

PyCAMA report generated by tropl2-proc

tropl2-proc

2025-04-23 (08:15)

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 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]	0.597 ± 0.386	17892390	5.000×10^{-3}	0.730	0.750	0.0	1.000
cloud fraction [1]	0.557 ± 0.340	17892390	0.995	0.701	0.533	6.102×10^{-3}	1.000
cloud top height [m]	$(0.374 \pm 0.259) \times 10^4$	17892390	1.575×10^3	3.497×10^3	3.153×10^3	0.0	2.000×10^4
cloud optical thickness [1]	18.0 ± 31.4	17892390	5.13	10.4	9.12	1.000	250
cloud fraction crb [1]	0.557 ± 0.340	17892390	0.995	0.700	0.532	8.183×10^{-3}	1.000
cloud height crb [m]	$(0.288 \pm 0.226) \times 10^4$	17892390	75.0	3.033×10^3	2.389×10^3	0.0	2.000×10^4
cloud albedo crb [1]	0.592 ± 0.211	17892390	0.995	0.271	0.572	0.0	1.000
surface albedo fitted [1]	0.262 ± 0.326	17892390	2.500×10^{-2}	0.419	5.847×10^{-2}	0.0	1.000
surface albedo fitted crb [1]	0.250 ± 0.314	17892390	1.500×10^{-2}	0.443	4.615×10^{-2}	0.0	1.000
fitted root mean square [1]	$(6.903 \pm 11.028) \times 10^{-4}$	17892390	5.000×10^{-5}	8.179×10^{-4}	3.706×10^{-4}	1.202×10^{-6}	0.645
fitted root mean square crb [1]	$(6.179 \pm 9.521) \times 10^{-4}$	17892390	5.000×10^{-5}	7.713×10^{-4}	2.882×10^{-4}	9.242×10^{-7}	0.768
wavelength shift [nm]	$(7.228 \pm 6.801) \times 10^{-3}$	17892390	3.000×10^{-4}	9.635×10^{-3}	6.562×10^{-3}	-4.740×10^{-2}	0.232
cloud fraction apriori [1]	0.569 ± 0.345	17892390	0.995	0.744	0.557	0.0	1.000
reflectance blue ocra [1]	0.565 ± 0.229	17892390	0.265	0.388	0.541	0.128	1.94
reflectance green ocra [1]	0.515 ± 0.256	17892390	0.175	0.458	0.496	7.989×10^{-2}	2.44
reflectance continuum aband [1]	0.470 ± 0.281	17892390	4.500×10^{-2}	0.467	0.463	1.141×10^{-2}	7.43

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	0.210	0.940	1.000	1.000	1.000	1.000
cloud fraction [1]	2.654×10^{-2}	6.874×10^{-2}	0.106	0.154	0.240	0.940	1.000	1.000	1.000	1.000
cloud top height [m]	181	606	975	1.309×10^3	1.715×10^3	5.212×10^3	6.432×10^3	7.494×10^3	8.855×10^3	1.121×10^4
cloud optical thickness [1]	1.10	2.90	3.99	4.80	5.66	16.0	24.0	35.4	59.9	214
cloud fraction crb [1]	2.607×10^{-2}	6.777×10^{-2}	0.105	0.153	0.239	0.939	1.000	1.000	1.000	1.000
cloud height crb [m]	0.0	55.4	404	723	1.100×10^3	4.134×10^3	5.247×10^3	6.217×10^3	7.368×10^3	9.339×10^3
cloud albedo crb [1]	2.793×10^{-3}	0.239	0.354	0.415	0.463	0.734	0.822	0.891	0.968	1.000
surface albedo fitted [1]	0.0	1.023×10^{-2}	1.538×10^{-2}	2.009×10^{-2}	2.712×10^{-2}	0.446	0.768	0.843	0.914	0.990
surface albedo fitted crb [1]	7.040×10^{-4}	7.335×10^{-3}	1.113×10^{-2}	1.484×10^{-2}	2.060×10^{-2}	0.464	0.744	0.802	0.853	0.924
fitted root mean square [1]	1.384×10^{-5}	2.779×10^{-5}	4.458×10^{-5}	6.983×10^{-5}	1.194×10^{-4}	9.373×10^{-4}	1.357×10^{-3}	1.796×10^{-3}	2.387×10^{-3}	3.630×10^{-3}
fitted root mean square crb [1]	8.154×10^{-6}	1.762×10^{-5}	2.906×10^{-5}	4.499×10^{-5}	7.809×10^{-5}	8.493×10^{-4}	1.280×10^{-3}	1.723×10^{-3}	2.320×10^{-3}	3.488×10^{-3}
wavelength shift [nm]	-8.268×10^{-3}	-1.353×10^{-3}	-9.735×10^{-5}	6.934×10^{-4}	2.100×10^{-3}	1.173×10^{-2}	1.413×10^{-2}	1.617×10^{-2}	1.886×10^{-2}	2.459×10^{-2}
cloud fraction apriori [1]	2.880×10^{-2}	6.558×10^{-2}	0.101	0.150	0.243	0.987	1.000	1.000	1.000	1.000
reflectance blue ocra [1]	0.231	0.257	0.282	0.312	0.362	0.750	0.816	0.868	0.927	1.13
reflectance green ocra [1]	0.151	0.173	0.193	0.220	0.273	0.731	0.804	0.859	0.915	1.08
reflectance continuum aband [1]	3.018×10^{-2}	5.530×10^{-2}	8.981×10^{-2}	0.136	0.231	0.698	0.779	0.836	0.901	1.06

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]	0.538 ± 0.387	10374913	0.890	0.670	0.0	1.000	1.000×10^{-2}	0.900
cloud fraction [1]	0.545 ± 0.342	10374913	0.715	0.499	6.102×10^{-3}	1.000	0.229	0.944
cloud top height [m]	$(0.353 \pm 0.256) \times 10^4$	10374913	3.335×10^3	2.971×10^3	0.0	2.000×10^4	1.564×10^3	4.899×10^3
cloud optical thickness [1]	13.6 ± 24.2	10374913	7.13	7.88	1.000	250	5.14	12.3
cloud fraction crb [1]	0.545 ± 0.342	10374913	0.715	0.500	8.378×10^{-3}	1.000	0.229	0.944
cloud height crb [m]	$(0.257 \pm 0.218) \times 10^4$	10374913	2.842×10^3	2.121×10^3	0.0	2.000×10^4	855	3.696×10^3
cloud albedo crb [1]	0.610 ± 0.232	10374913	0.328	0.599	0.0	1.000	0.462	0.790
surface albedo fitted [1]	0.383 ± 0.359	10374913	0.741	0.246	0.0	1.000	3.727×10^{-2}	0.778
surface albedo fitted crb [1]	0.369 ± 0.344	10374913	0.720	0.244	0.0	1.000	3.058×10^{-2}	0.750
fitted root mean square [1]	$(8.935 \pm 13.379) \times 10^{-4}$	10374913	1.099×10^{-3}	5.729×10^{-4}	1.558×10^{-6}	0.645	1.751×10^{-4}	1.274×10^{-3}
fitted root mean square crb [1]	$(7.988 \pm 11.413) \times 10^{-4}$	10374913	1.060×10^{-3}	4.515×10^{-4}	1.147×10^{-6}	0.768	1.215×10^{-4}	1.181×10^{-3}
wavelength shift [nm]	$(8.436 \pm 6.827) \times 10^{-3}$	10374913	9.761×10^{-3}	8.162×10^{-3}	-4.740×10^{-2}	0.232	3.340×10^{-3}	1.310×10^{-2}
cloud fraction apriori [1]	0.564 ± 0.345	10374913	0.760	0.540	0.0	1.000	0.240	1.000
reflectance blue ocr [1]	0.598 ± 0.244	10374913	0.435	0.618	0.128	1.92	0.361	0.795
reflectance green ocr [1]	0.556 ± 0.270	10374913	0.506	0.593	7.989×10^{-2}	1.99	0.280	0.786
reflectance continuum aband [1]	0.524 ± 0.285	10374913	0.481	0.558	1.380×10^{-2}	4.10	0.278	0.759

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]	0.678 ± 0.371	7517477	0.600	0.900	0.0	1.000	0.400	1.000
cloud fraction [1]	0.575 ± 0.336	7517477	0.679	0.580	7.896×10^{-3}	1.000	0.258	0.937
cloud top height [m]	$(0.403 \pm 0.261) \times 10^4$	7517477	3.761×10^3	3.416×10^3	0.0	2.000×10^4	1.906×10^3	5.667×10^3
cloud optical thickness [1]	24.2 ± 38.5	7517477	15.7	11.6	1.000	250	7.15	22.8
cloud fraction crb [1]	0.573 ± 0.336	7517477	0.678	0.577	8.183×10^{-3}	1.000	0.256	0.934
cloud height crb [m]	$(0.330 \pm 0.230) \times 10^4$	7517477	3.372×10^3	2.765×10^3	0.0	2.000×10^4	1.397×10^3	4.769×10^3
cloud albedo crb [1]	0.567 ± 0.174	7517477	0.201	0.551	0.0	1.000	0.465	0.666
surface albedo fitted [1]	$(9.574 \pm 16.306) \times 10^{-2}$	7517477	4.647×10^{-2}	3.563×10^{-2}	0.0	1.000	2.084×10^{-2}	6.731×10^{-2}
surface albedo fitted crb [1]	$(8.709 \pm 16.046) \times 10^{-2}$	7517477	3.720×10^{-2}	2.658×10^{-2}	0.0	1.000	1.480×10^{-2}	5.200×10^{-2}
fitted root mean square [1]	$(4.099 \pm 5.373) \times 10^{-4}$	7517477	4.482×10^{-4}	2.181×10^{-4}	1.202×10^{-6}	0.130	8.299×10^{-5}	5.312×10^{-4}
fitted root mean square crb [1]	$(3.683 \pm 5.026) \times 10^{-4}$	7517477	4.371×10^{-4}	1.598×10^{-4}	9.242×10^{-7}	3.583×10^{-2}	5.150×10^{-5}	4.886×10^{-4}
wavelength shift [nm]	$(5.561 \pm 6.401) \times 10^{-3}$	7517477	8.289×10^{-3}	4.554×10^{-3}	-4.634×10^{-2}	5.846×10^{-2}	1.052×10^{-3}	9.341×10^{-3}
cloud fraction apriori [1]	0.574 ± 0.344	7517477	0.719	0.580	0.0	1.000	0.247	0.966
reflectance blue oca [1]	0.520 ± 0.199	7517477	0.280	0.489	0.142	1.94	0.363	0.643
reflectance green oca [1]	0.457 ± 0.224	7517477	0.340	0.425	8.072×10^{-2}	2.44	0.267	0.607
reflectance continuum aband [1]	0.395 ± 0.257	7517477	0.384	0.371	1.141×10^{-2}	7.43	0.184	0.568

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]	0.612 ± 0.385	12748508	0.650	0.800	0.0	1.000	0.300	0.950
cloud fraction [1]	0.548 ± 0.342	12748508	0.705	0.515	6.102×10^{-3}	1.000	0.226	0.931
cloud top height [m]	$(0.362 \pm 0.255) \times 10^4$	12748508	3.385×10^3	2.966×10^3	0.0	2.000×10^4	1.646×10^3	5.031×10^3
cloud optical thickness [1]	19.5 ± 33.0	12748508	11.1	9.83	1.000	250	6.28	17.4
cloud fraction crb [1]	0.547 ± 0.342	12748508	0.704	0.514	8.491×10^{-3}	1.000	0.225	0.929
cloud height crb [m]	$(0.282 \pm 0.226) \times 10^4$	12748508	2.986×10^3	2.295×10^3	0.0	2.000×10^4	1.056×10^3	4.042×10^3
cloud albedo crb [1]	0.571 ± 0.194	12748508	0.236	0.549	0.0	1.000	0.455	0.691
surface albedo fitted [1]	0.178 ± 0.299	12748508	5.050×10^{-2}	3.667×10^{-2}	0.0	1.000	2.166×10^{-2}	7.216×10^{-2}
surface albedo fitted crb [1]	0.166 ± 0.287	12748508	4.127×10^{-2}	2.849×10^{-2}	0.0	1.000	1.611×10^{-2}	5.737×10^{-2}
fitted root mean square [1]	$(5.068 \pm 10.317) \times 10^{-4}$	12748508	5.463×10^{-4}	2.362×10^{-4}	1.202×10^{-6}	0.645	8.726×10^{-5}	6.336×10^{-4}
fitted root mean square crb [1]	$(4.465 \pm 9.013) \times 10^{-4}$	12748508	4.776×10^{-4}	1.824×10^{-4}	9.242×10^{-7}	0.768	6.074×10^{-5}	5.384×10^{-4}
wavelength shift [nm]	$(6.553 \pm 6.670) \times 10^{-3}$	12748508	9.069×10^{-3}	5.704×10^{-3}	-4.634×10^{-2}	0.232	1.710×10^{-3}	1.078×10^{-2}
cloud fraction apriori [1]	0.554 ± 0.347	12748508	0.738	0.528	0.0	1.000	0.225	0.963
reflectance blue ocr [1]	0.545 ± 0.213	12748508	0.357	0.518	0.148	1.91	0.359	0.716
reflectance green ocr [1]	0.487 ± 0.241	12748508	0.427	0.465	8.072×10^{-2}	1.81	0.263	0.690
reflectance continuum aband [1]	0.419 ± 0.274	12748508	0.488	0.406	1.192×10^{-2}	4.39	0.159	0.647

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]	0.601 ± 0.380	3441097	0.720	0.720	0.0	1.000	0.200	0.920
cloud fraction [1]	0.574 ± 0.337	3441097	0.695	0.567	8.013×10^{-3}	1.000	0.262	0.957
cloud top height [m]	$(0.436 \pm 0.265) \times 10^4$	3441097	3.584×10^3	3.882×10^3	0.0	2.000×10^4	2.360×10^3	5.944×10^3
cloud optical thickness [1]	13.4 ± 23.1	3441097	7.65	7.43	1.000	250	4.86	12.5
cloud fraction crb [1]	0.574 ± 0.337	3441097	0.695	0.568	8.183×10^{-3}	1.000	0.262	0.957
cloud height crb [m]	$(0.329 \pm 0.224) \times 10^4$	3441097	3.074×10^3	2.812×10^3	0.0	2.000×10^4	1.575×10^3	4.649×10^3
cloud albedo crb [1]	0.636 ± 0.230	3441097	0.316	0.636	0.0	1.000	0.498	0.814
surface albedo fitted [1]	0.444 ± 0.278	3441097	0.469	0.308	0.0	1.000	0.231	0.700
surface albedo fitted crb [1]	0.434 ± 0.262	3441097	0.470	0.309	2.554×10^{-4}	1.000	0.227	0.696
fitted root mean square [1]	$(1.127 \pm 1.068) \times 10^{-3}$	3441097	1.084×10^{-3}	8.709×10^{-4}	5.237×10^{-6}	0.199	4.709×10^{-4}	1.555×10^{-3}
fitted root mean square crb [1]	$(1.043 \pm 0.909) \times 10^{-3}$	3441097	1.095×10^{-3}	8.146×10^{-4}	2.139×10^{-6}	4.878×10^{-2}	3.884×10^{-4}	1.484×10^{-3}
wavelength shift [nm]	$(8.591 \pm 6.664) \times 10^{-3}$	3441097	9.559×10^{-3}	8.447×10^{-3}	-3.245×10^{-2}	5.588×10^{-2}	3.592×10^{-3}	1.315×10^{-2}
cloud fraction apriori [1]	0.591 ± 0.343	3441097	0.729	0.603	0.0	1.000	0.271	1.000
reflectance blue ocra [1]	0.590 ± 0.263	3441097	0.465	0.568	0.128	1.94	0.346	0.812
reflectance green ocra [1]	0.554 ± 0.284	3441097	0.526	0.541	7.989×10^{-2}	2.44	0.277	0.804
reflectance continuum aband [1]	0.577 ± 0.253	3441097	0.426	0.556	1.496×10^{-2}	7.43	0.356	0.782

