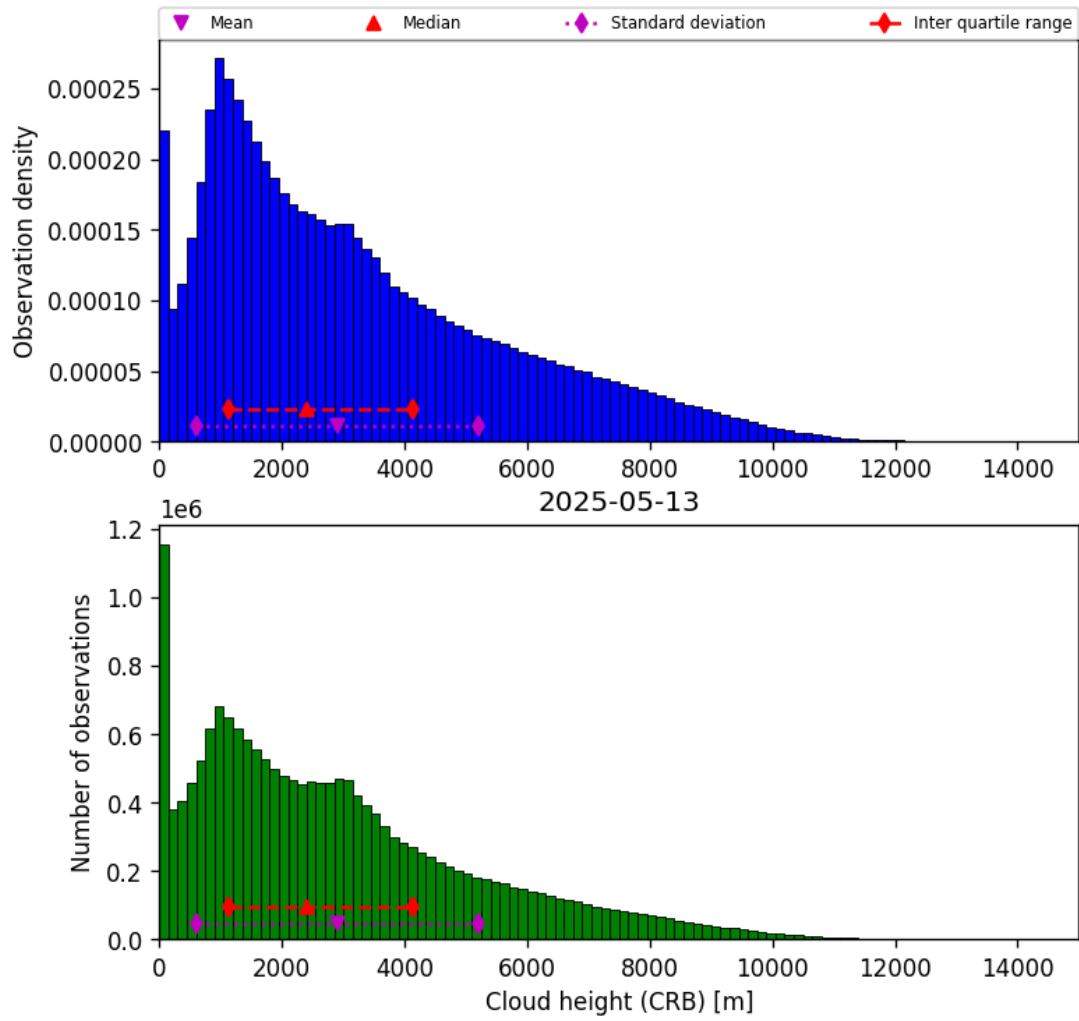


Figure 41: Histogram of “Cloud height (CRB)” for 2025-05-13 to 2025-05-13

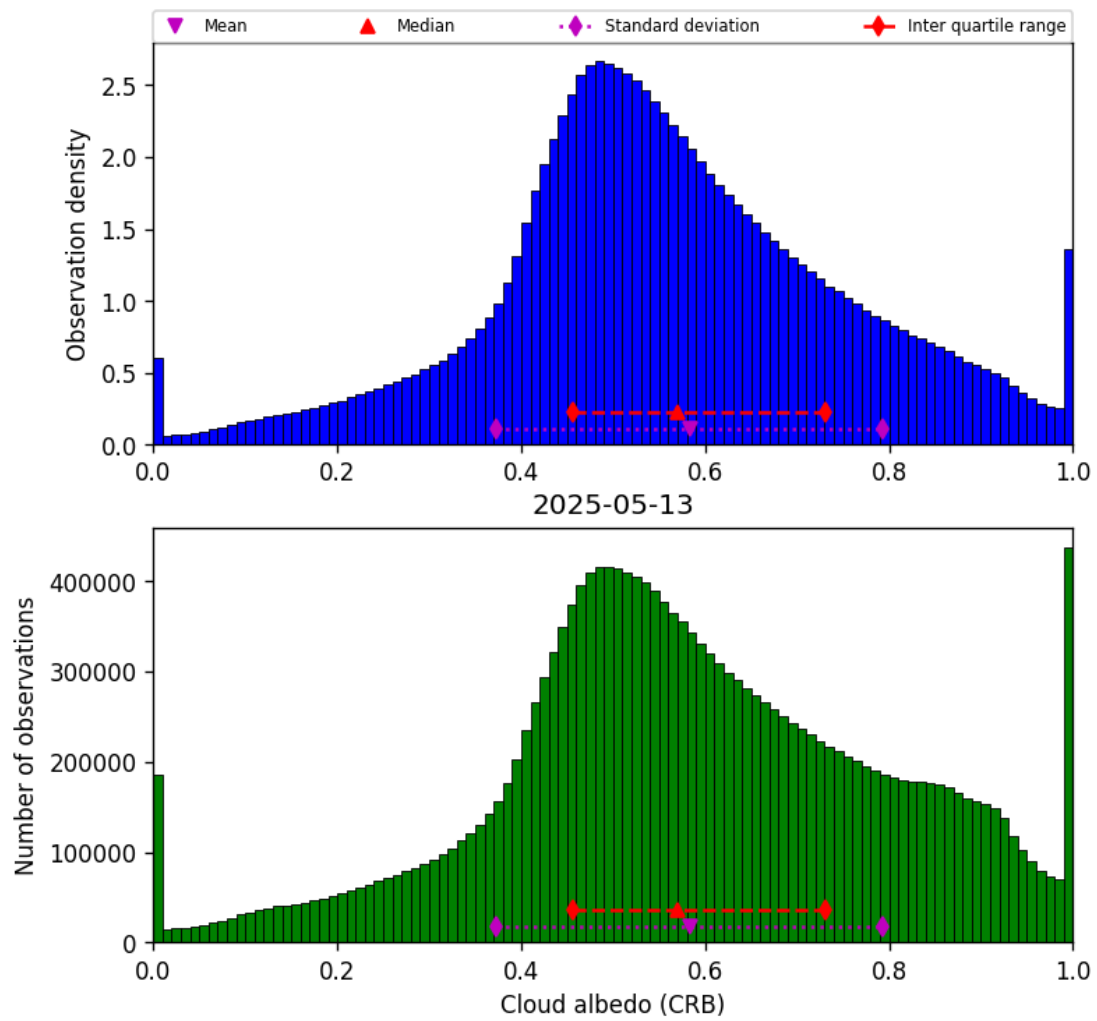


Figure 42: Histogram of “Cloud albedo (CRB)” for 2025-05-13 to 2025-05-13

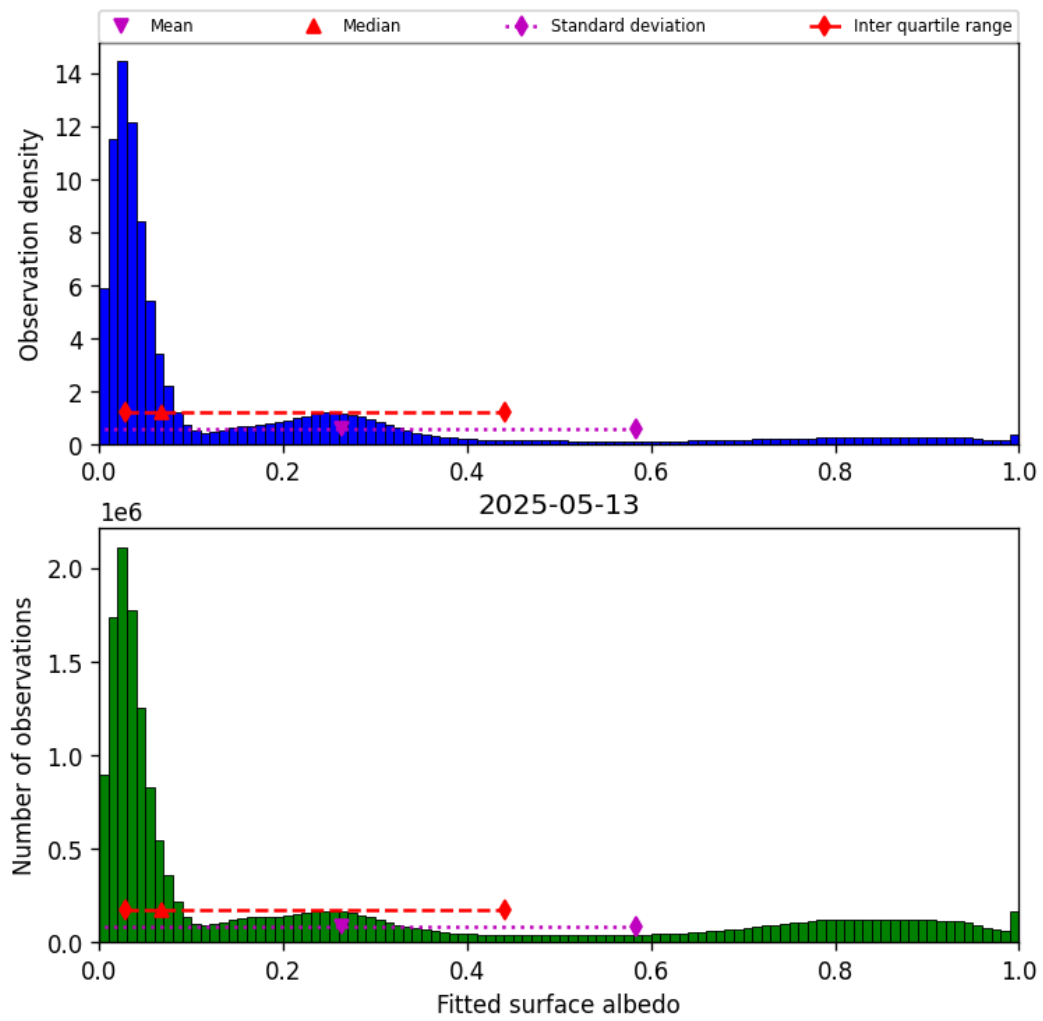


Figure 43: Histogram of “Fitted surface albedo” for 2025-05-13 to 2025-05-13

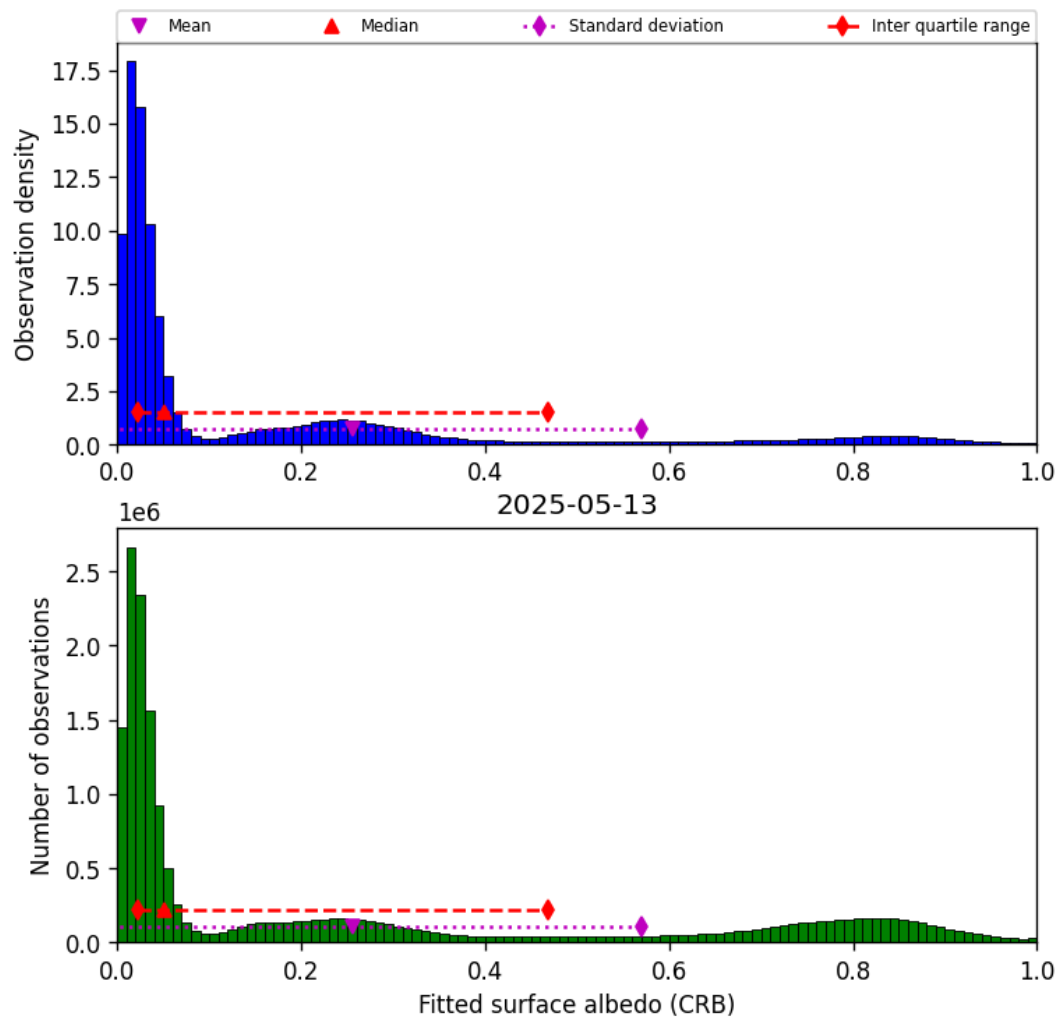


Figure 44: Histogram of “Fitted surface albedo (CRB)” for 2025-05-13 to 2025-05-13