3 Granule outlines

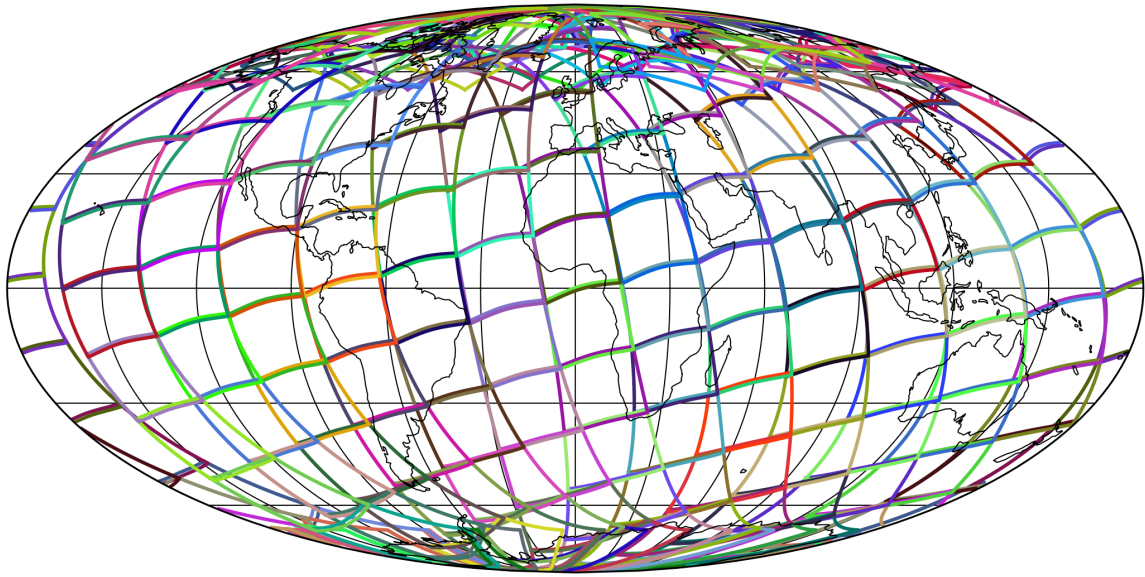


Figure 1: Outline of the granules.