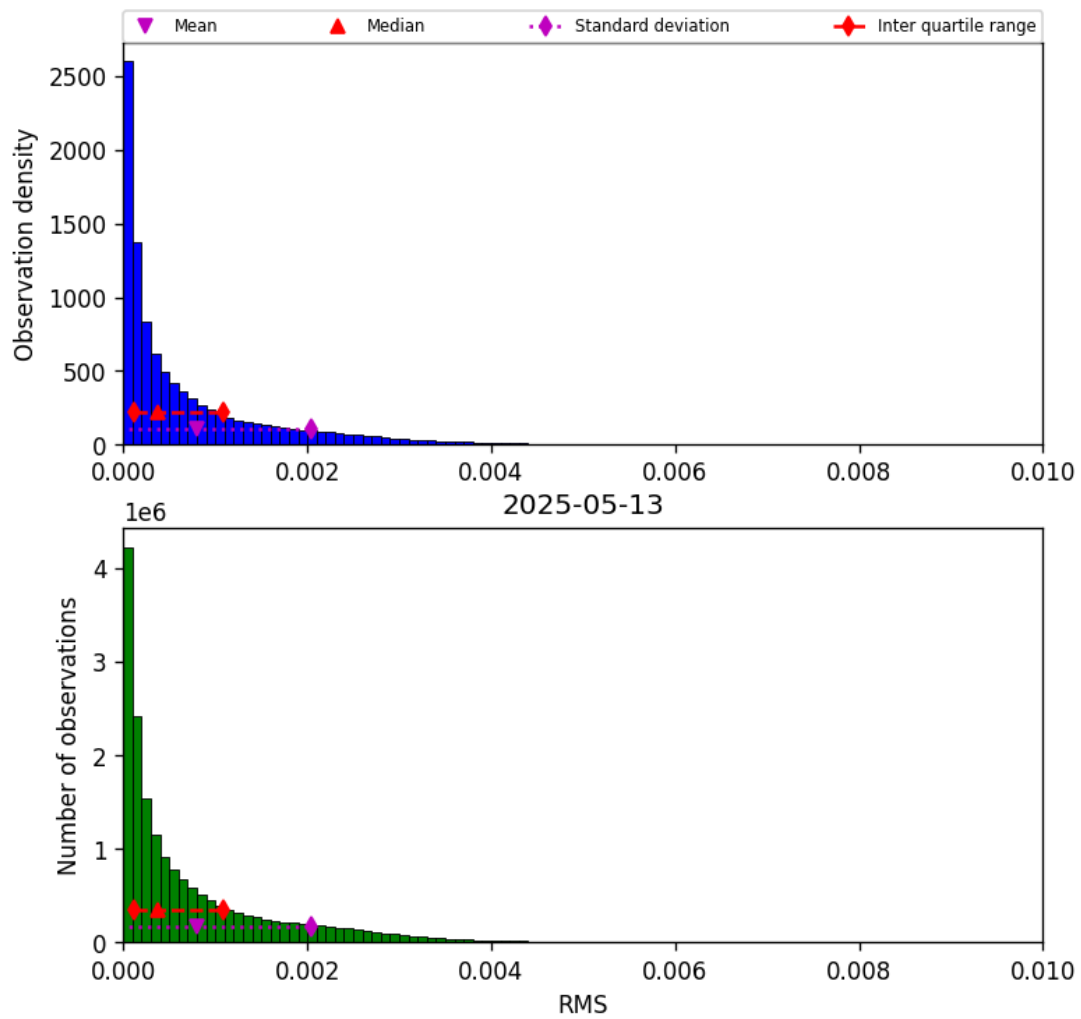


Figure 45: Histogram of “RMS” for 2025-05-13 to 2025-05-13

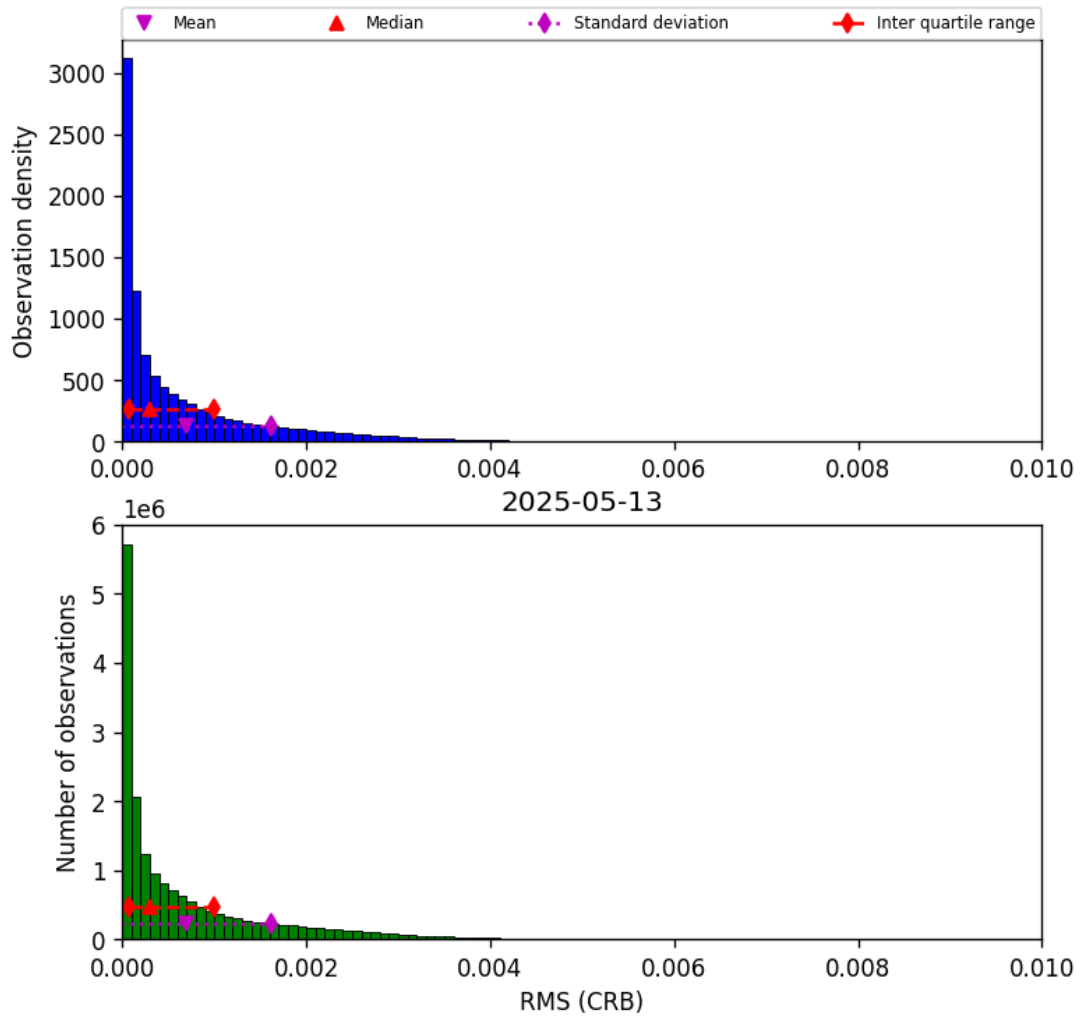


Figure 46: Histogram of “RMS (CRB)” for 2025-05-13 to 2025-05-13

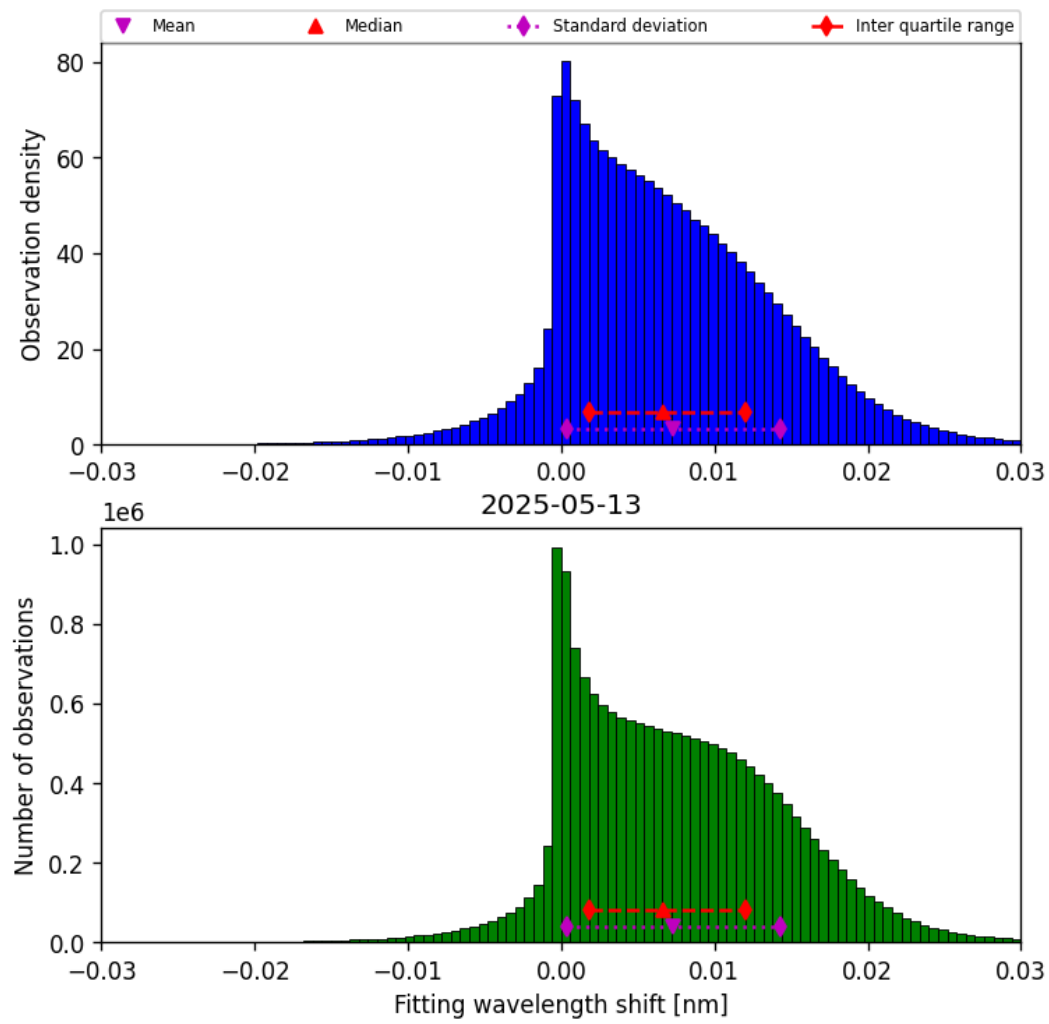


Figure 47: Histogram of “Fitting wavelength shift” for 2025-05-13 to 2025-05-13

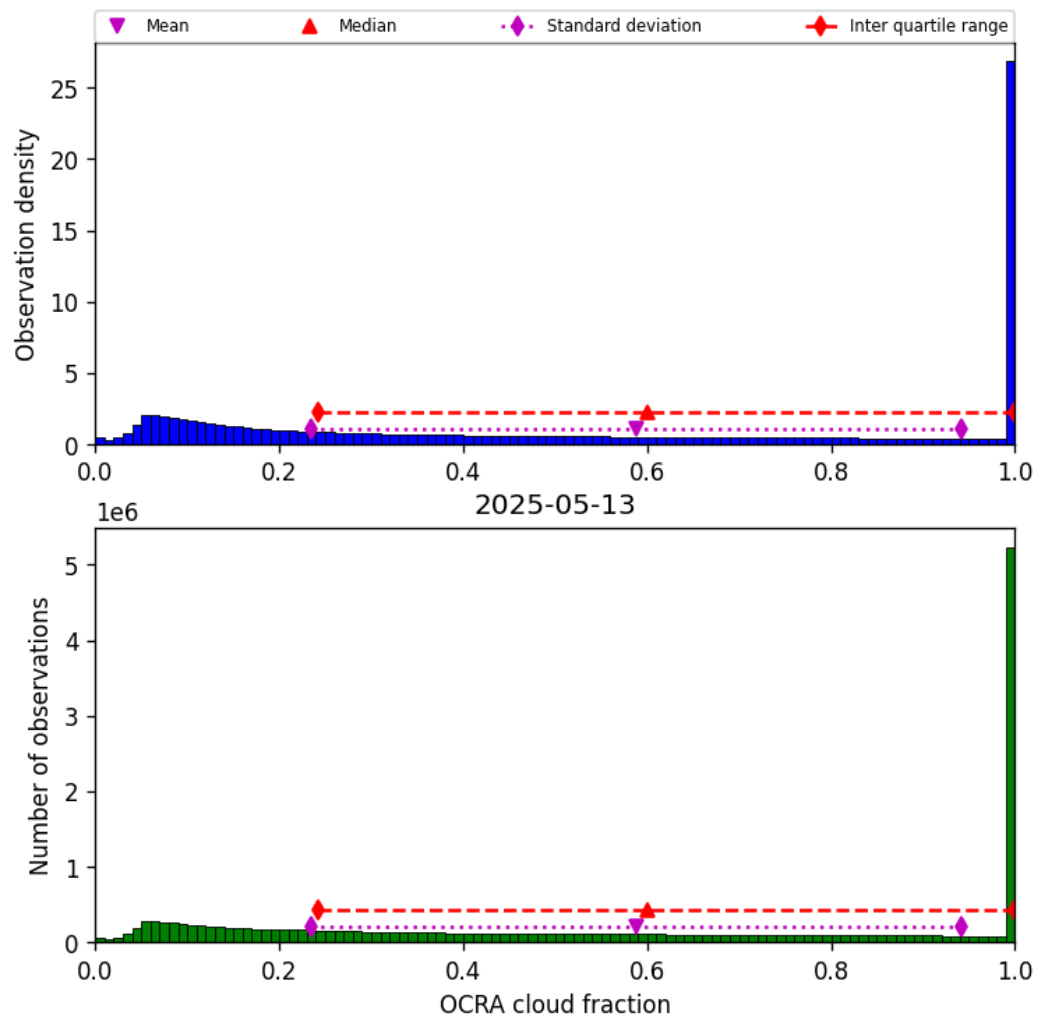


Figure 48: Histogram of “OCRA cloud fraction” for 2025-05-13 to 2025-05-13

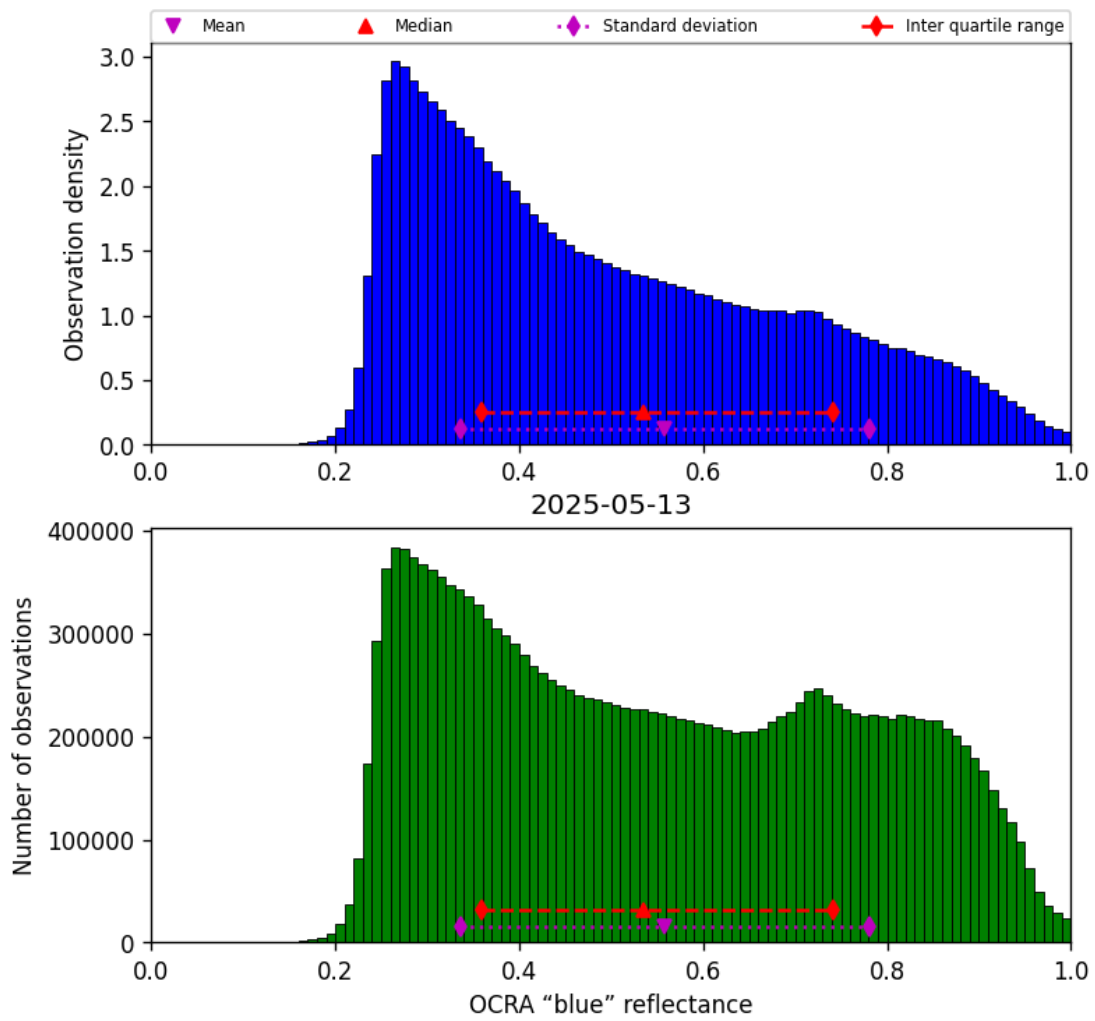