4 Input data monitoring

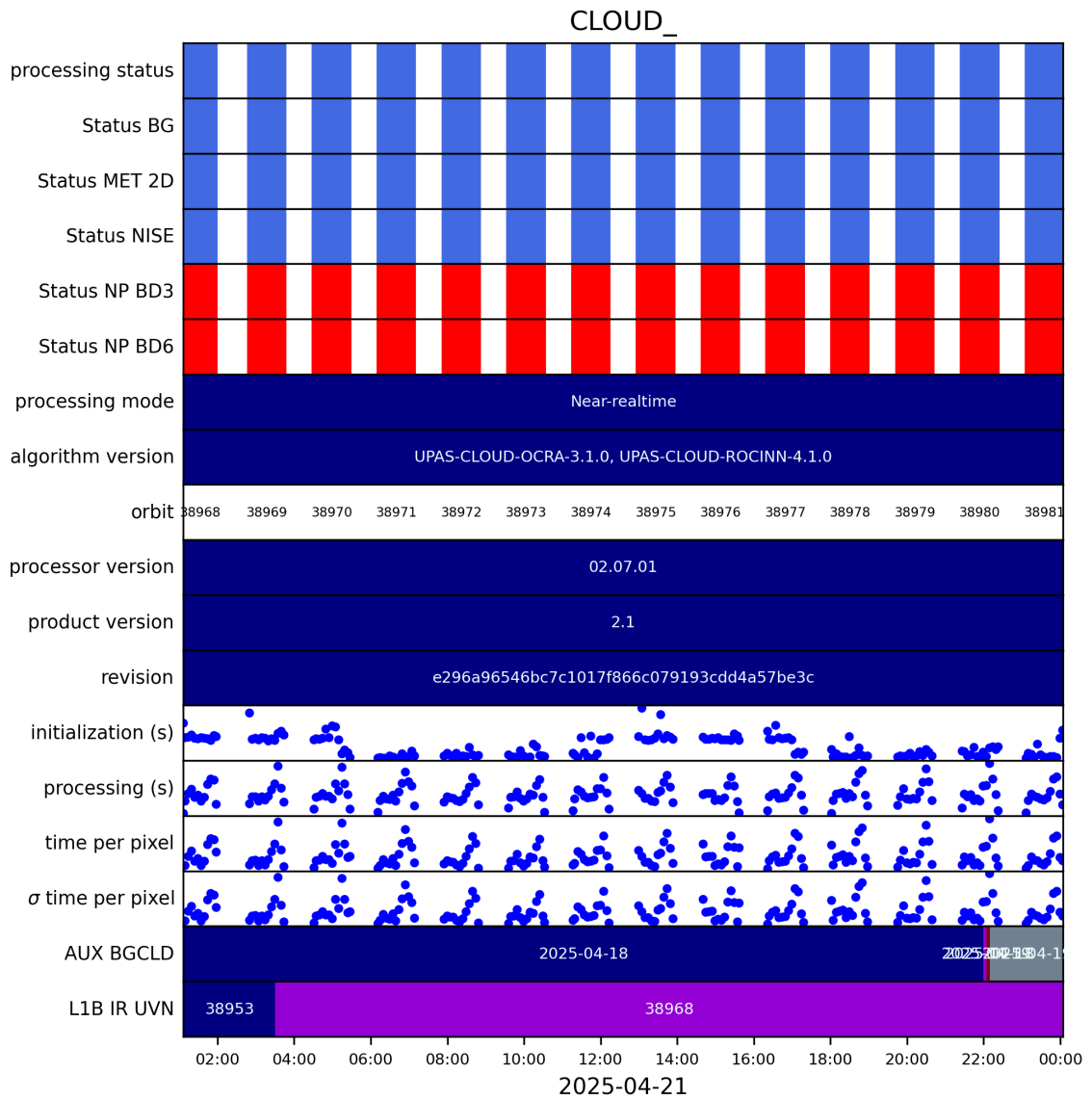


Figure 2: Input data per granule

5 Warnings and errors

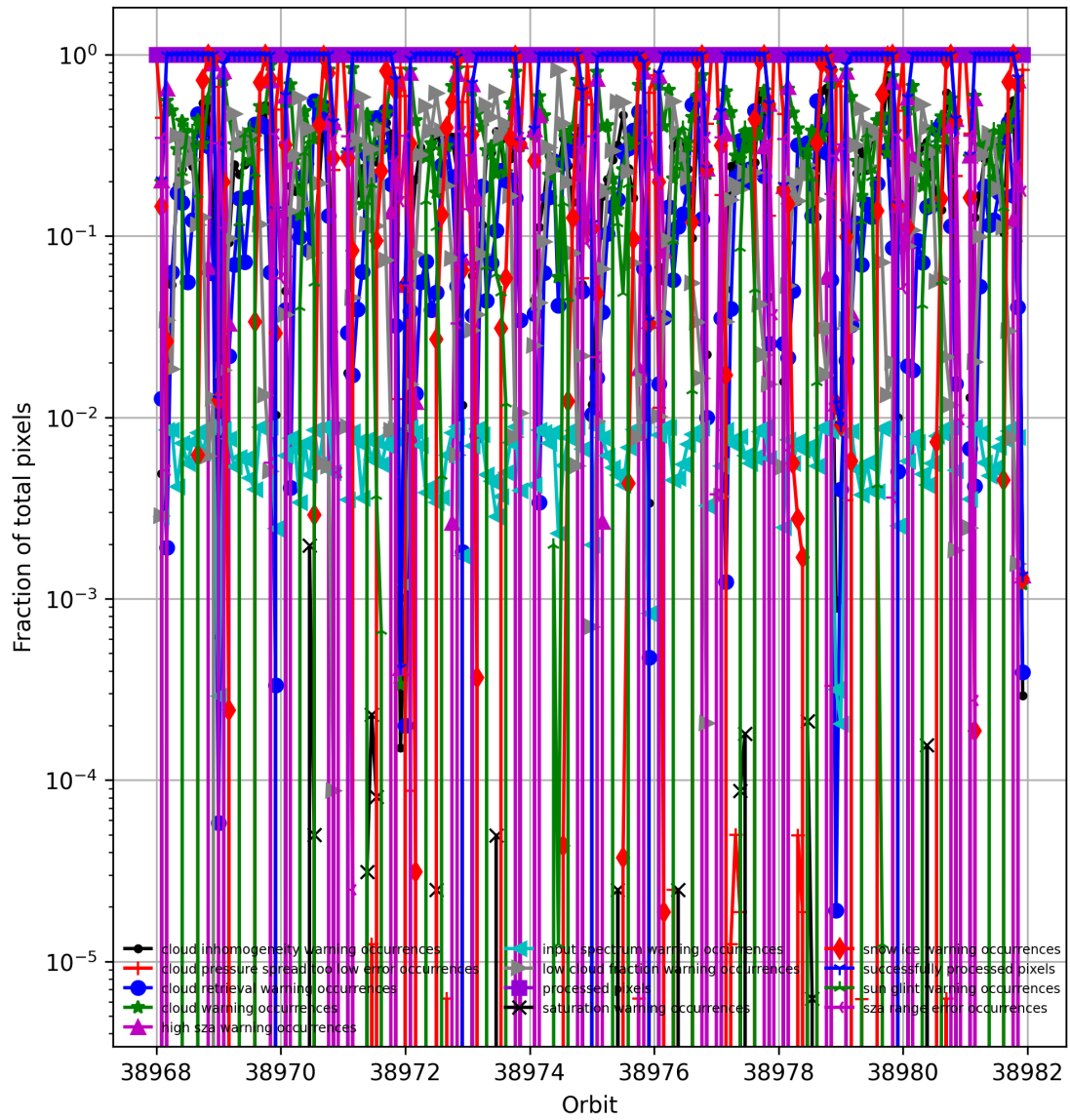


Figure 3: Fraction of pixels with specific warnings and errors during processing

6 World maps

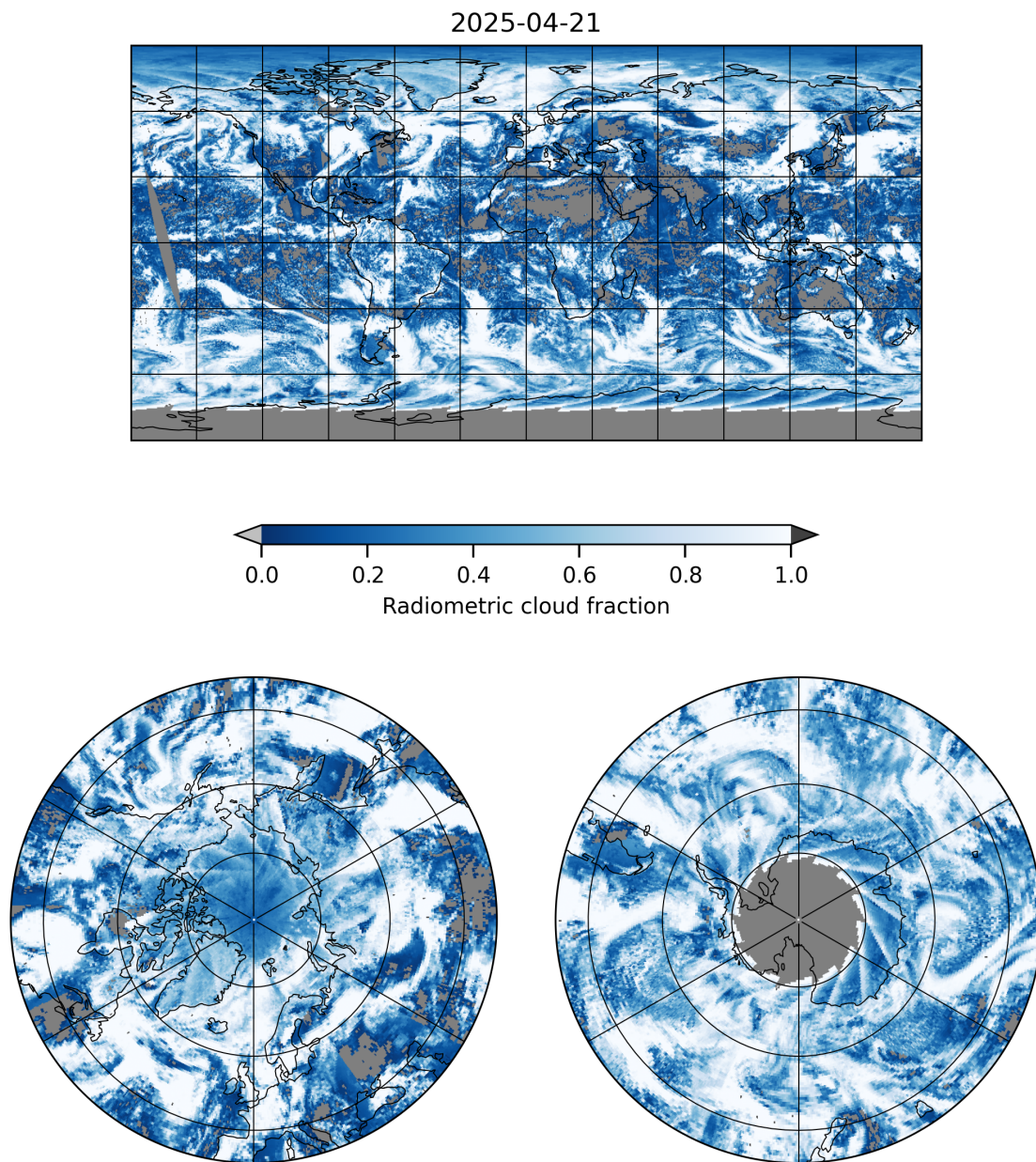


Figure 4: Map of “Radiometric cloud fraction” for 2025-04-21 to 2025-04-22

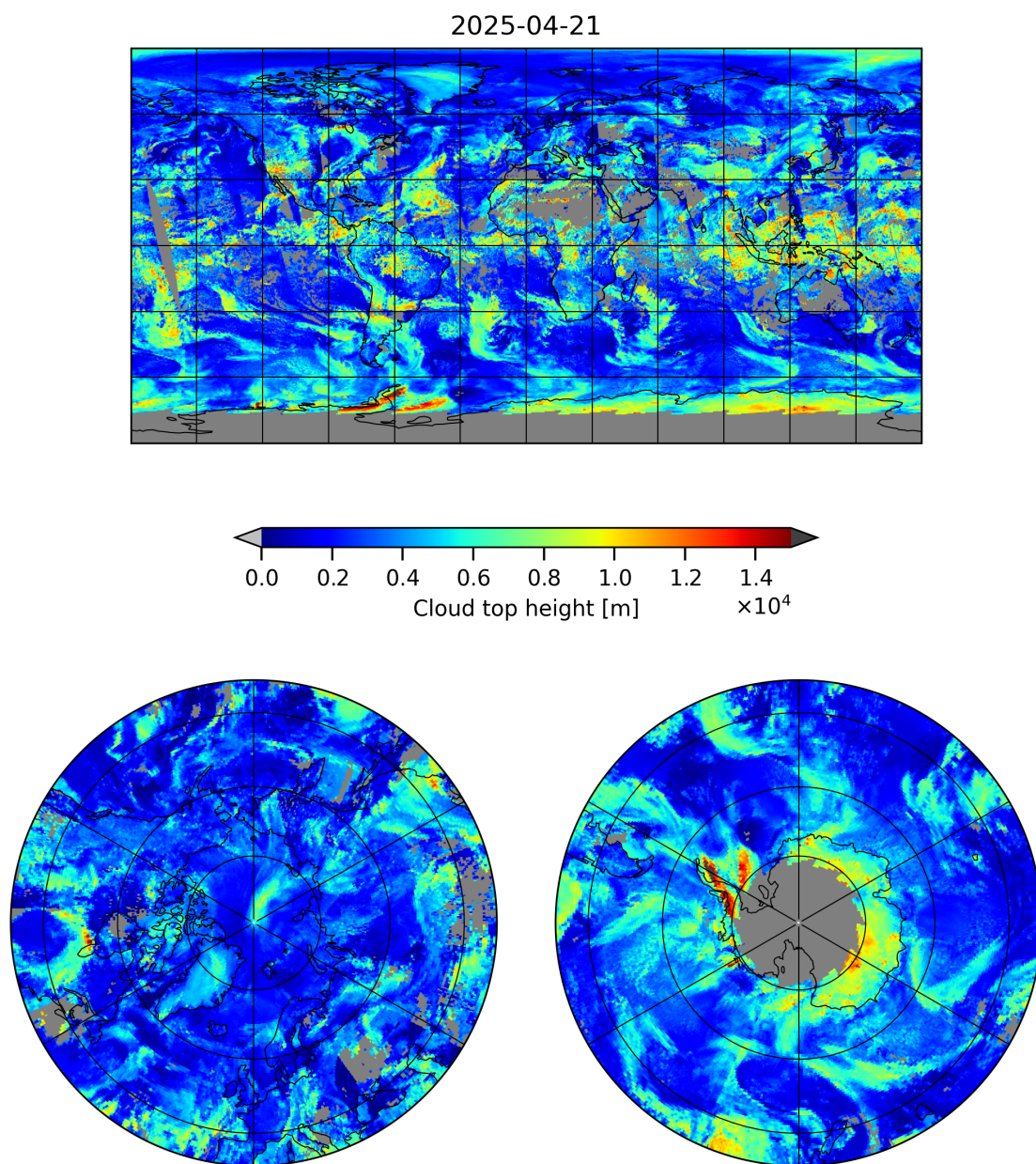


Figure 5: Map of “Cloud top height” for 2025-04-21 to 2025-04-22

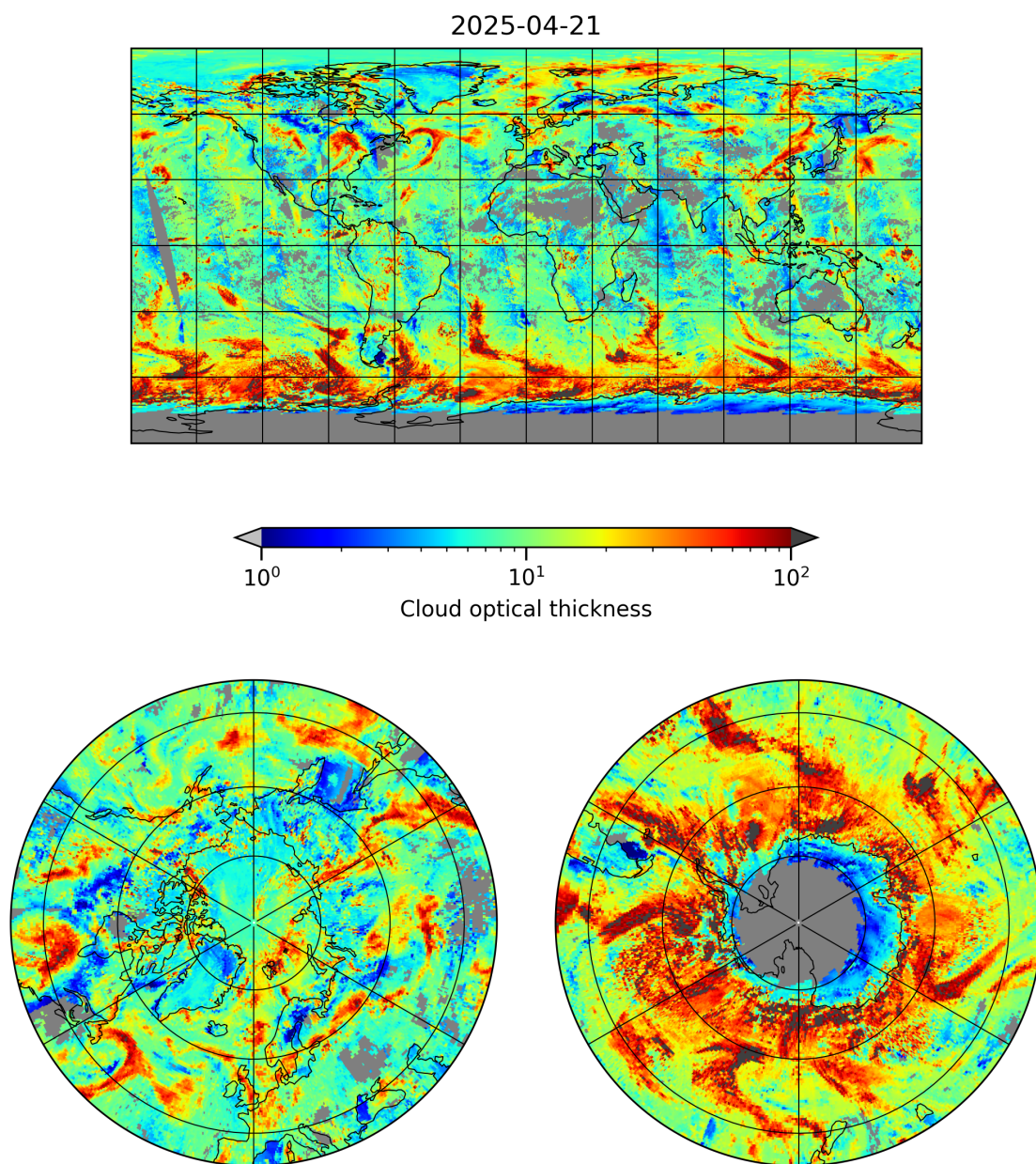