Figure 49: Histogram of “OCRA “blue” reflectance” for 2025-05-13 to 2025-05-13

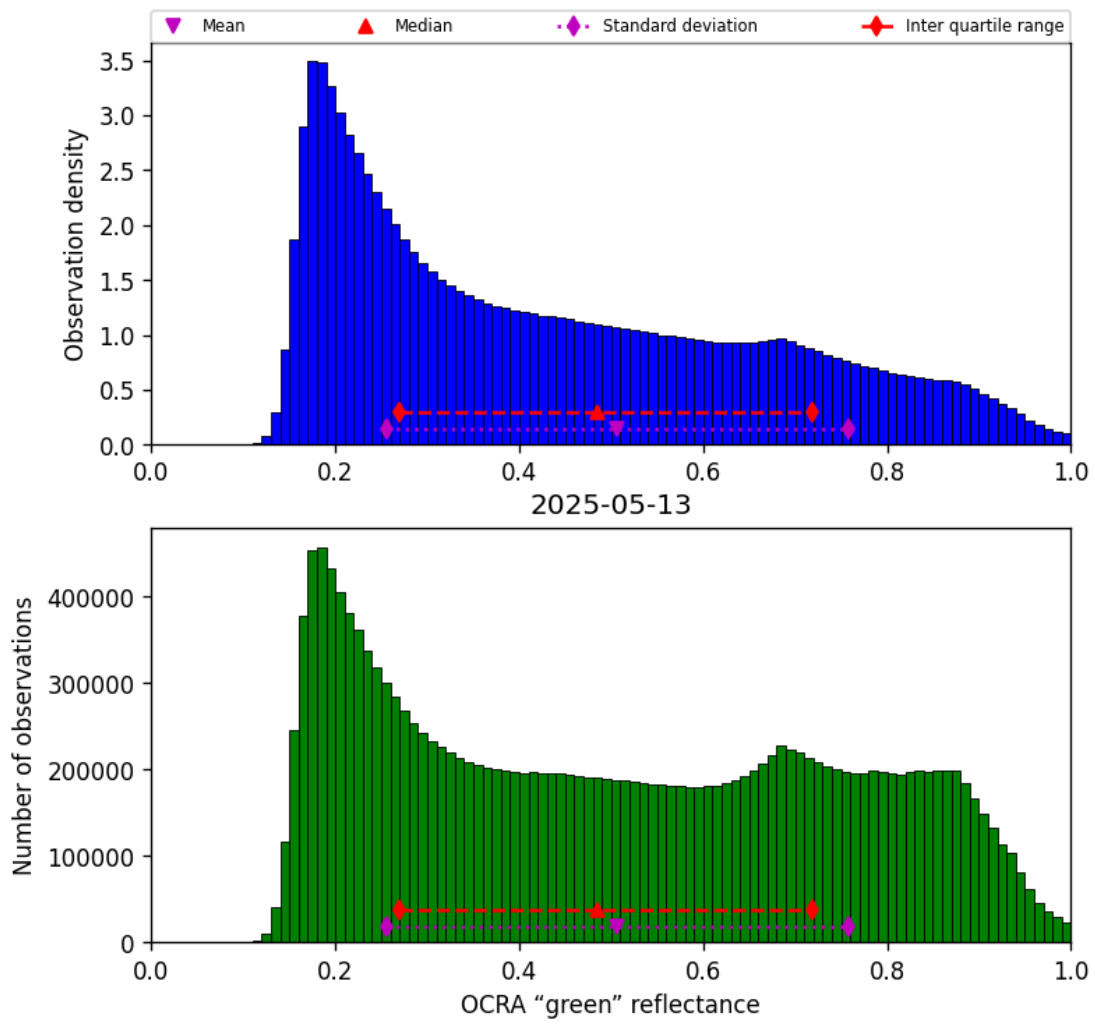


Figure 50: Histogram of “OCRA “green” reflectance” for 2025-05-13 to 2025-05-13

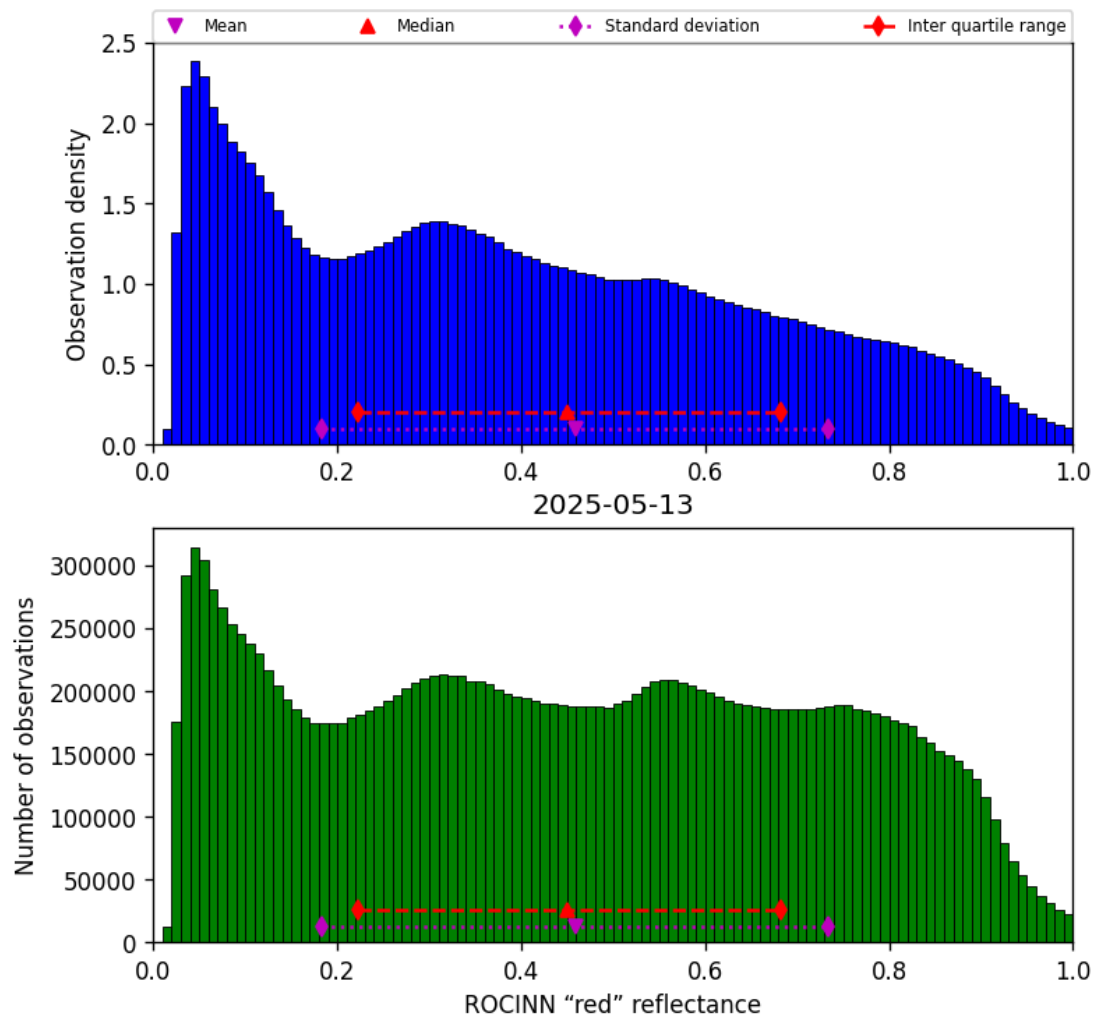


Figure 51: Histogram of “ROCINN “red” reflectance” for 2025-05-13 to 2025-05-13

9 Along track statistics

The TROPOMI instrument uses different binned detector rows for different viewing directions. In this section statistics are presented for each of the binned rows in the instrument.

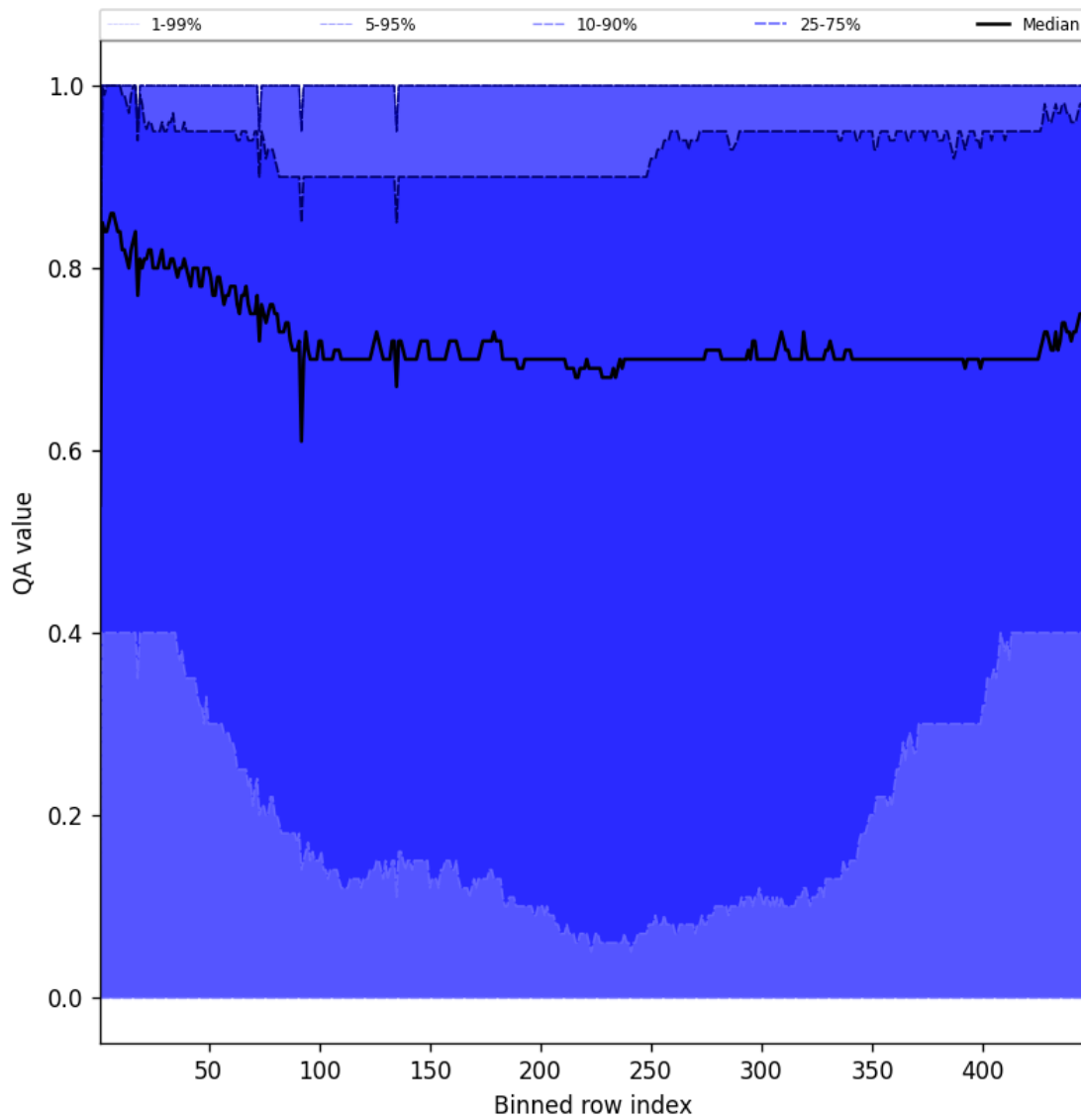


Figure 52: Along track statistics of “QA value” for 2025-05-13 to 2025-05-13

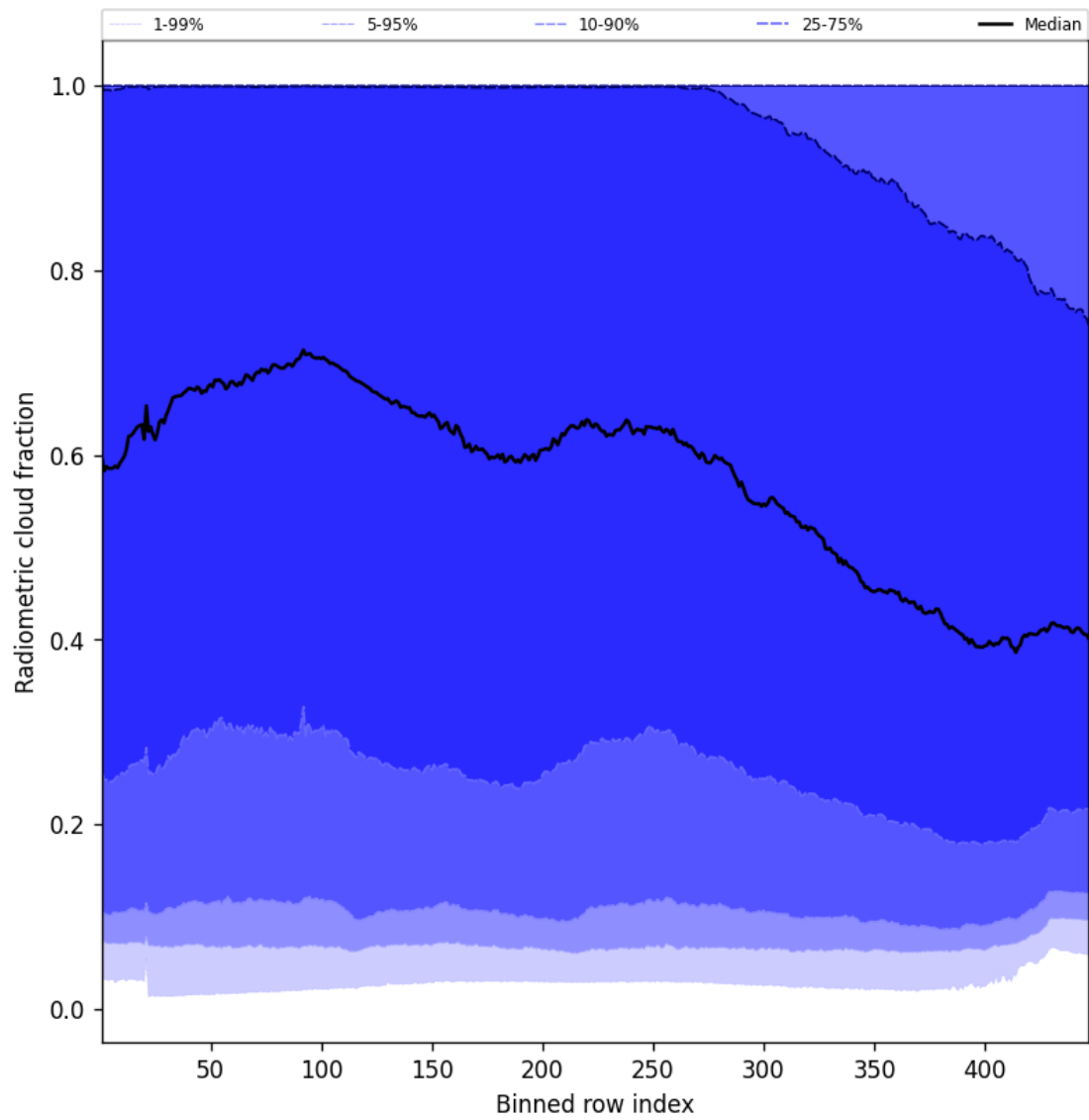


Figure 53: Along track statistics of “Radiometric cloud fraction” for 2025-05-13 to 2025-05-13

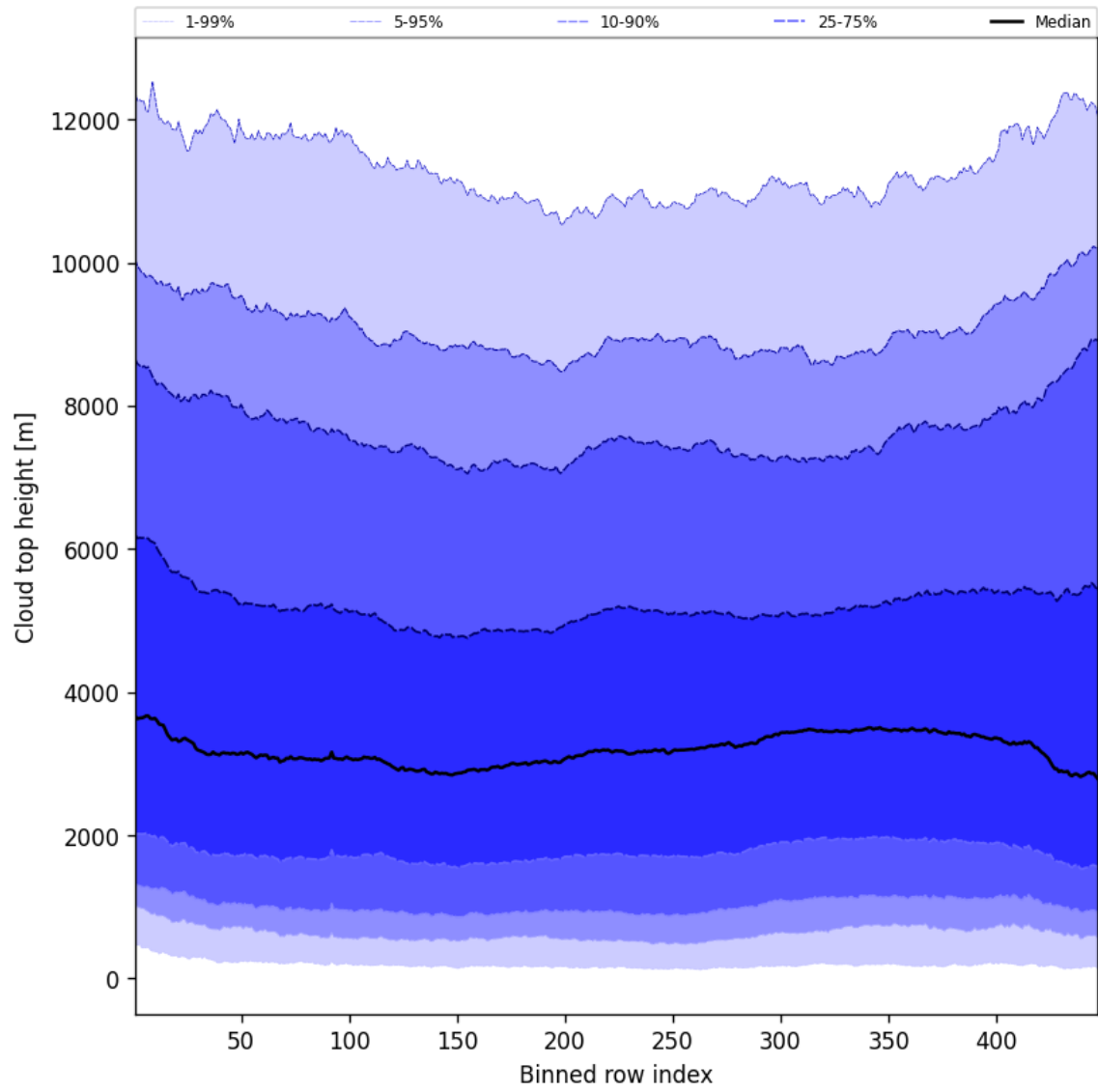


Figure 54: Along track statistics of “Cloud top height” for 2025-05-13 to 2025-05-13