Figure 6: Map of “Cloud optical thickness” for 2025-04-21 to 2025-04-22

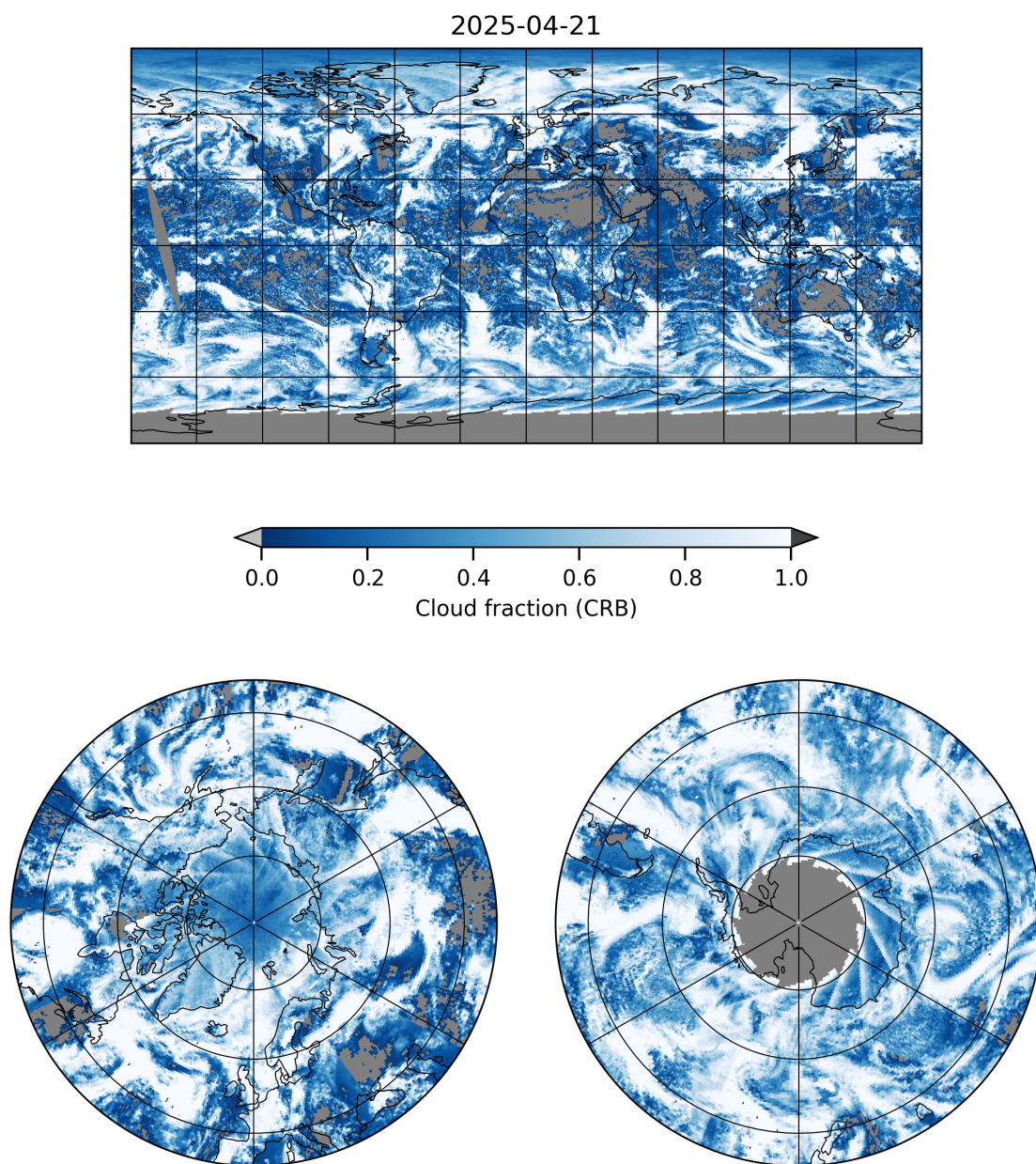


Figure 7: Map of “Cloud fraction (CRB)” for 2025-04-21 to 2025-04-22

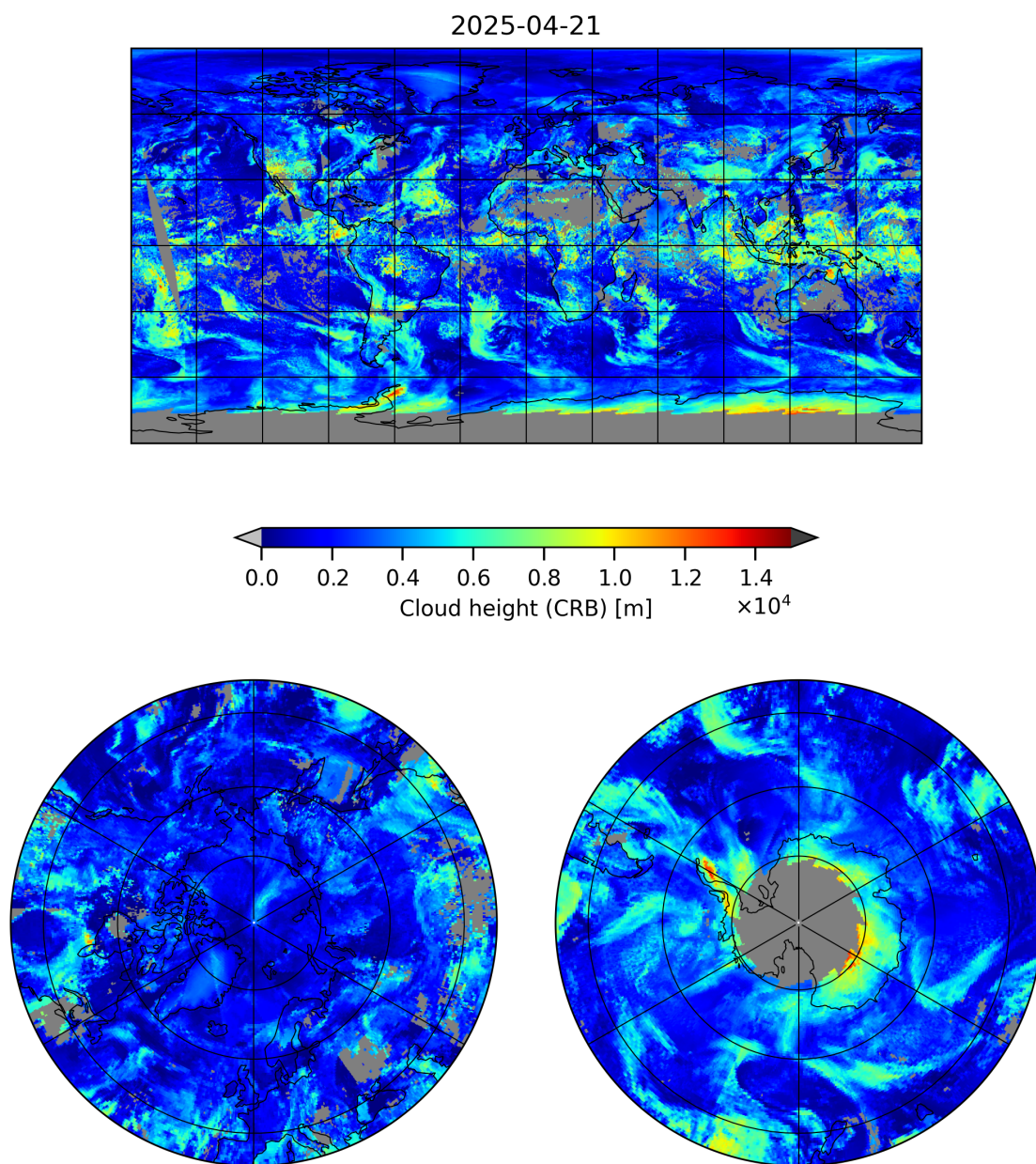


Figure 8: Map of “Cloud height (CRB)” for 2025-04-21 to 2025-04-22

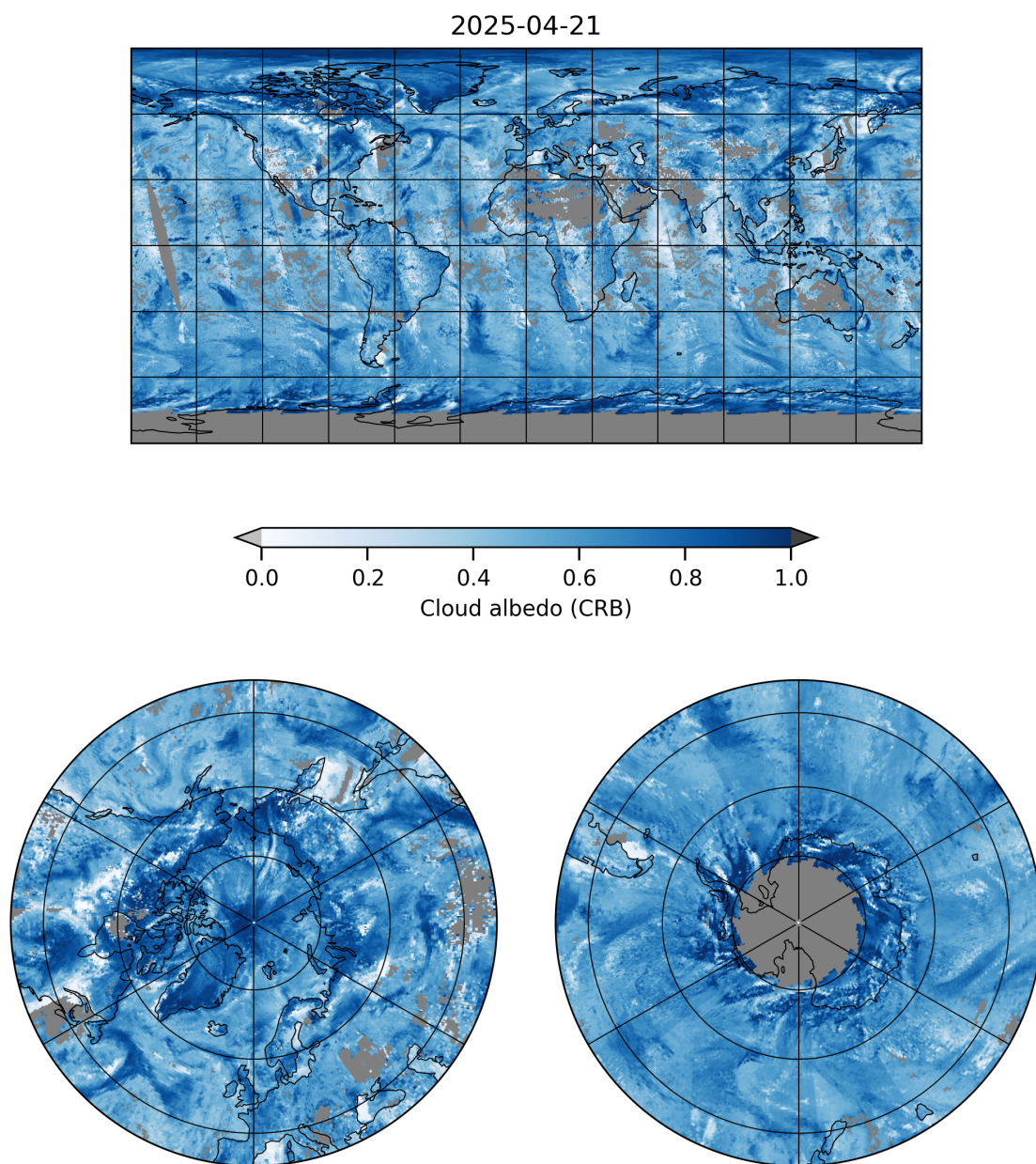


Figure 9: Map of “Cloud albedo (CRB)” for 2025-04-21 to 2025-04-22

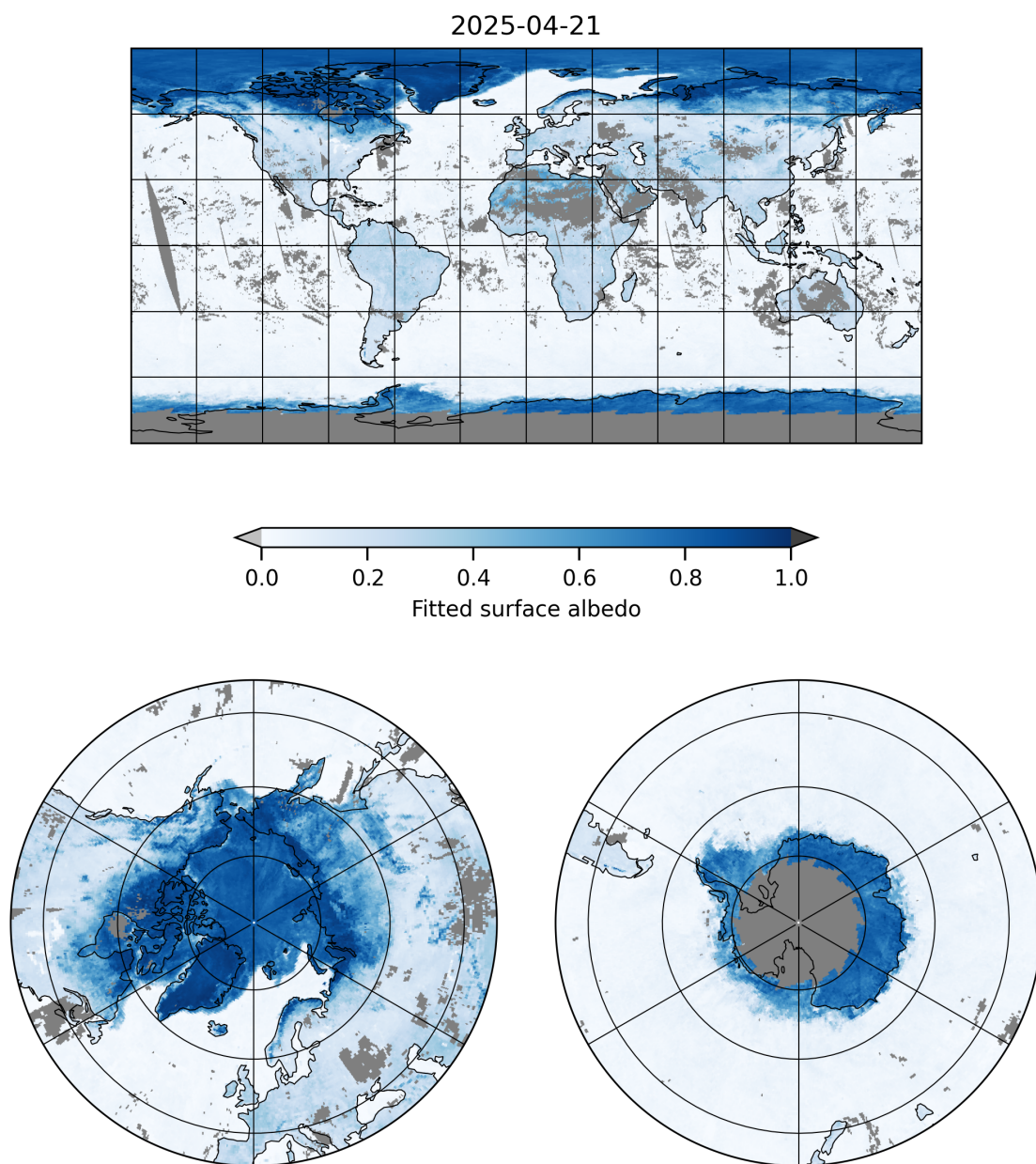


Figure 10: Map of “Fitted surface albedo” for 2025-04-21 to 2025-04-22