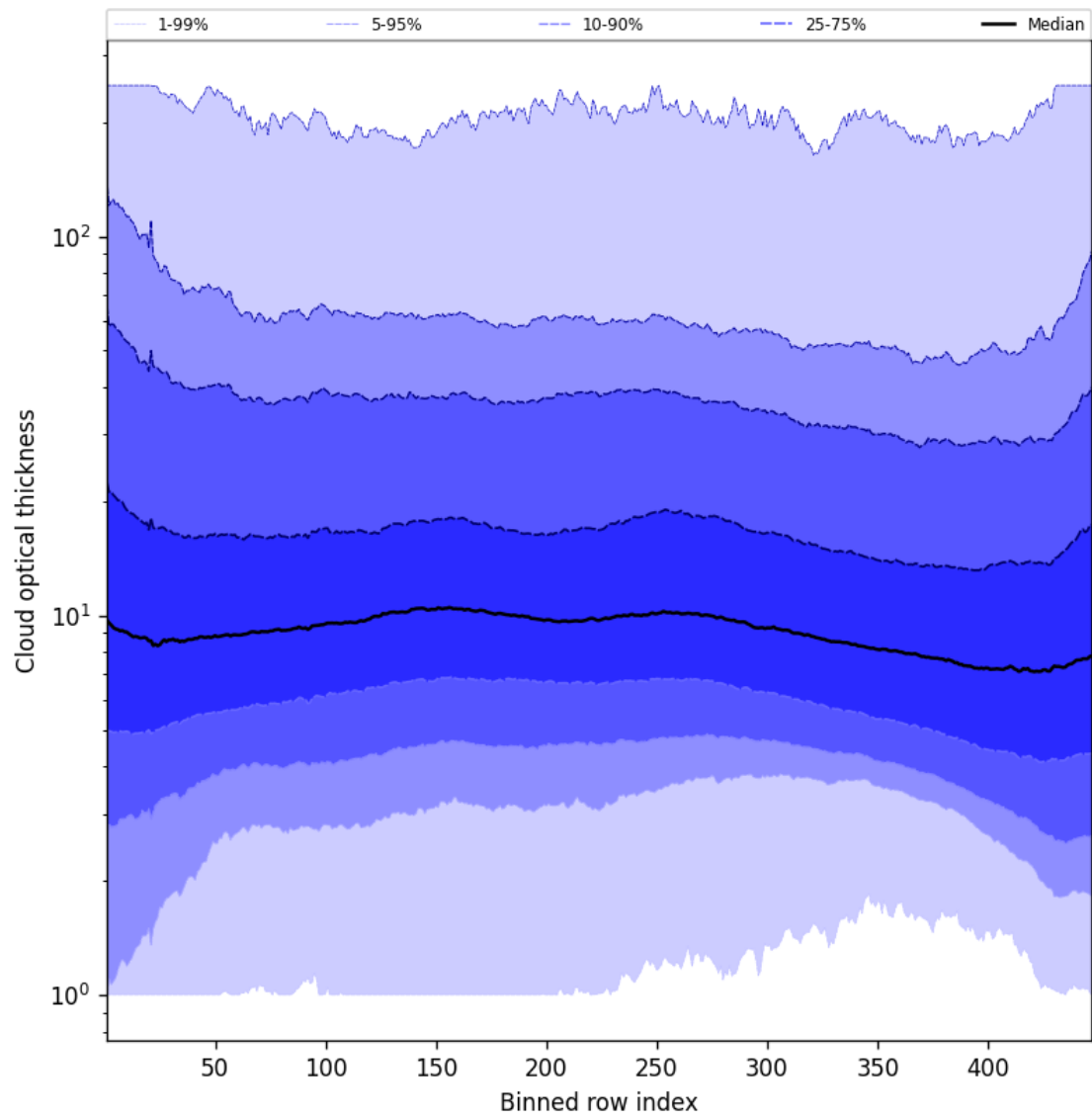


Figure 55: Along track statistics of “Cloud optical thickness” for 2025-05-13 to 2025-05-13

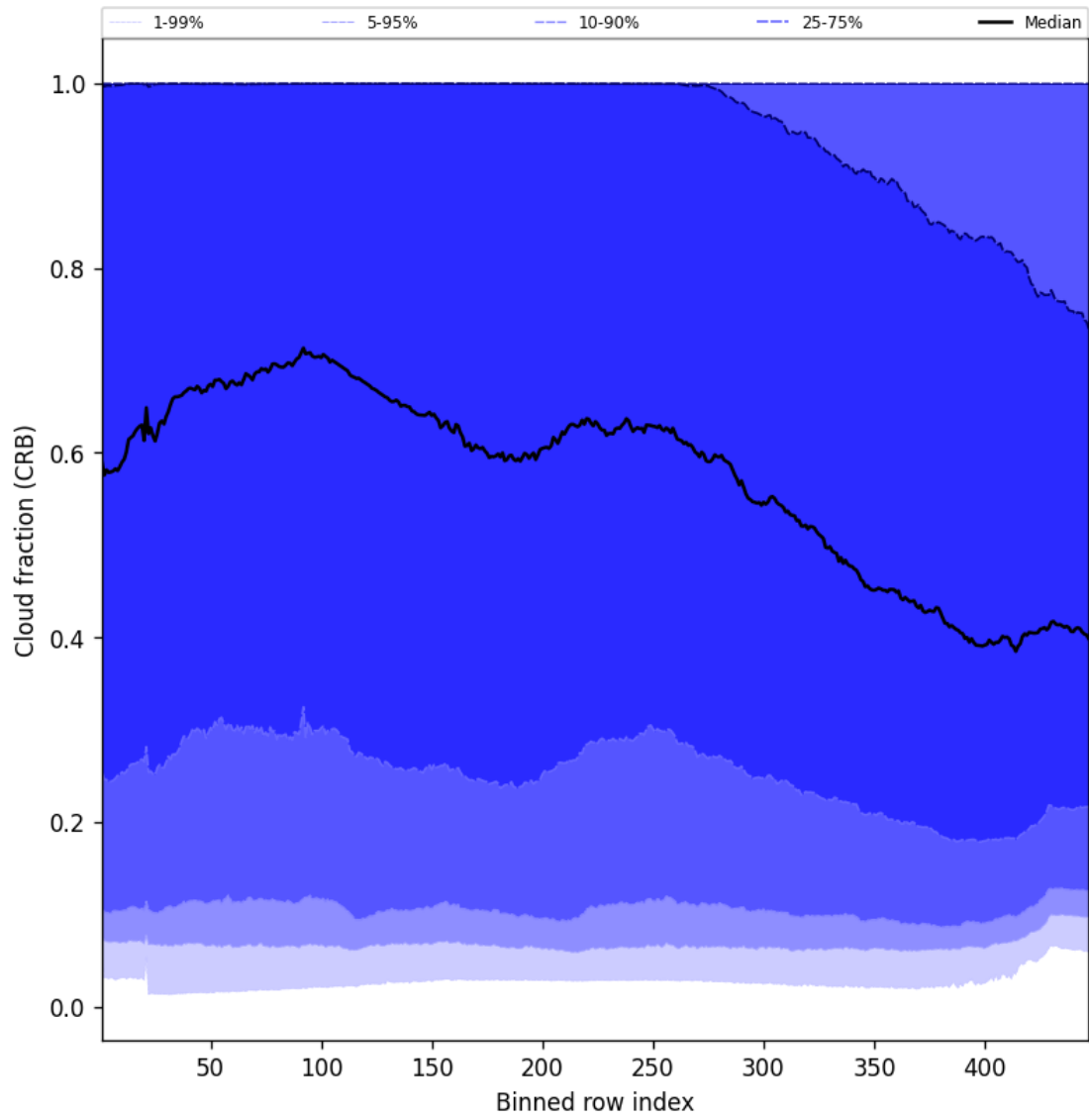


Figure 56: Along track statistics of “Cloud fraction (CRB)” for 2025-05-13 to 2025-05-13

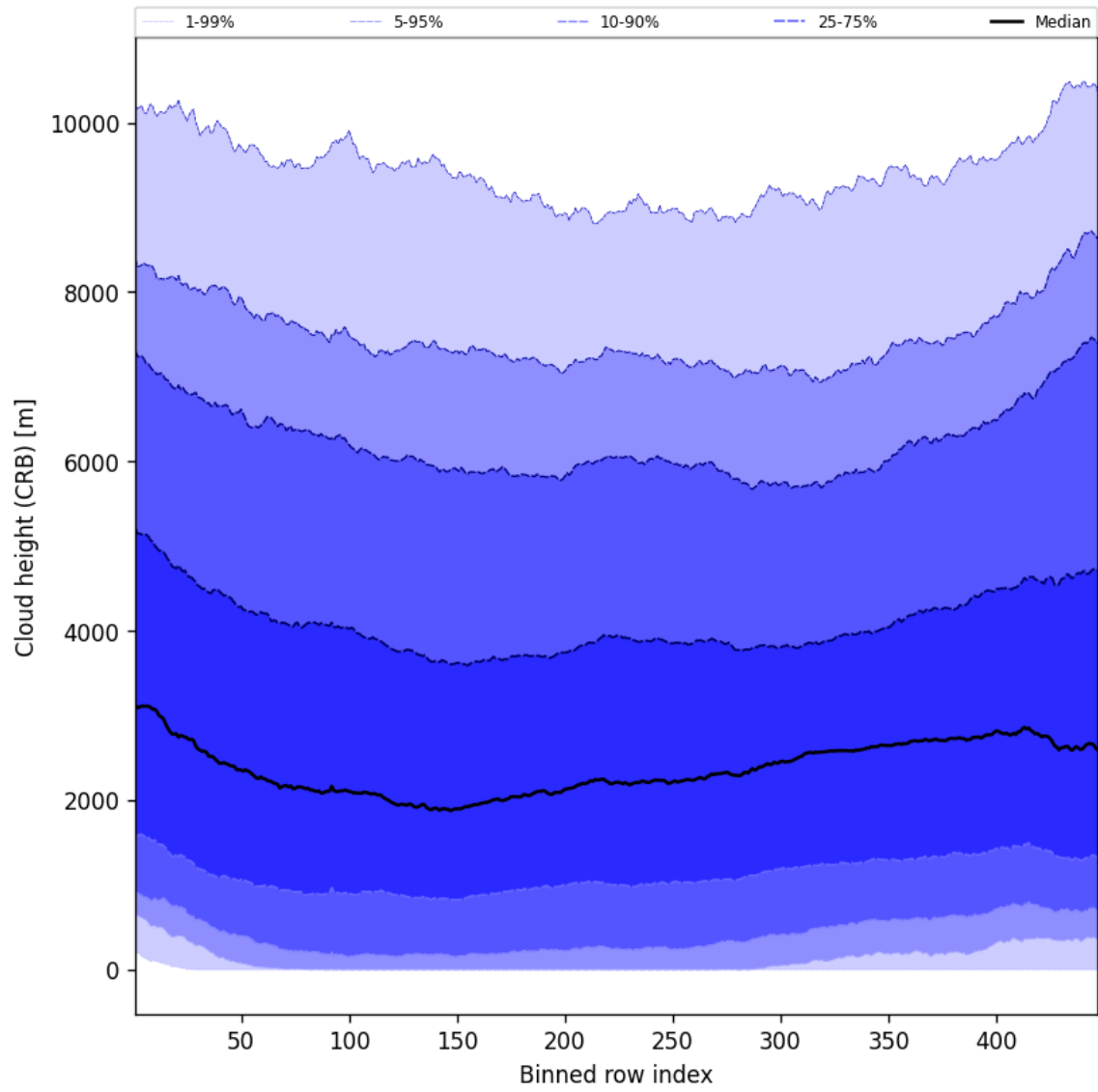


Figure 57: Along track statistics of “Cloud height (CRB)” for 2025-05-13 to 2025-05-13