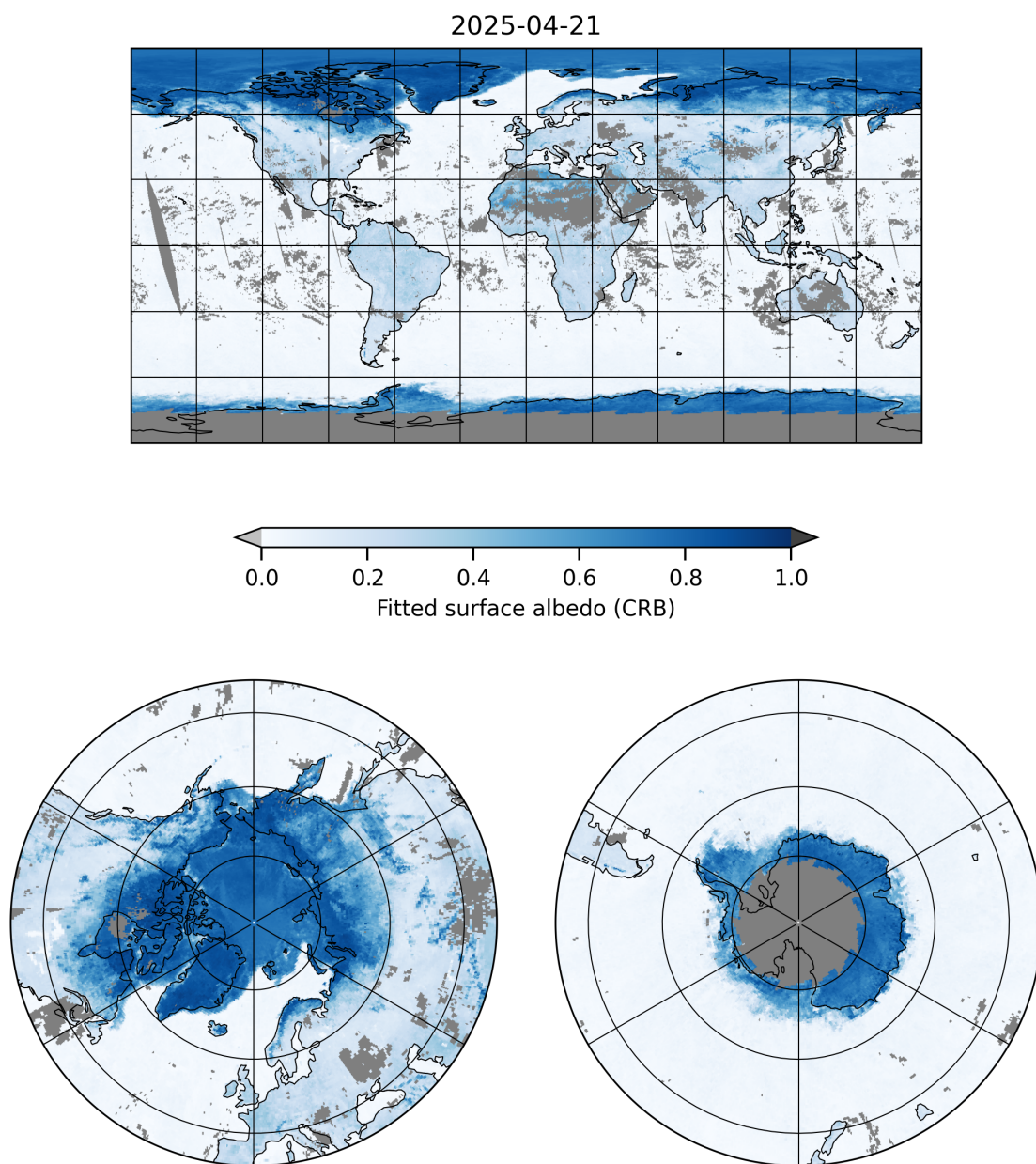


Figure 11: Map of “Fitted surface albedo (CRB)” for 2025-04-21 to 2025-04-22

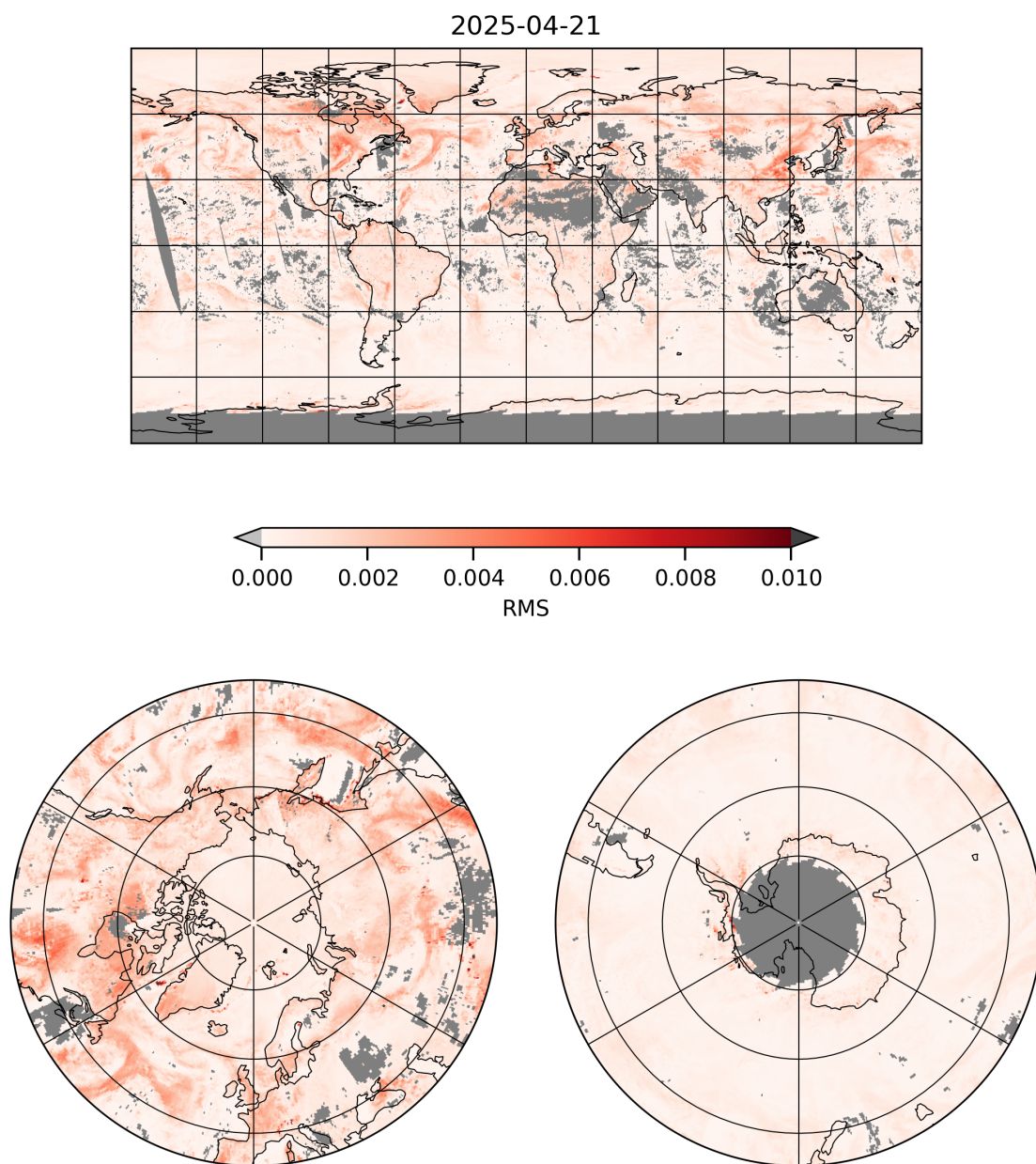


Figure 12: Map of “RMS” for 2025-04-21 to 2025-04-22

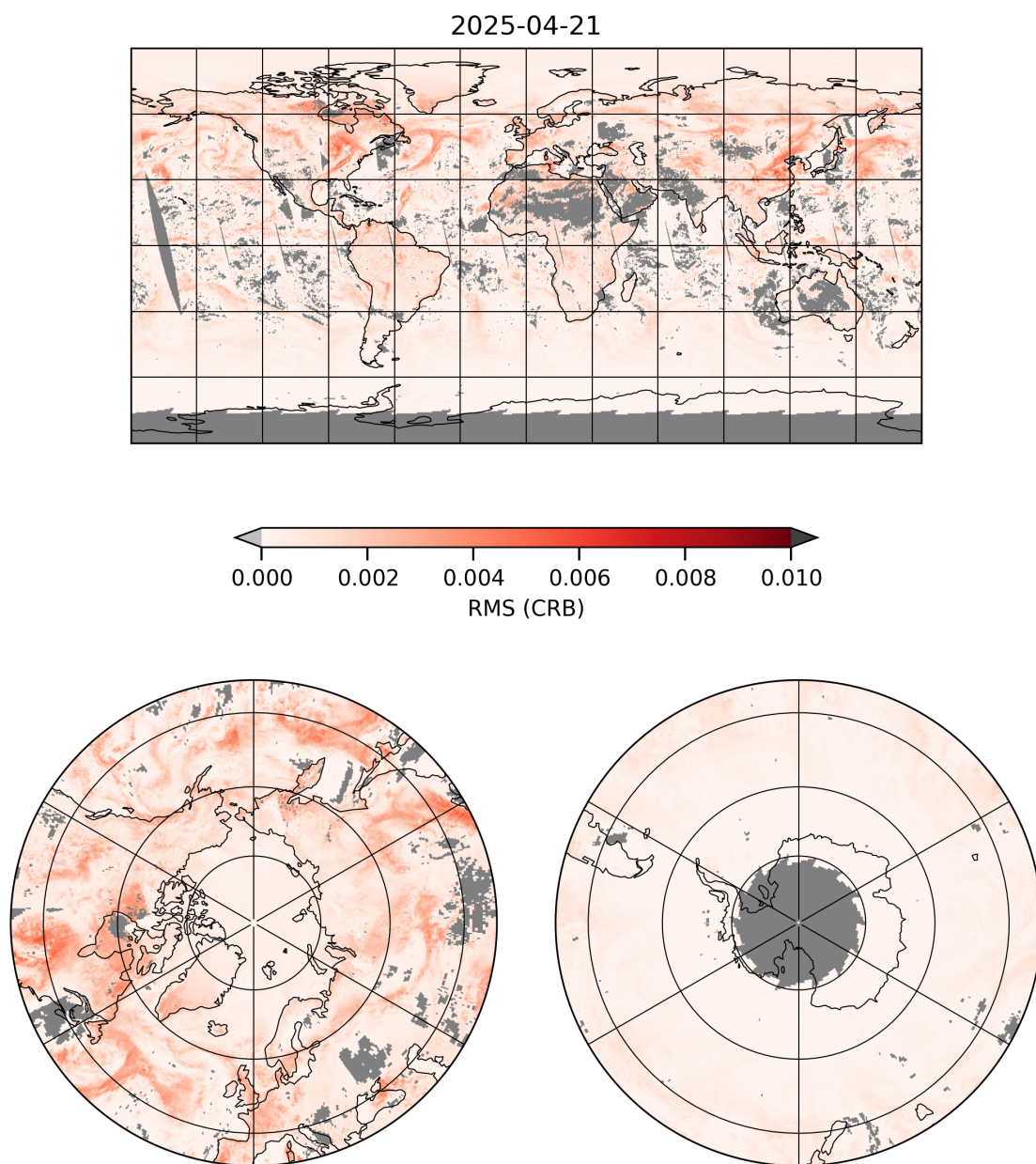


Figure 13: Map of “RMS (CRB)” for 2025-04-21 to 2025-04-22

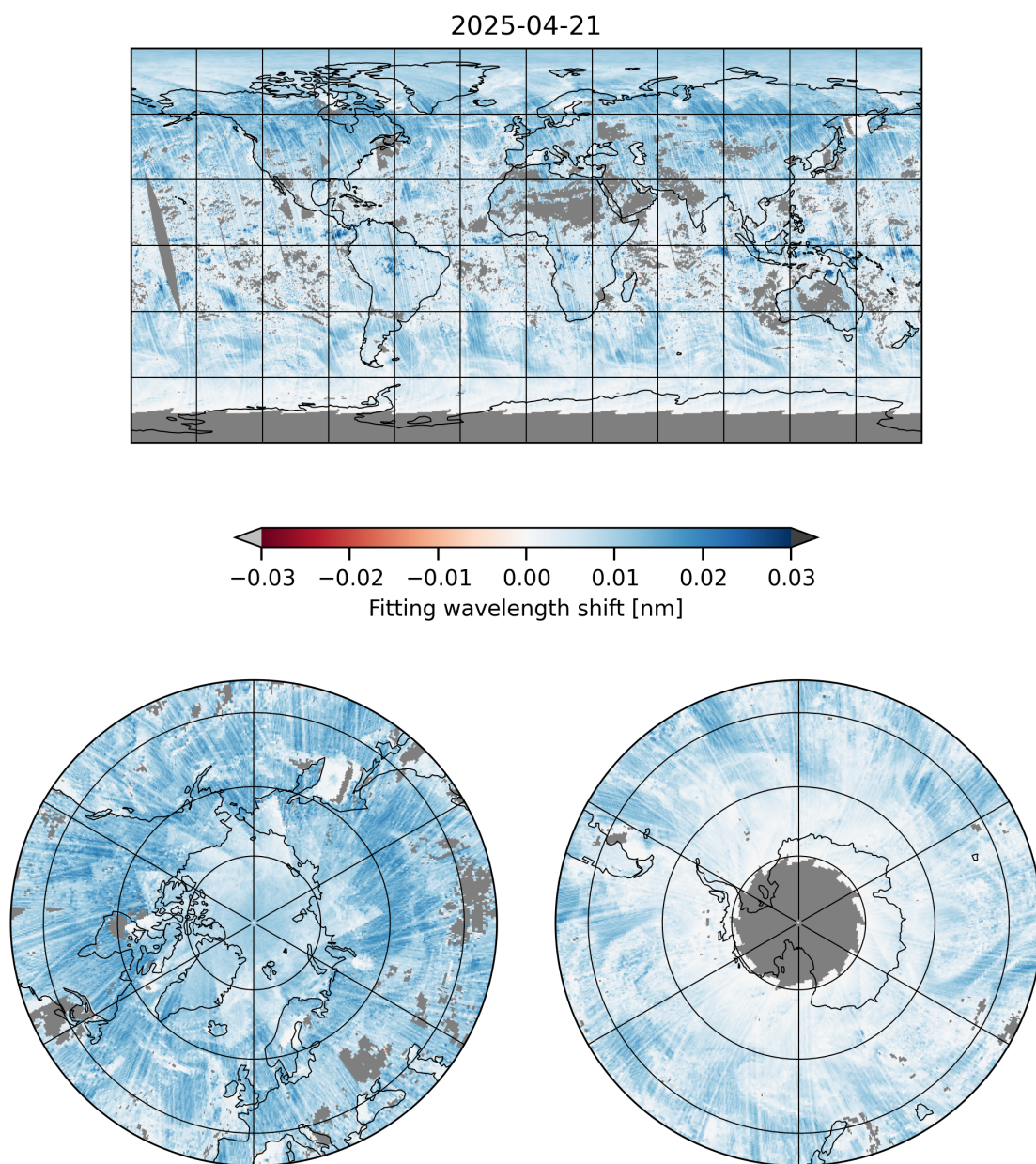


Figure 14: Map of “Fitting wavelength shift” for 2025-04-21 to 2025-04-22

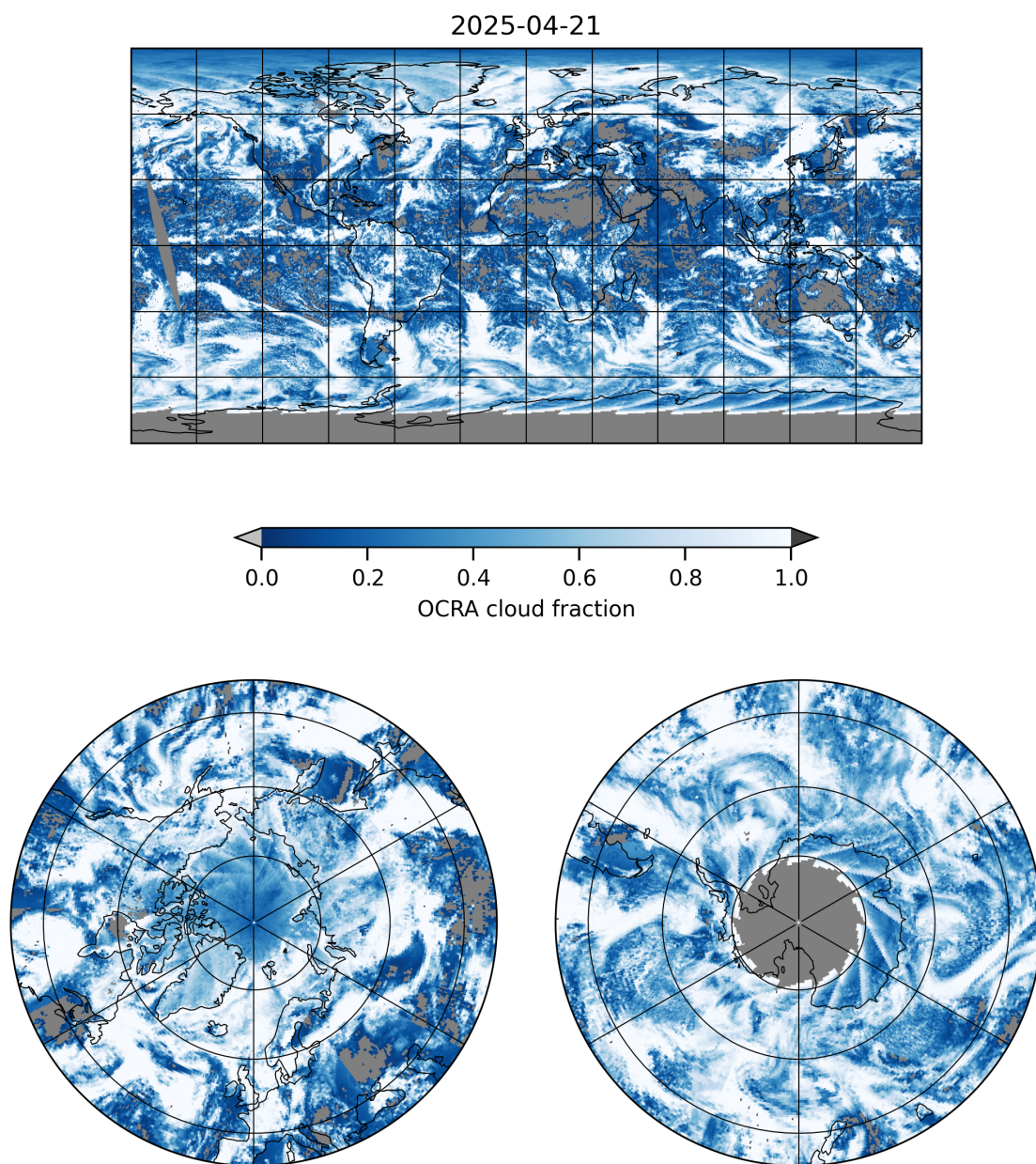