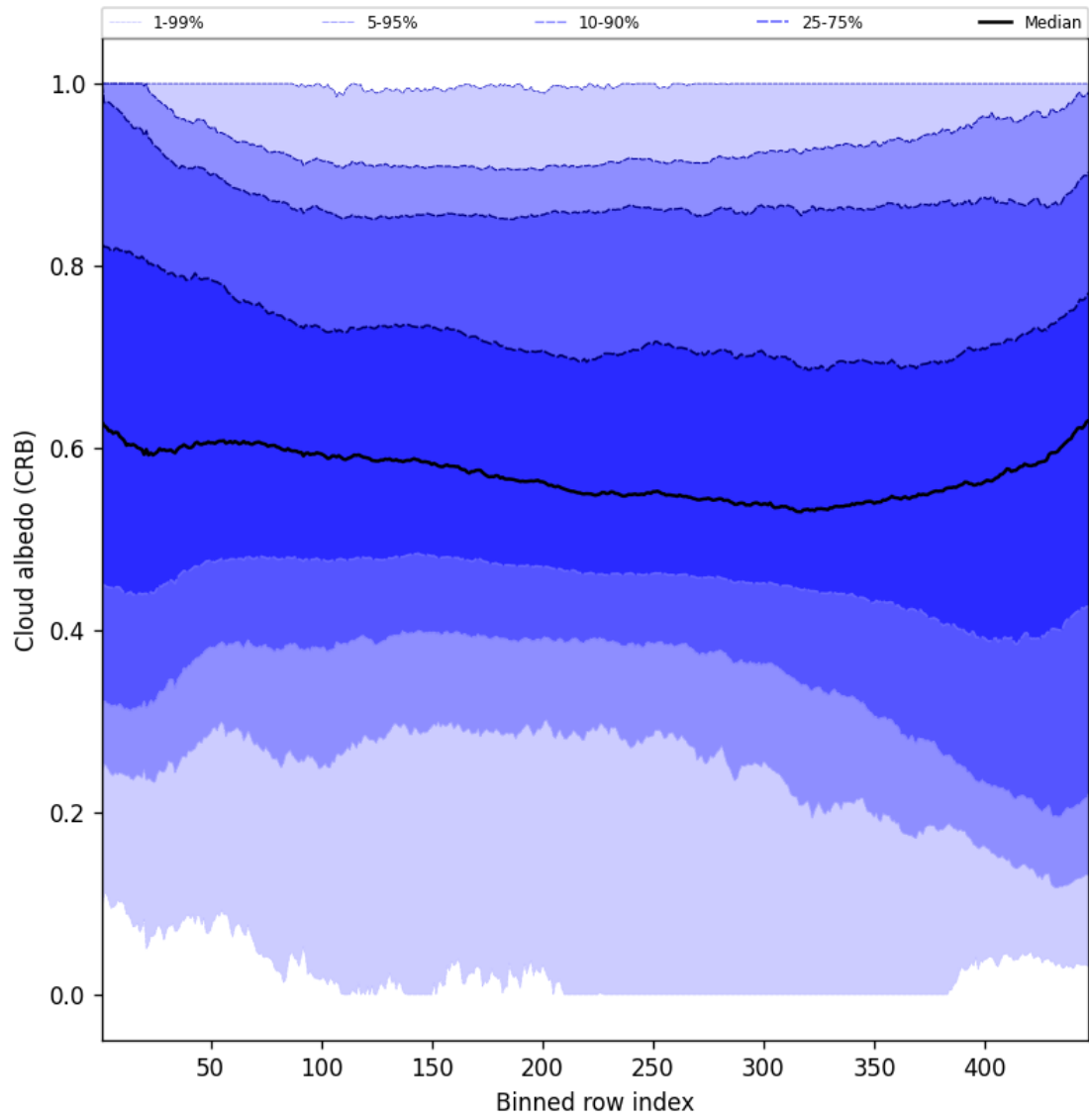


Figure 58: Along track statistics of “Cloud albedo (CRB)” for 2025-05-13 to 2025-05-13

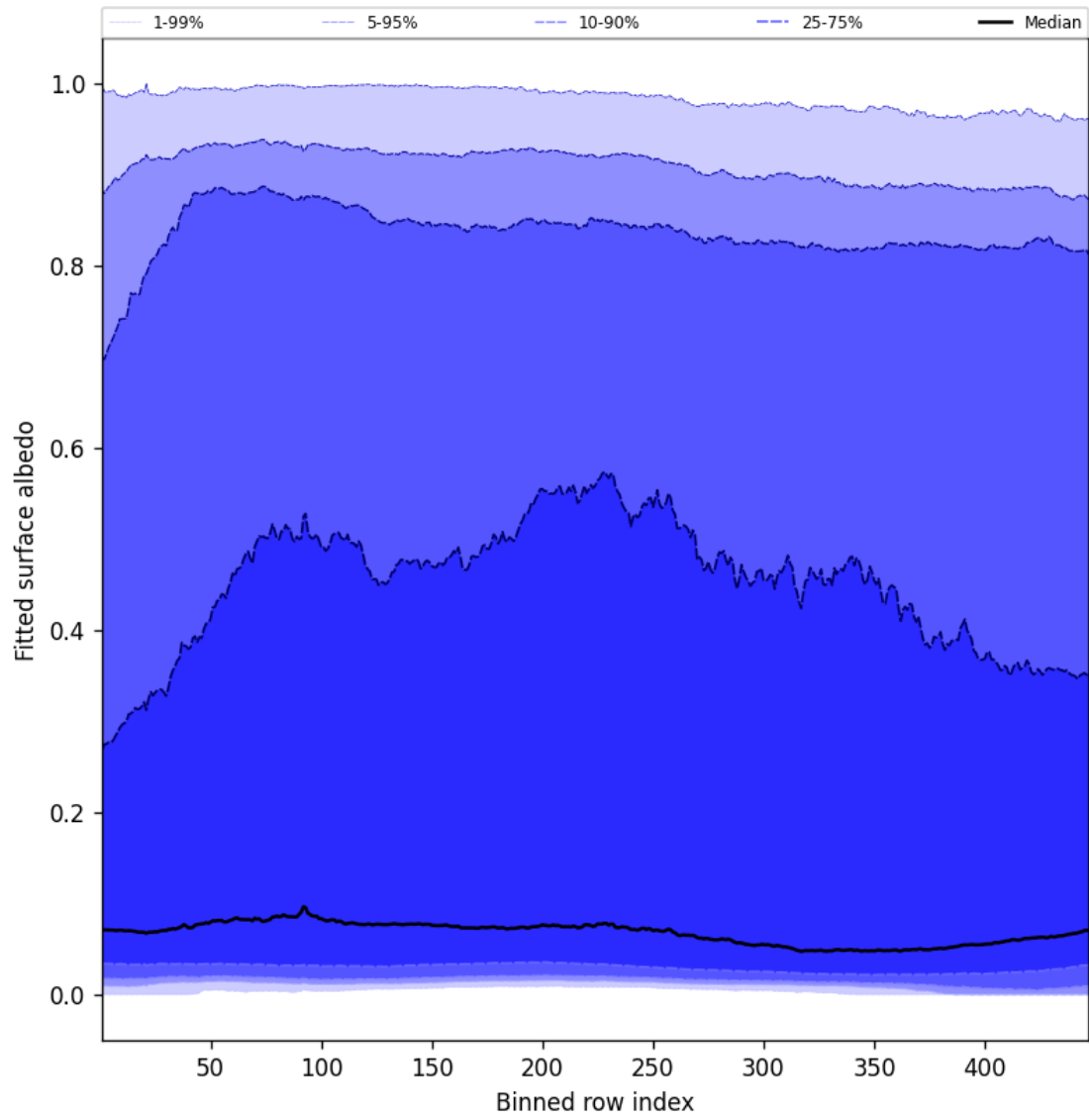


Figure 59: Along track statistics of “Fitted surface albedo” for 2025-05-13 to 2025-05-13

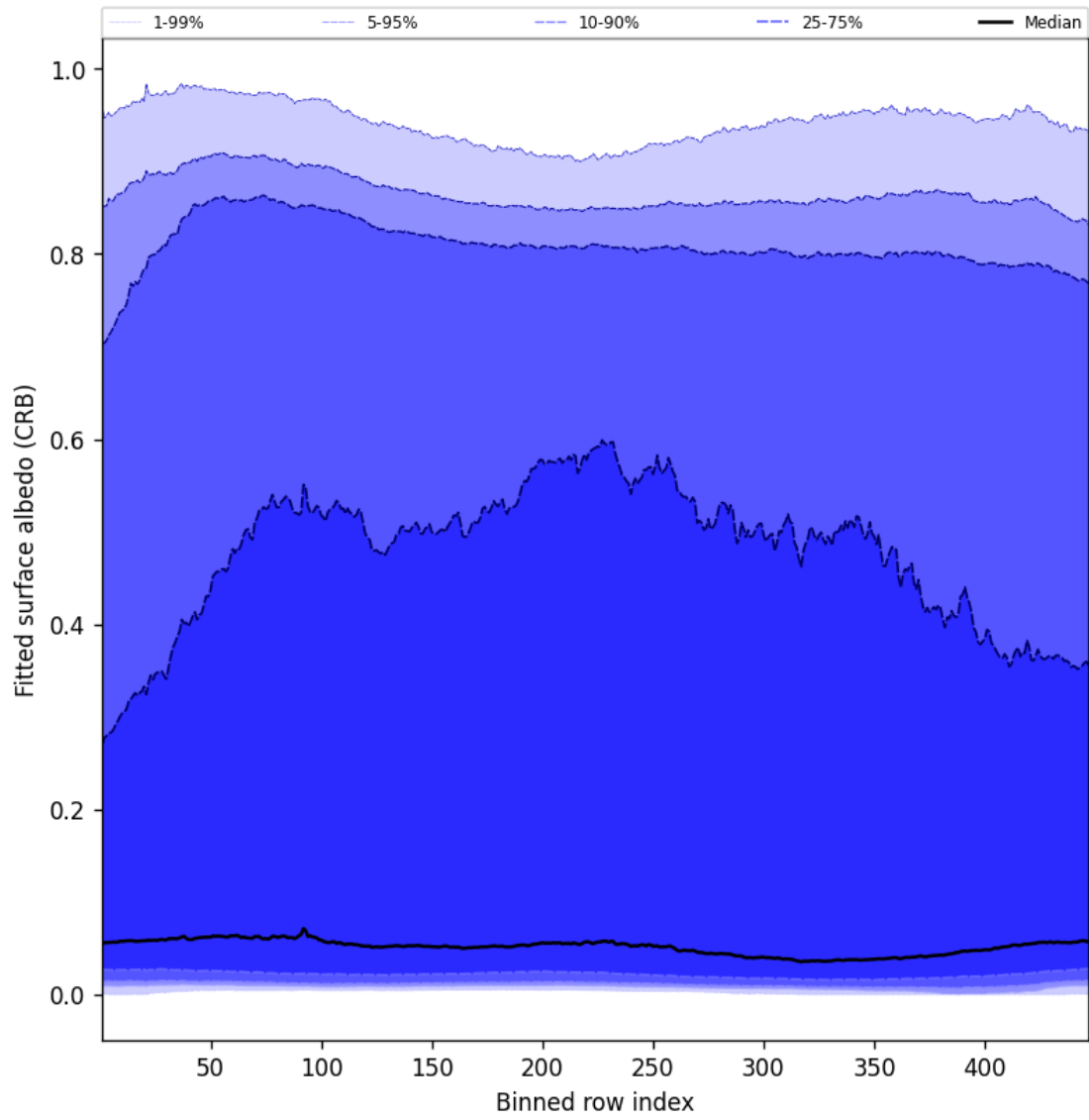


Figure 60: Along track statistics of “Fitted surface albedo (CRB)” for 2025-05-13 to 2025-05-13