Figure 15: Map of “OCRA cloud fraction” for 2025-04-21 to 2025-04-22

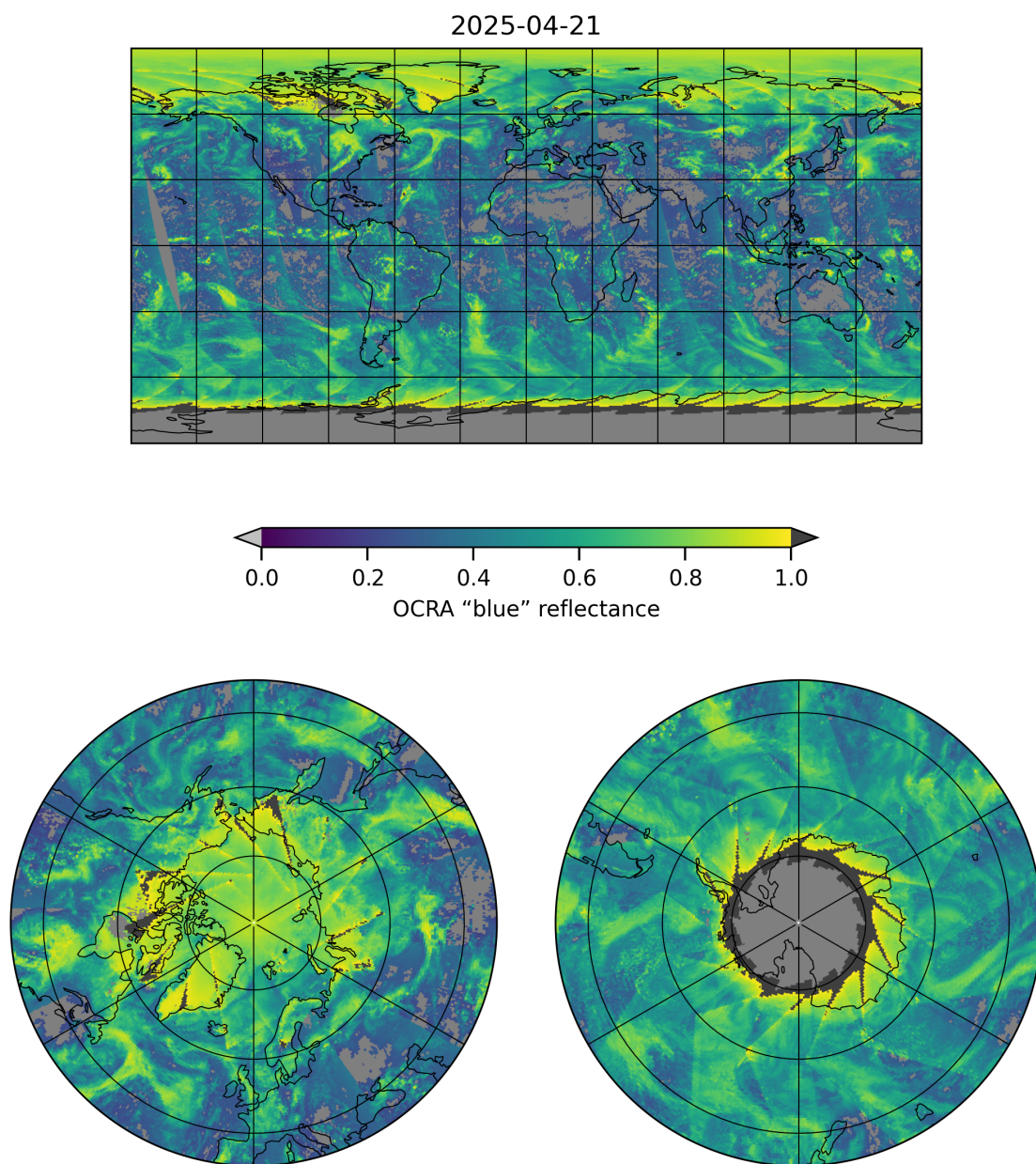


Figure 16: Map of "OCRA "blue" reflectance" for 2025-04-21 to 2025-04-22

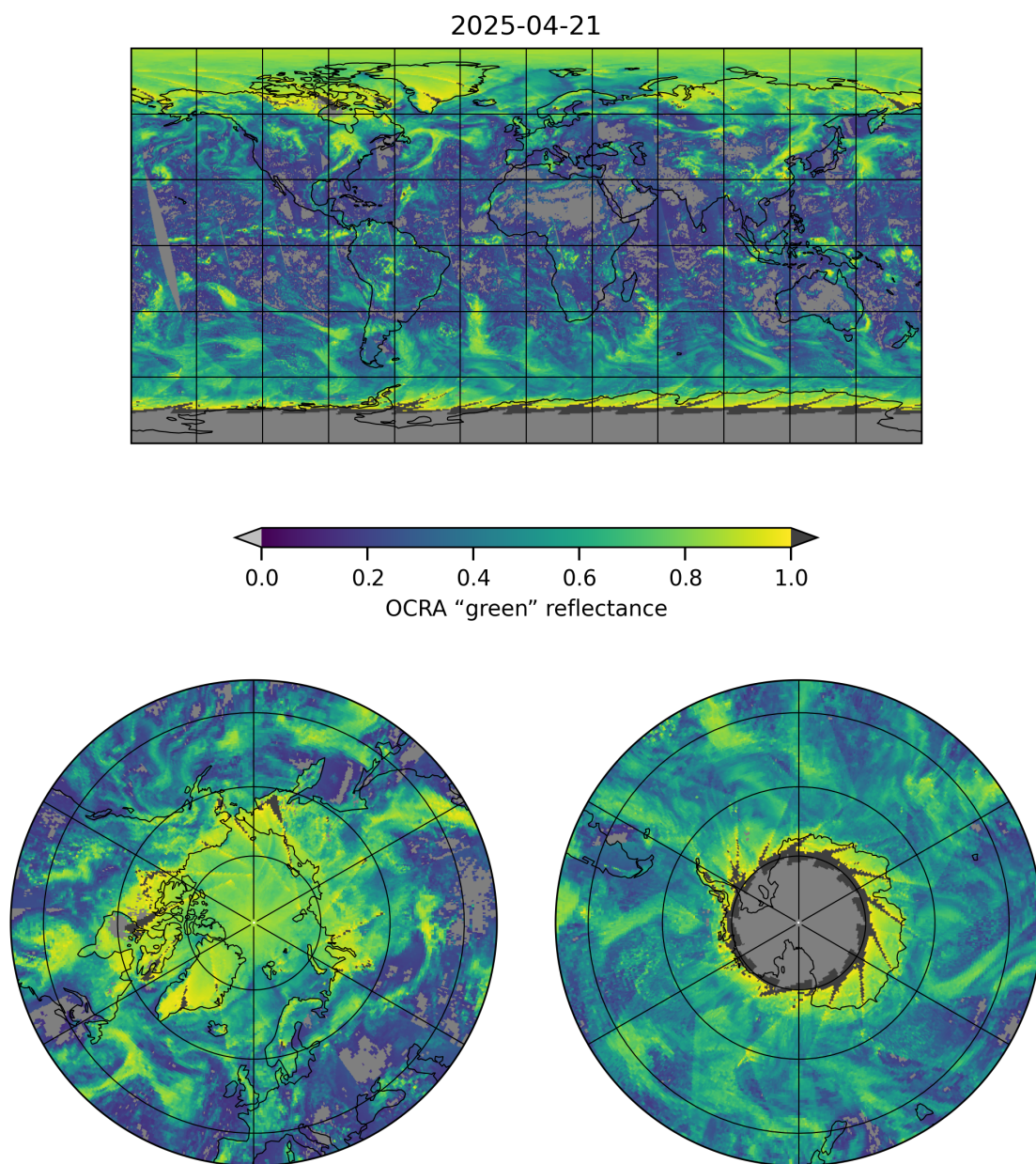


Figure 17: Map of "OCRA "green" reflectance" for 2025-04-21 to 2025-04-22

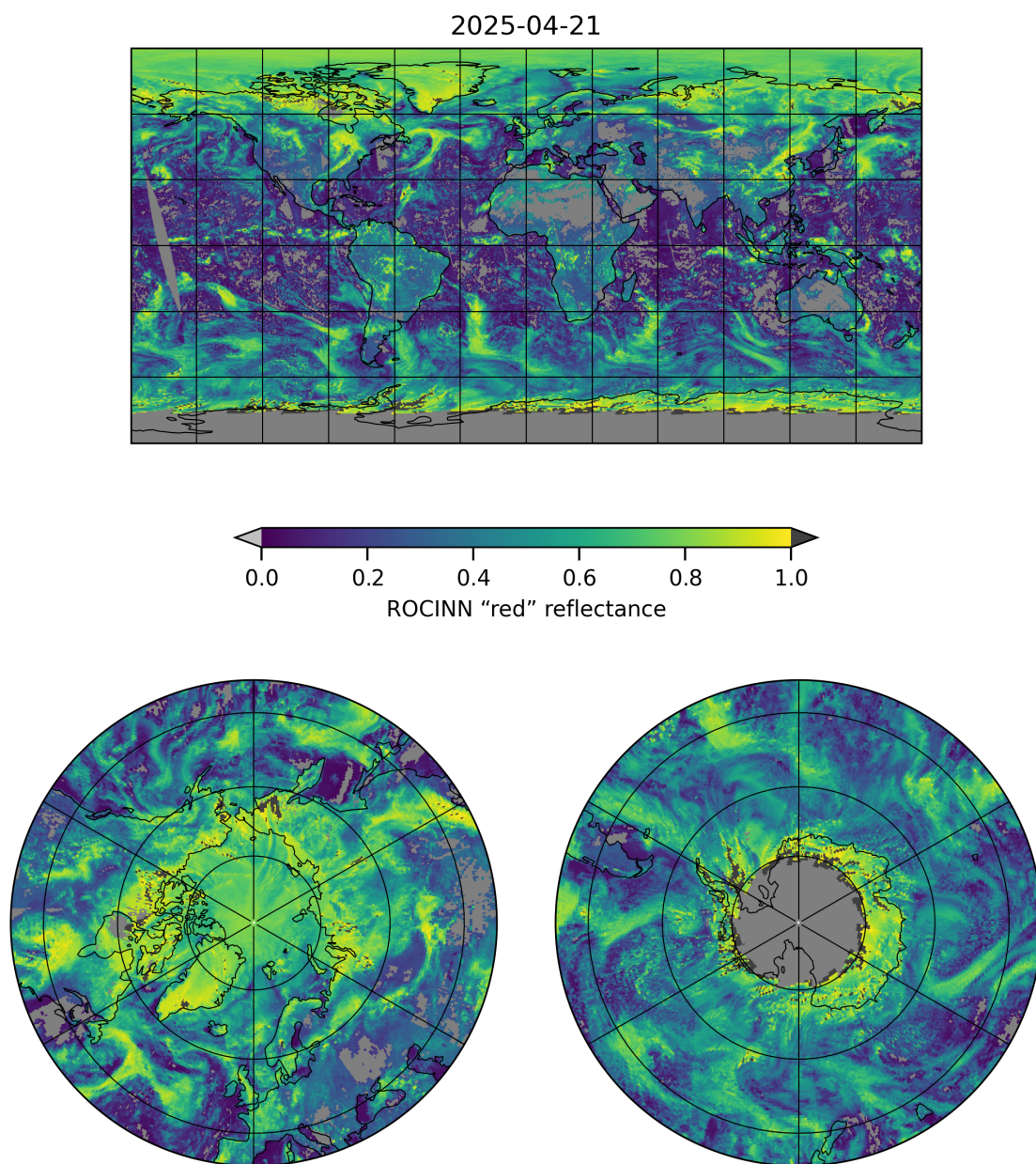


Figure 18: Map of "ROCINN "red" reflectance" for 2025-04-21 to 2025-04-22

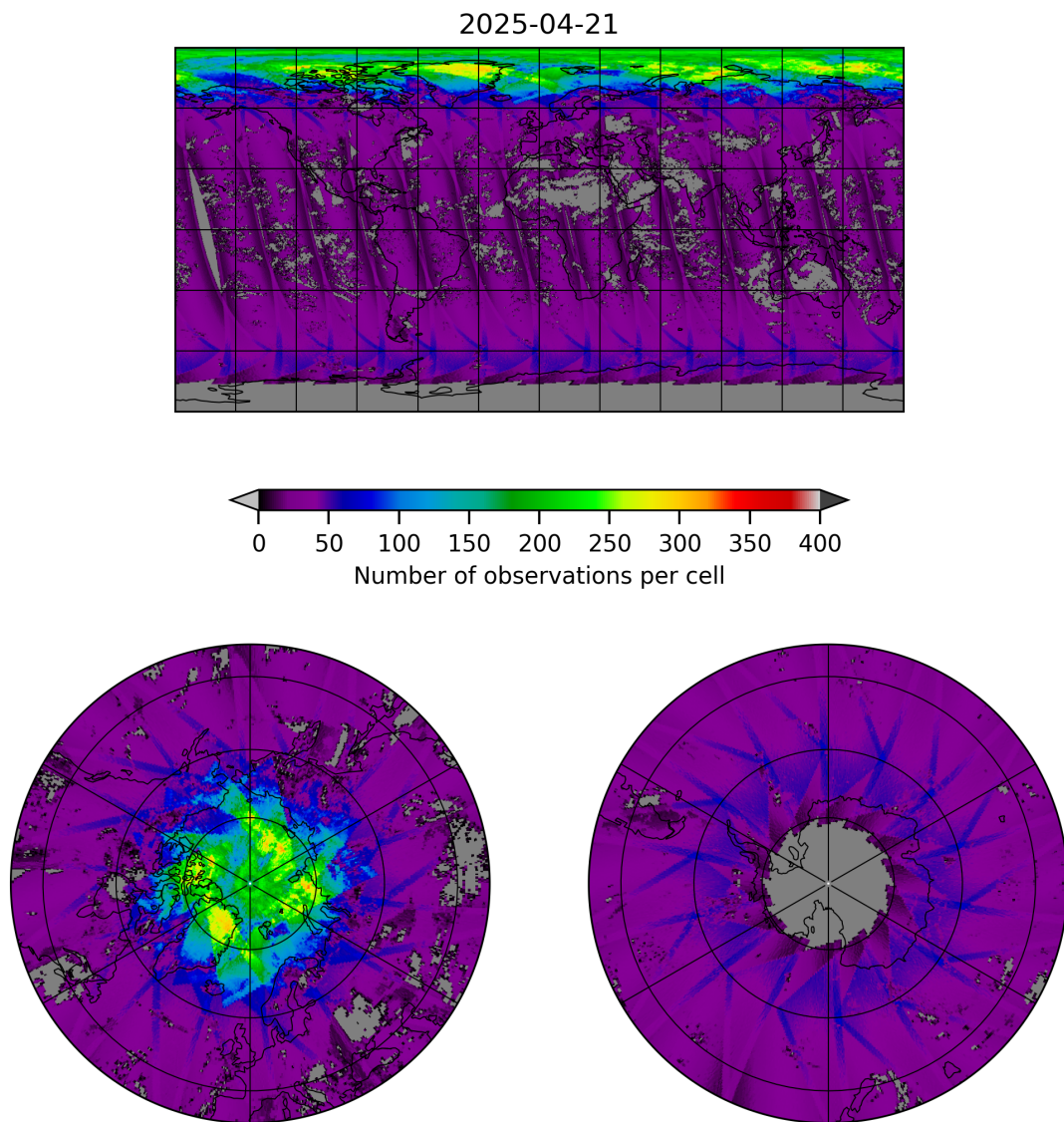


Figure 19: Map of the number of observations for 2025-04-21 to 2025-04-22

7 Zonal average

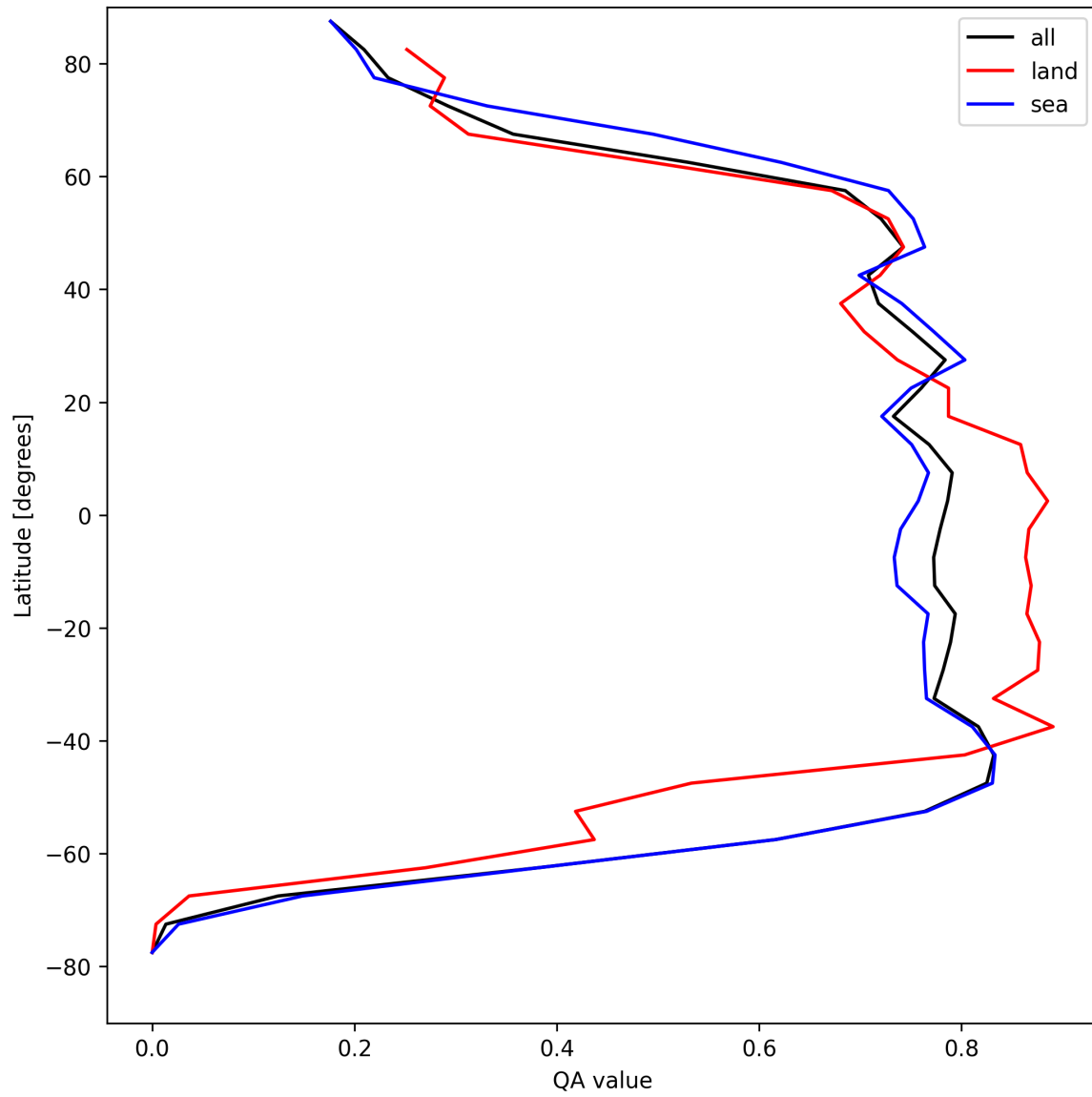


Figure 20: Zonal average of “QA value” for 2025-04-21 to 2025-04-22.

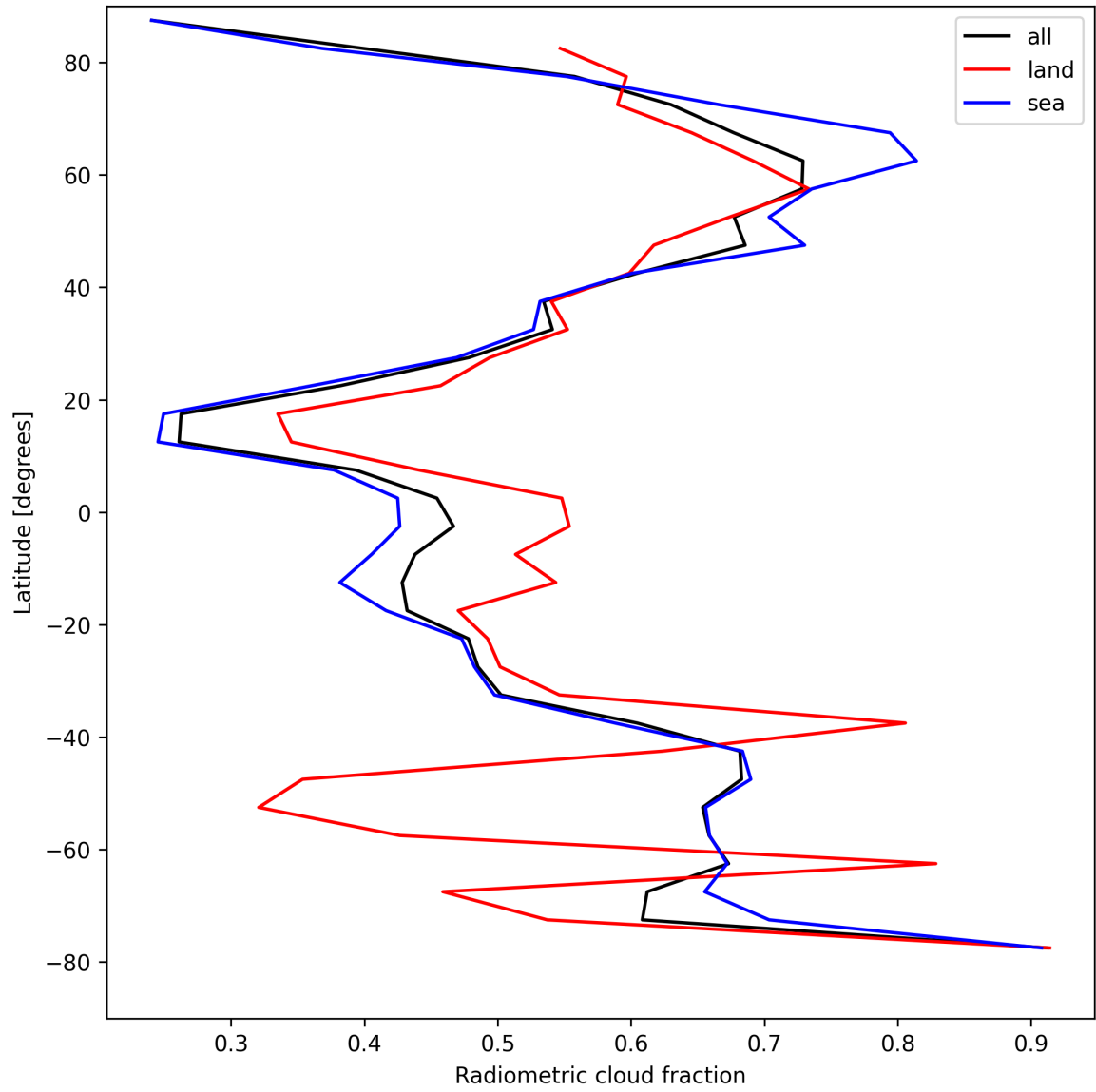


Figure 21: Zonal average of “Radiometric cloud fraction” for 2025-04-21 to 2025-04-22.

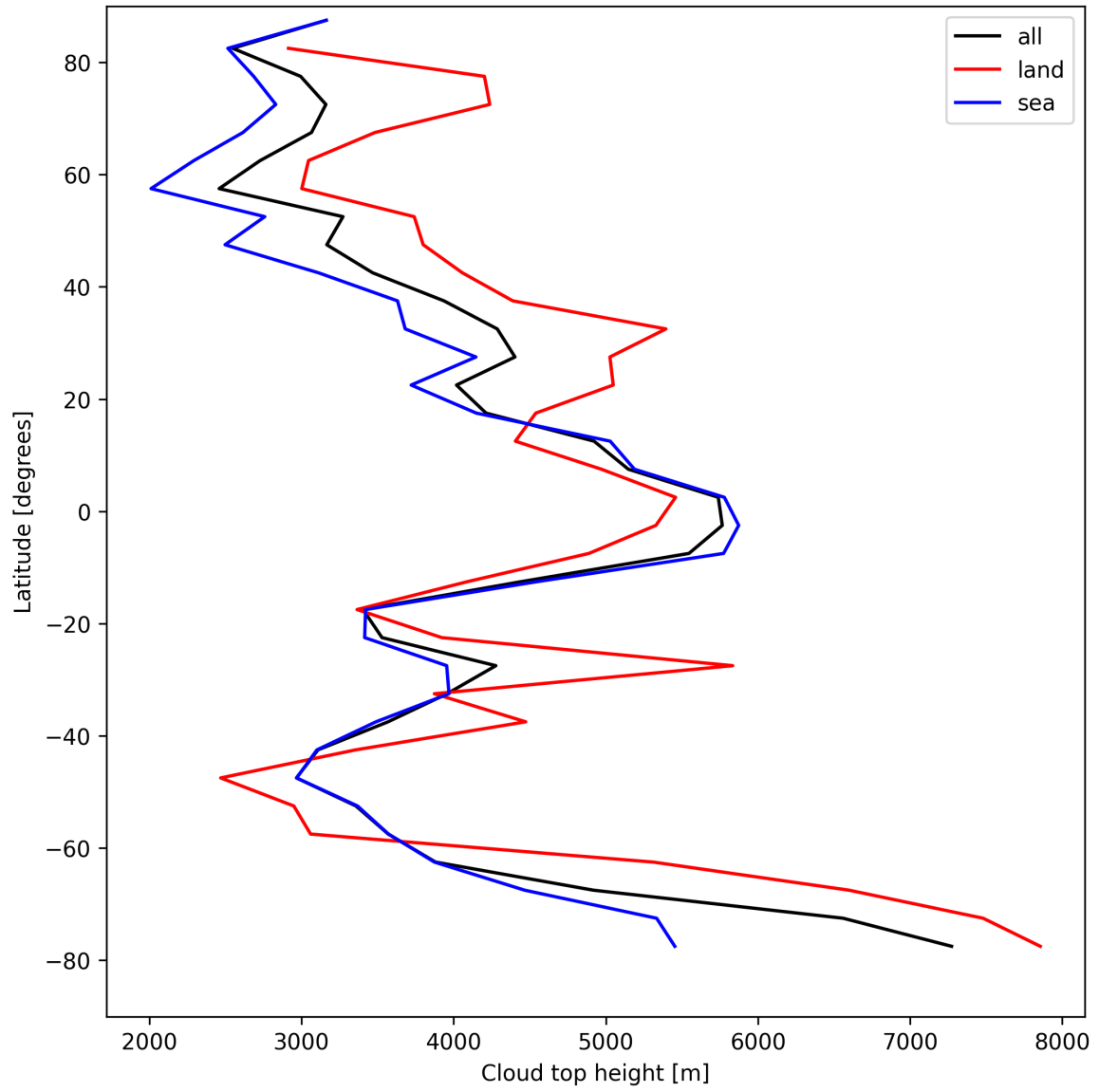


Figure 22: Zonal average of “Cloud top height” for 2025-04-21 to 2025-04-22.

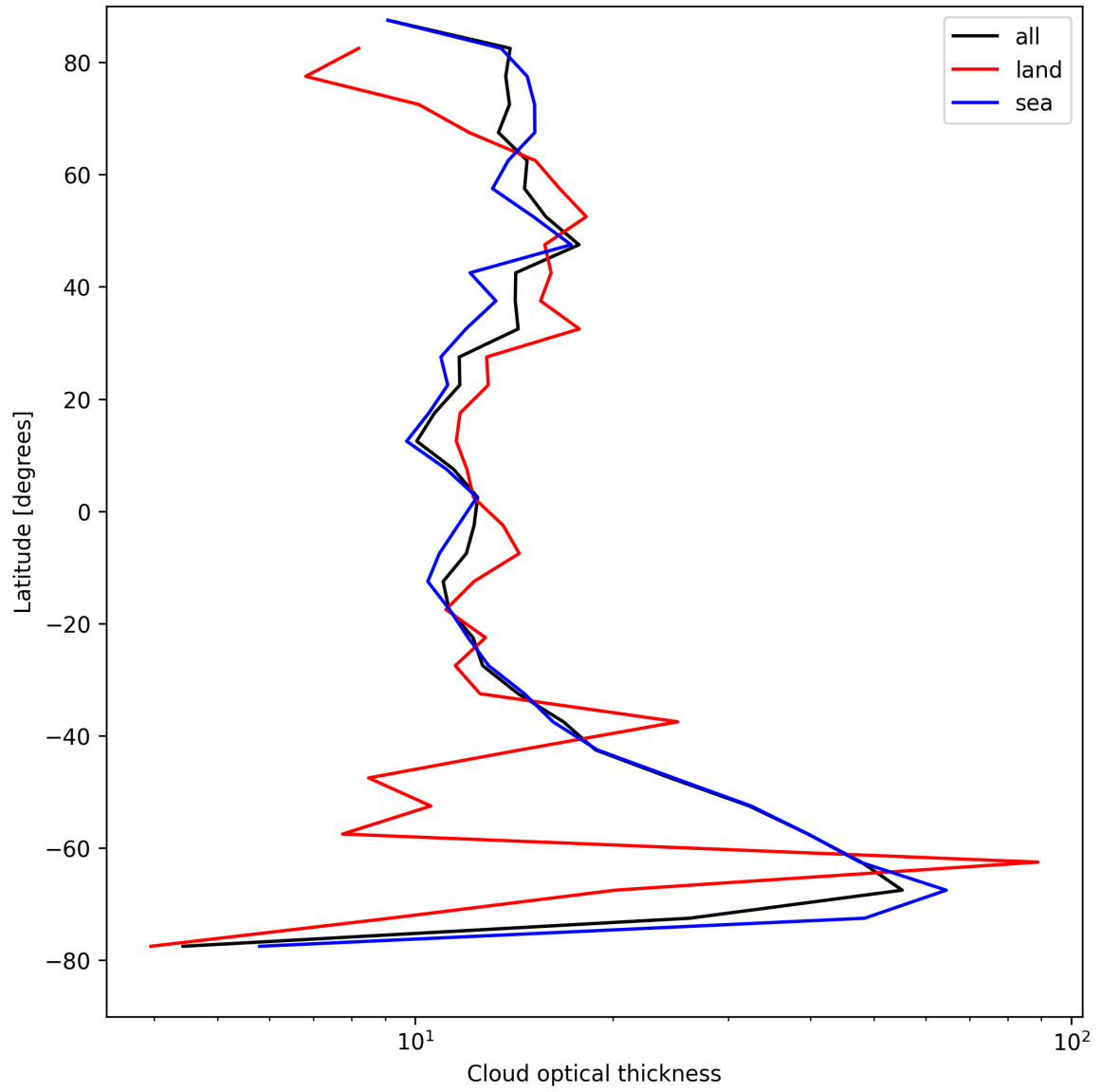


Figure 23: Zonal average of “Cloud optical thickness” for 2025-04-21 to 2025-04-22.