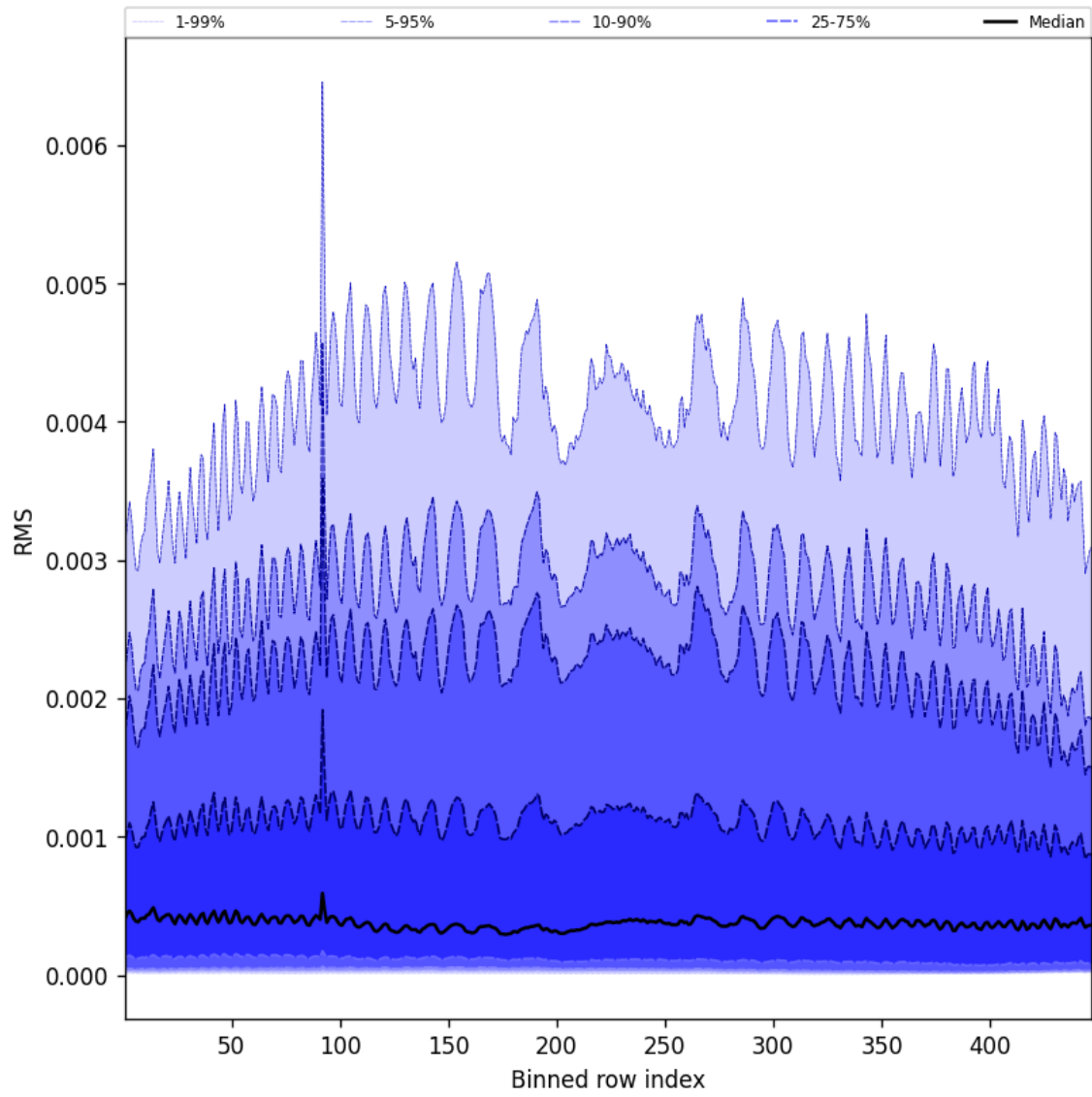


Figure 61: Along track statistics of “RMS” for 2025-05-13 to 2025-05-13

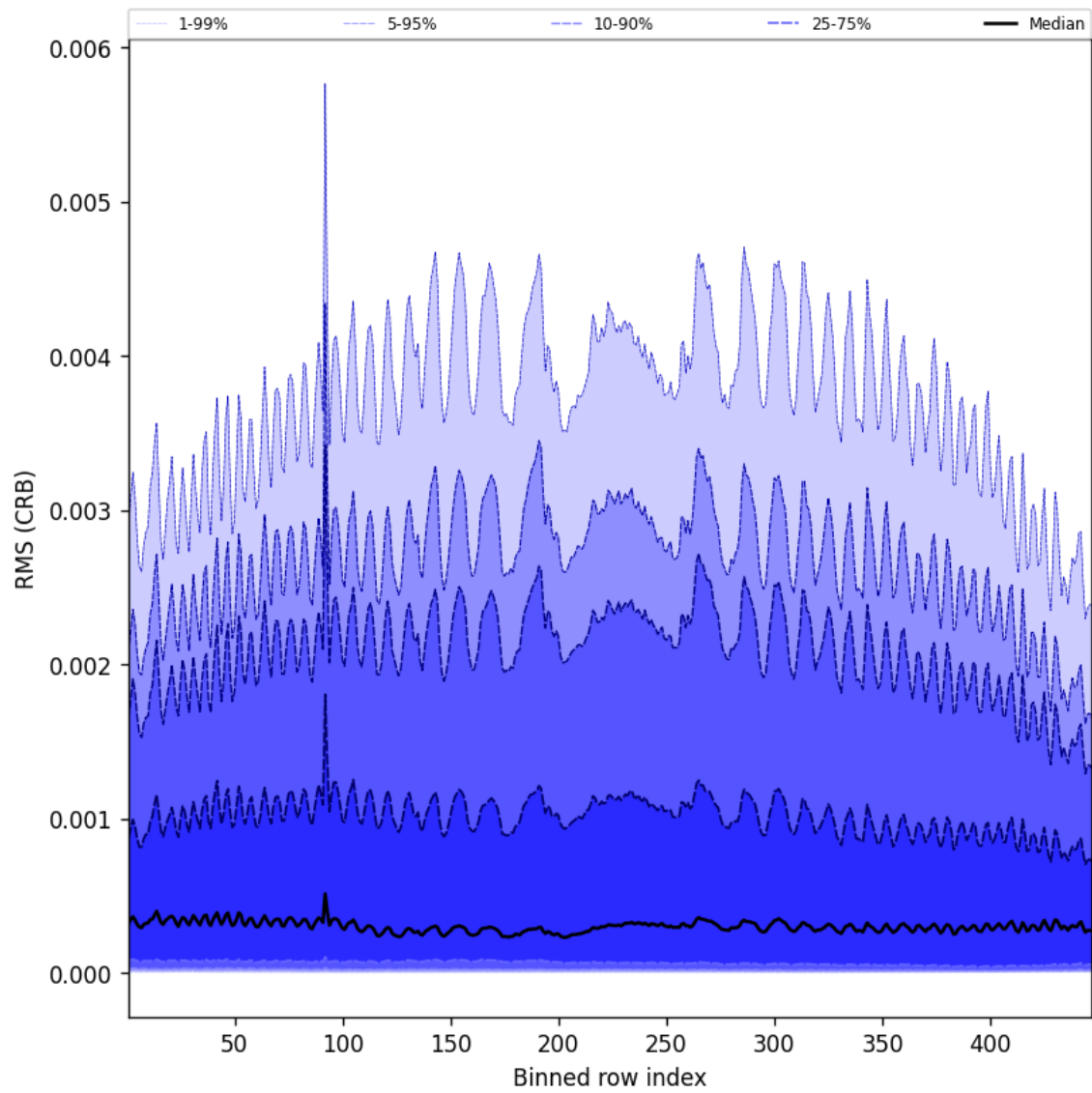


Figure 62: Along track statistics of “RMS (CRB)” for 2025-05-13 to 2025-05-13

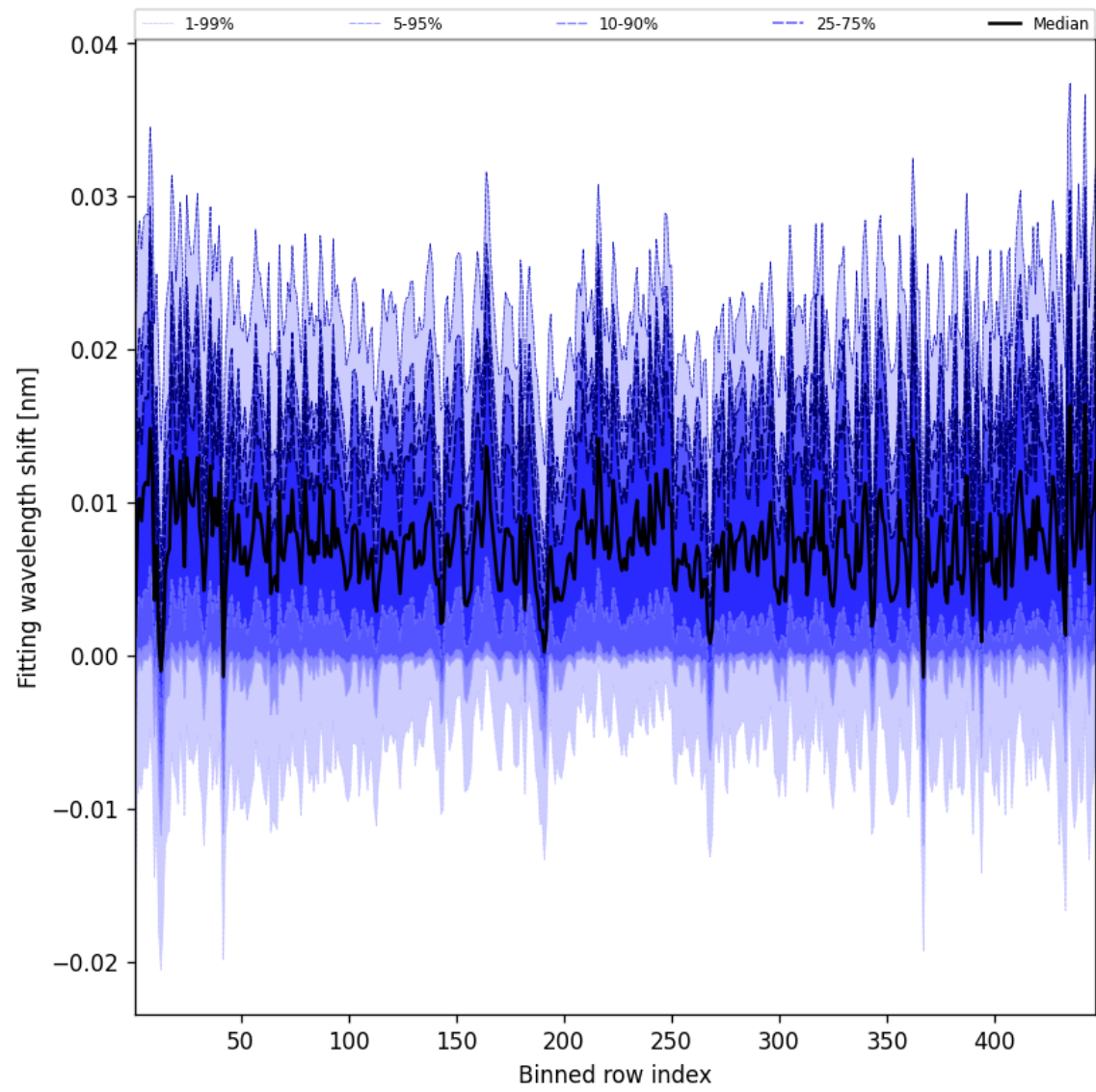


Figure 63: Along track statistics of “Fitting wavelength shift” for 2025-05-13 to 2025-05-13

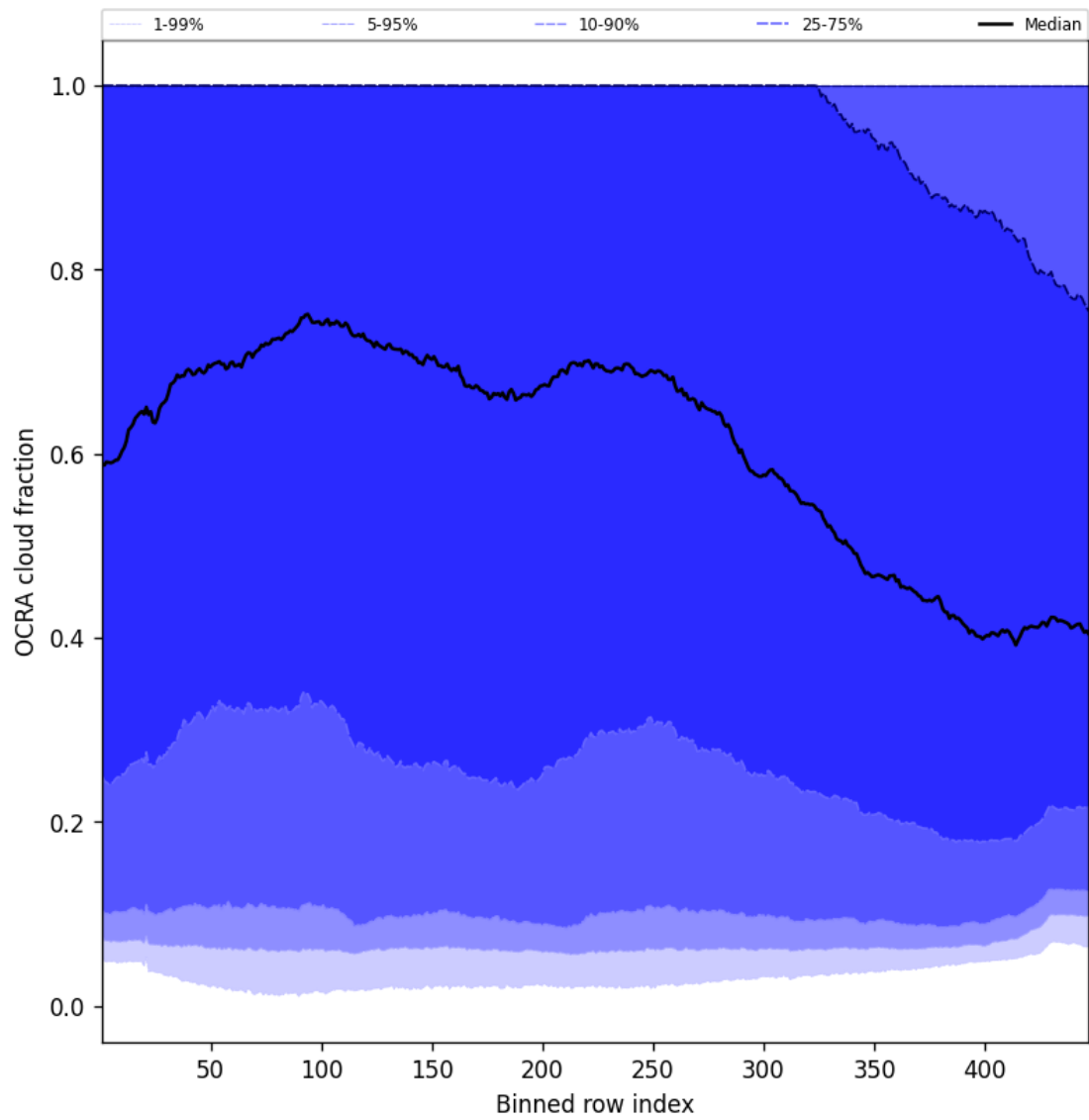


Figure 64: Along track statistics of “OCRA cloud fraction” for 2025-05-13 to 2025-05-13

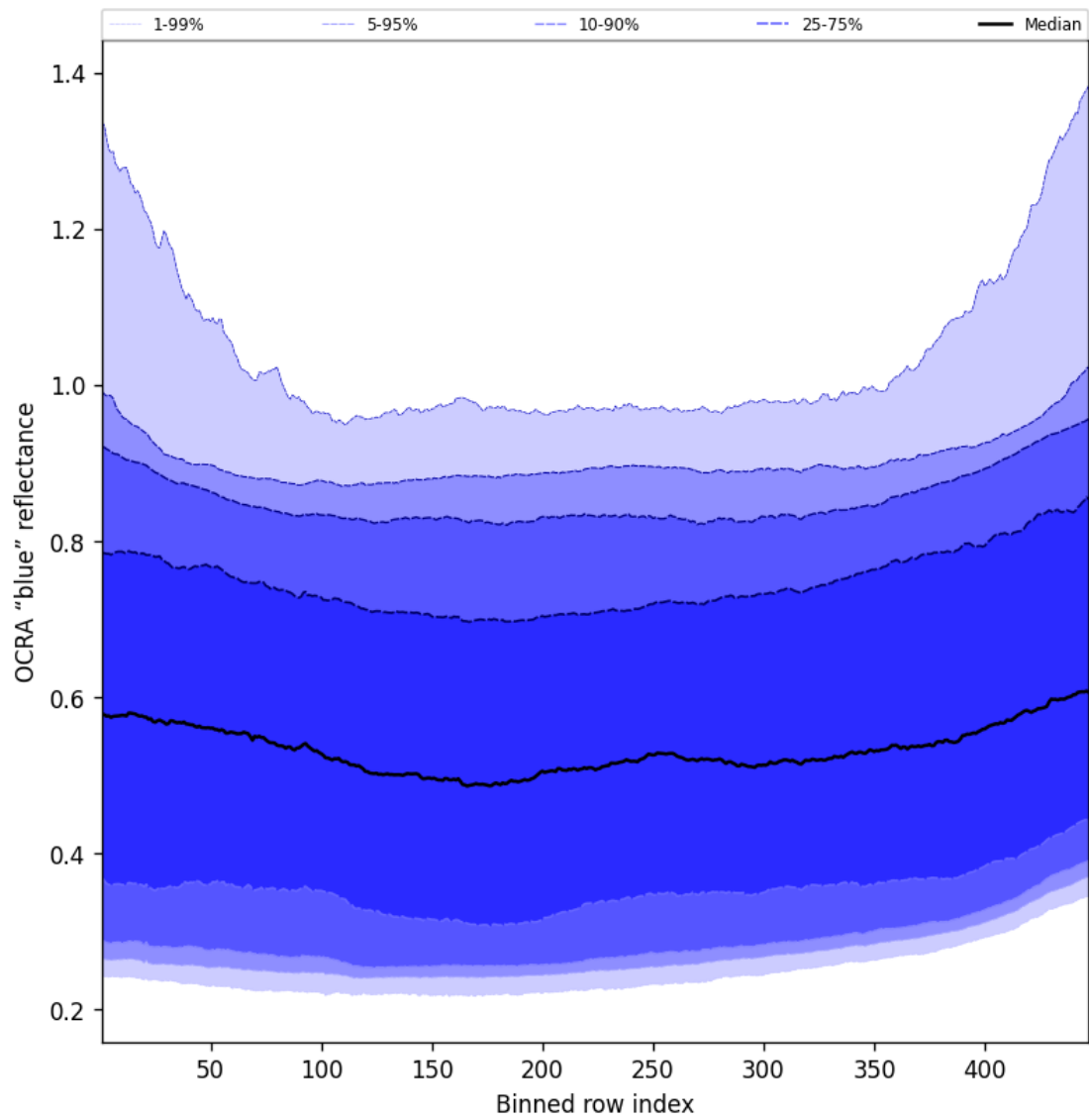


Figure 65: Along track statistics of “OCRA “blue” reflectance” for 2025-05-13 to 2025-05-13

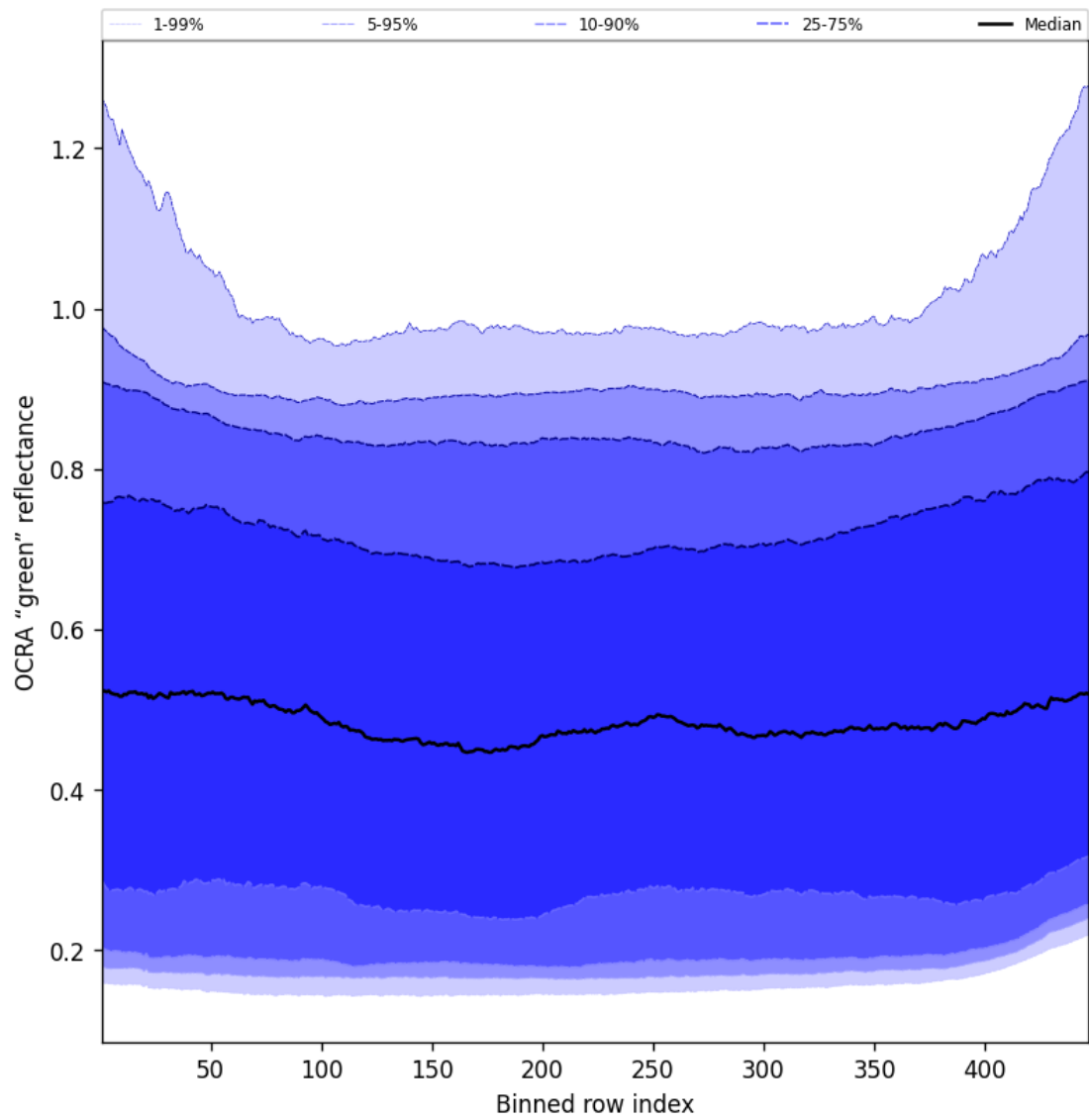


Figure 66: Along track statistics of “OCRA “green” reflectance” for 2025-05-13 to 2025-05-13

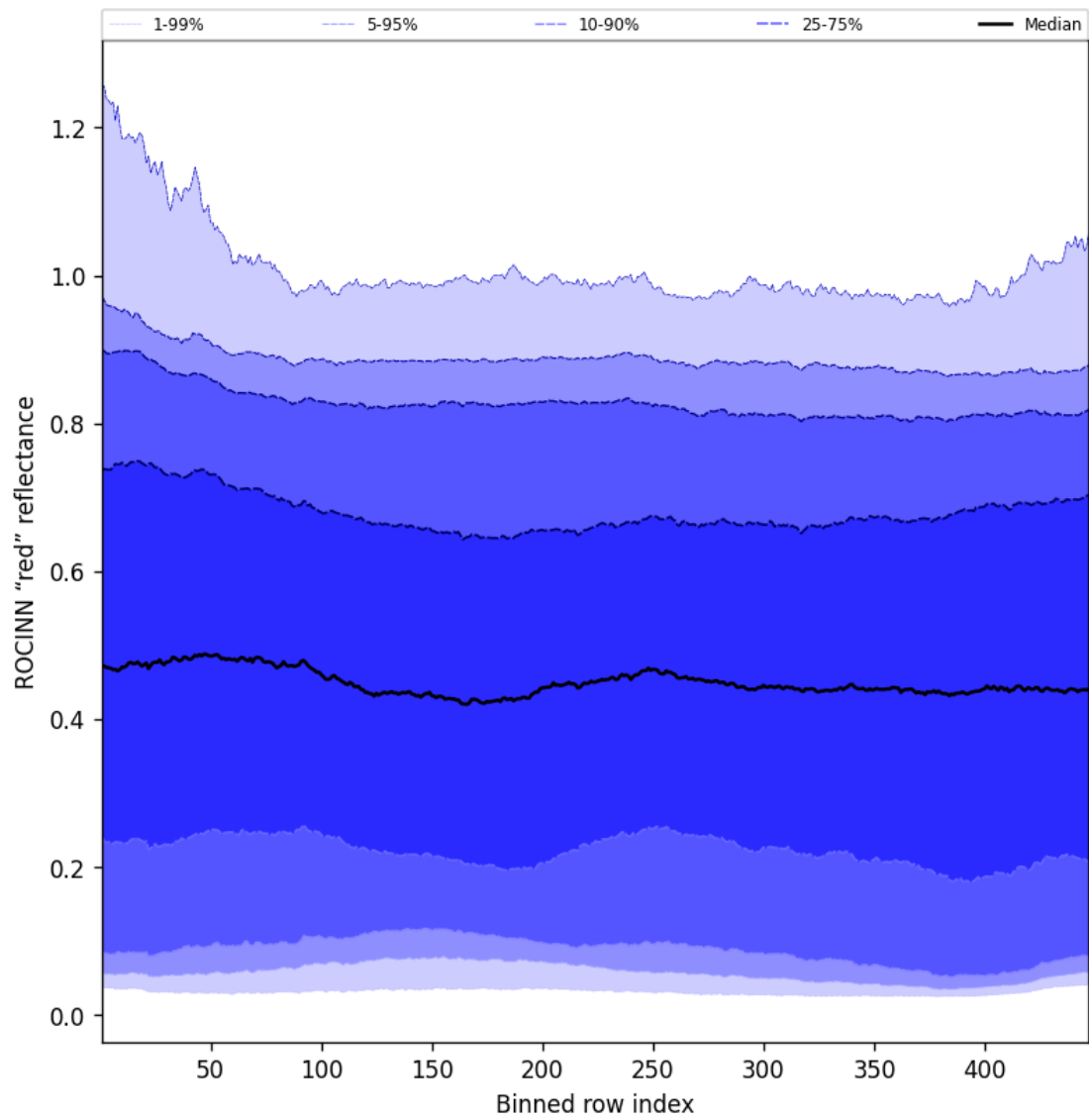


Figure 67: Along track statistics of "ROCINN "red" reflectance" for 2025-05-13 to 2025-05-13

10 Coincidence density

To investigate the relation between parameters scatter density plots are produced. These include some ‘hidden’ parameters, latitude and the solar- and viewing geometries, in addition to all configured parameters. All combinations of pairs of parameters are included *once*, in one direction alone.

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