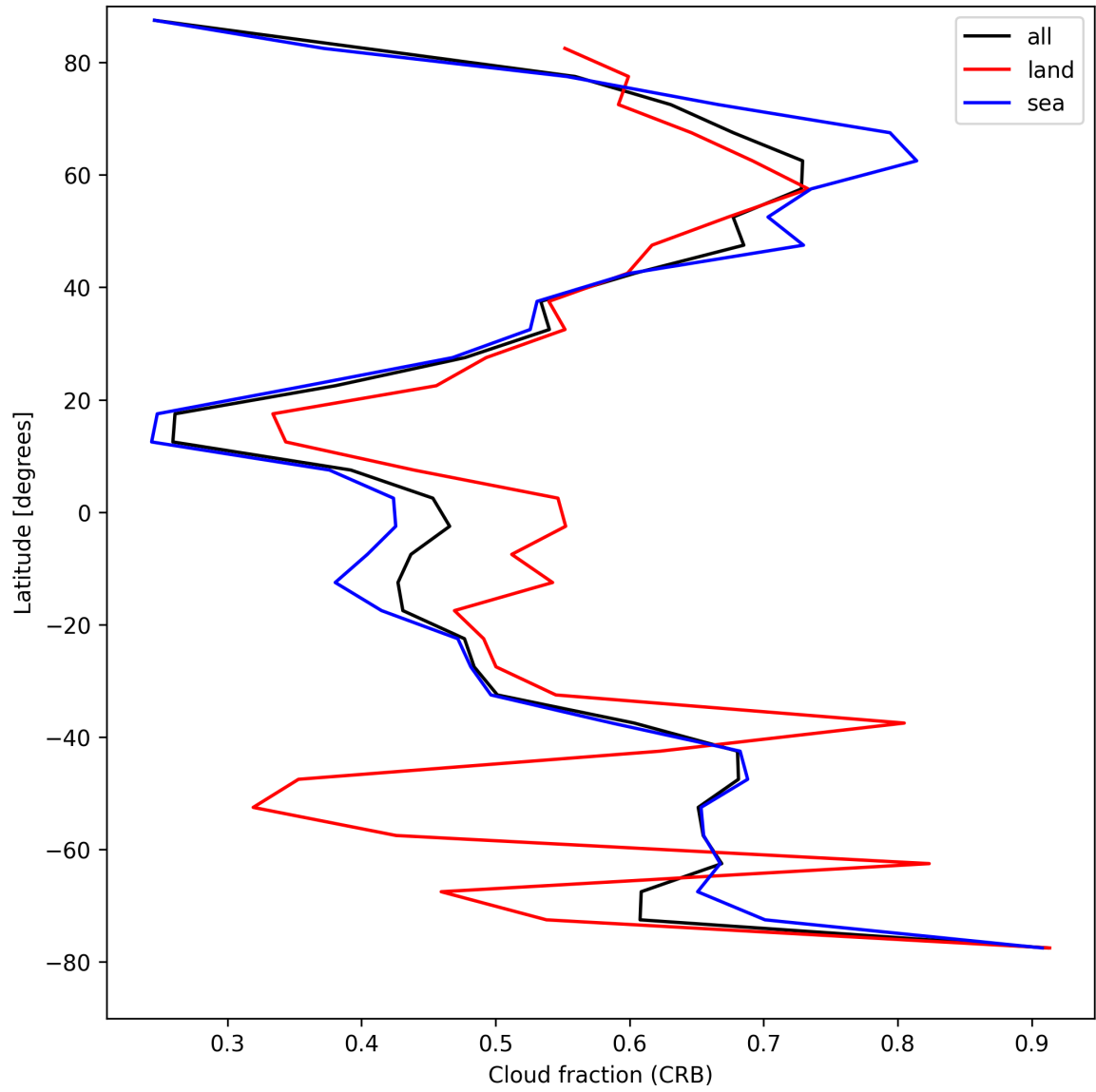


Figure 24: Zonal average of “Cloud fraction (CRB)” for 2025-04-21 to 2025-04-22.

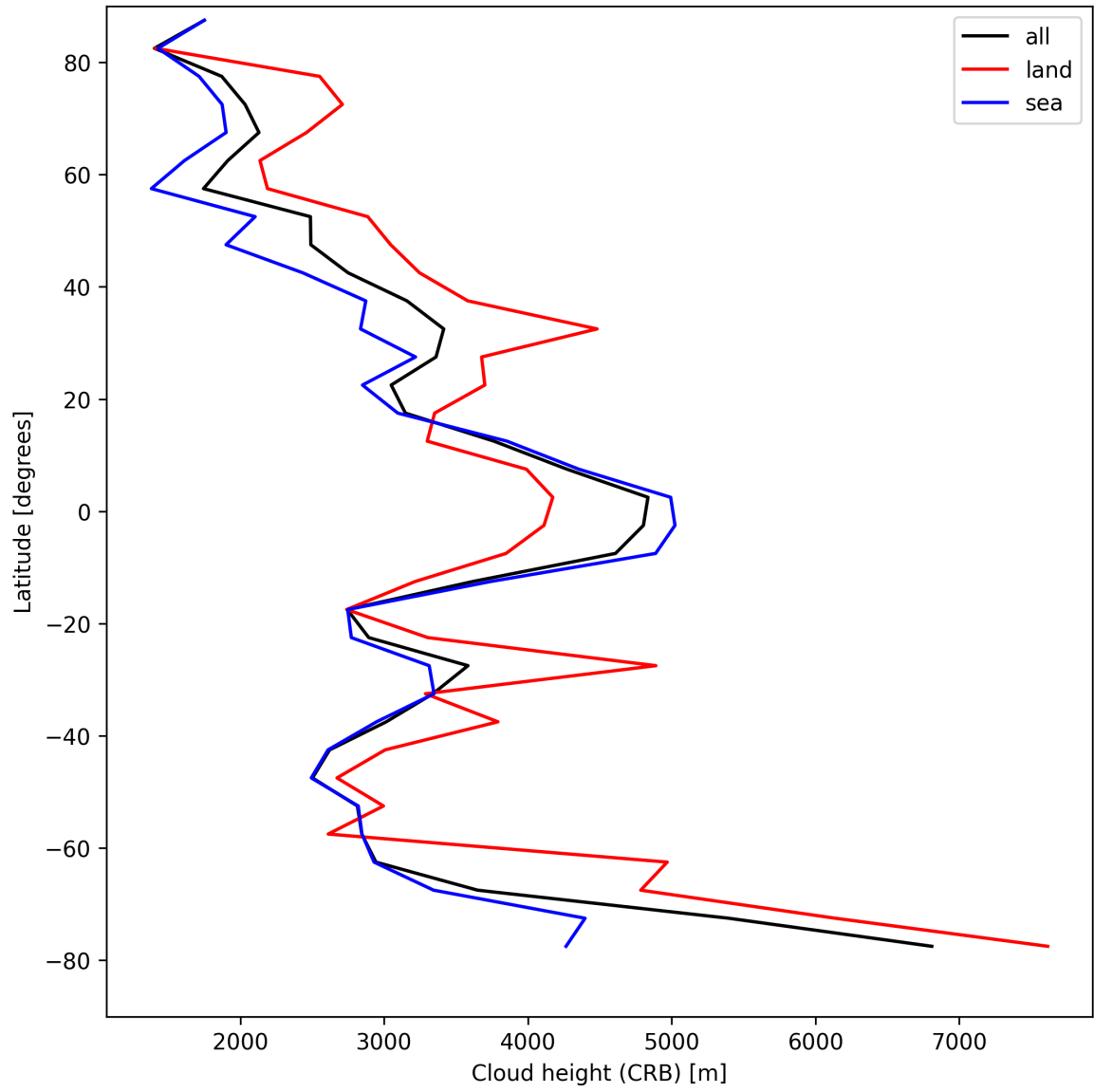


Figure 25: Zonal average of “Cloud height (CRB)” for 2025-04-21 to 2025-04-22.

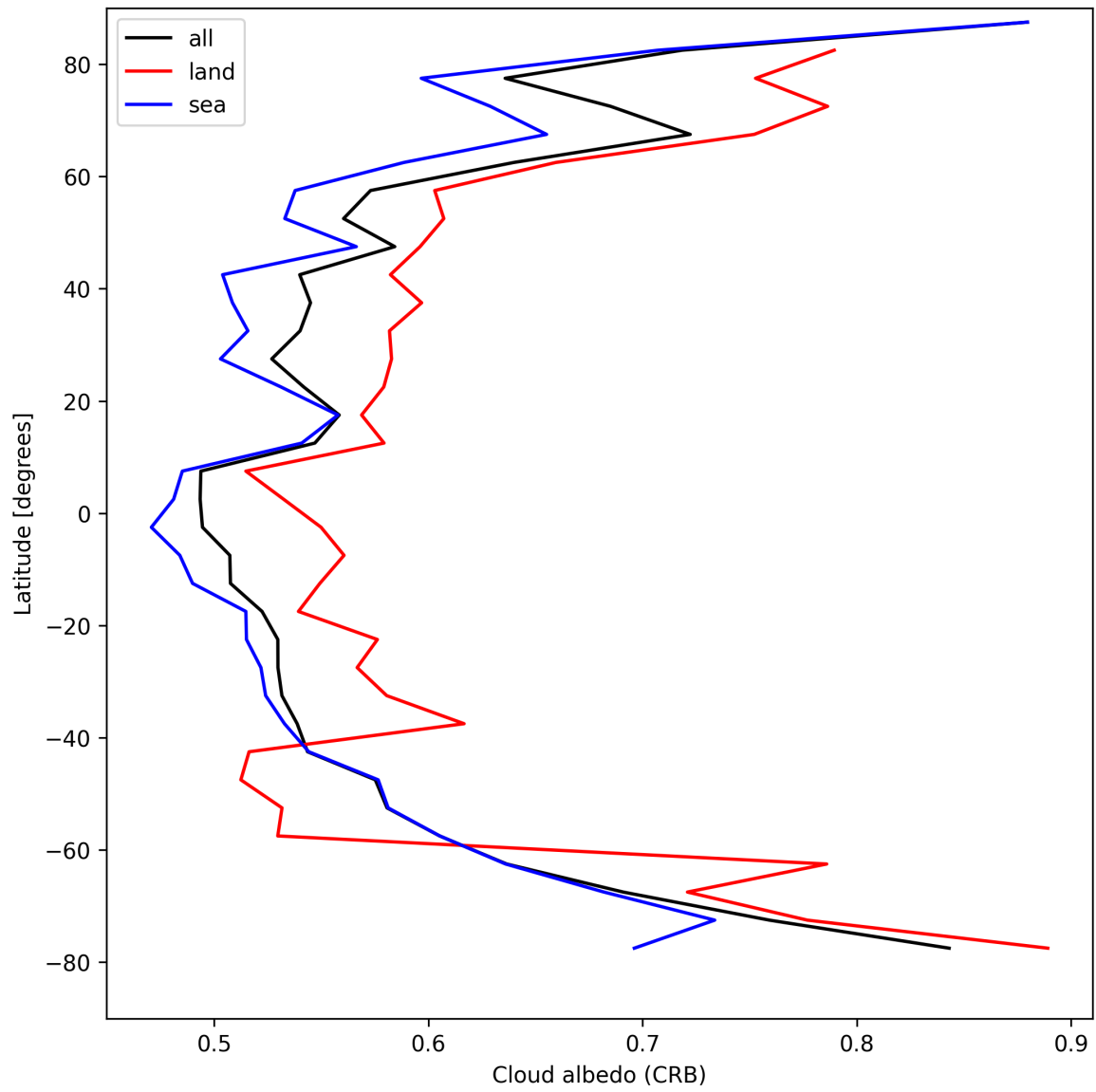


Figure 26: Zonal average of “Cloud albedo (CRB)” for 2025-04-21 to 2025-04-22.

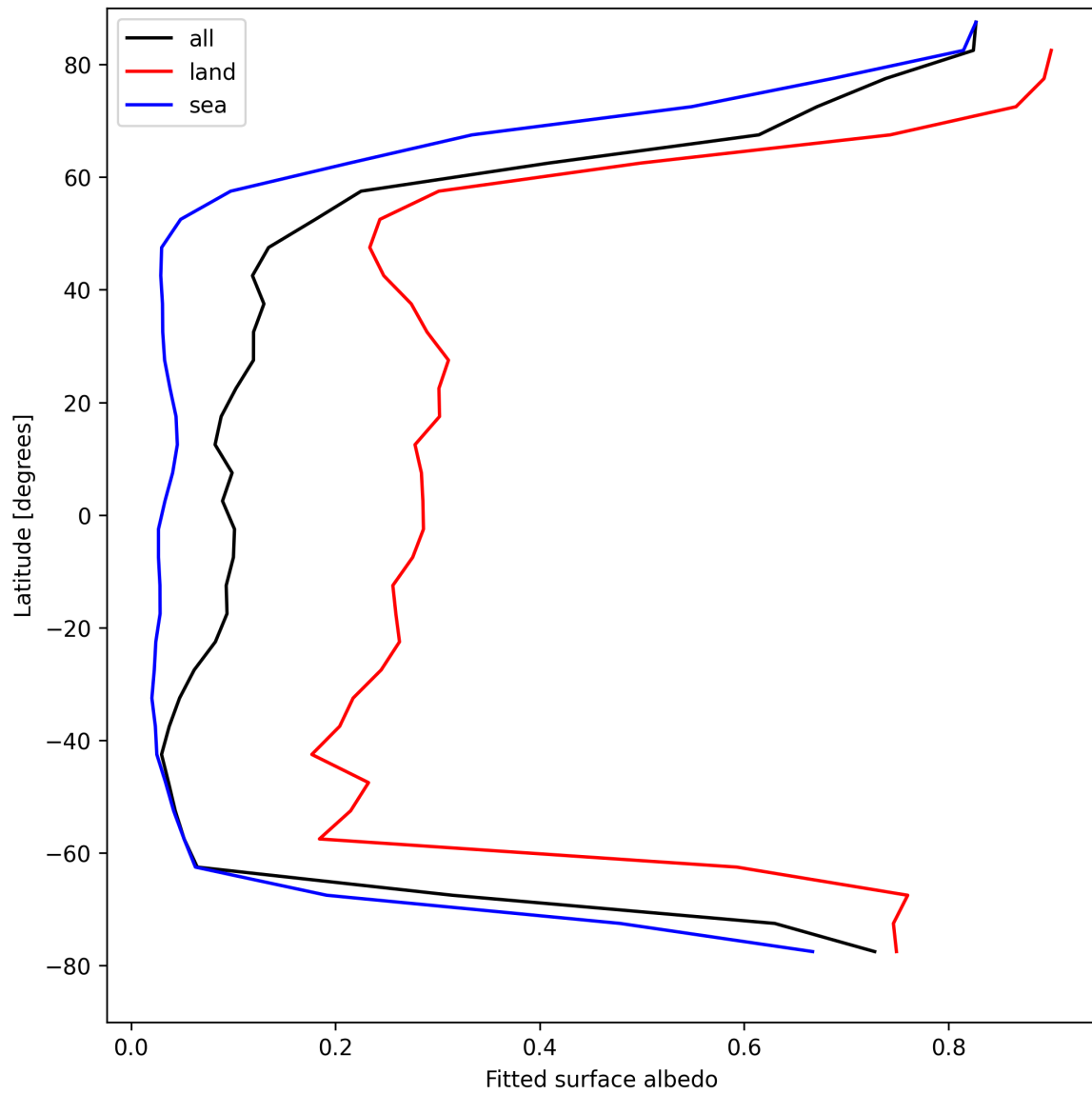


Figure 27: Zonal average of “Fitted surface albedo” for 2025-04-21 to 2025-04-22.

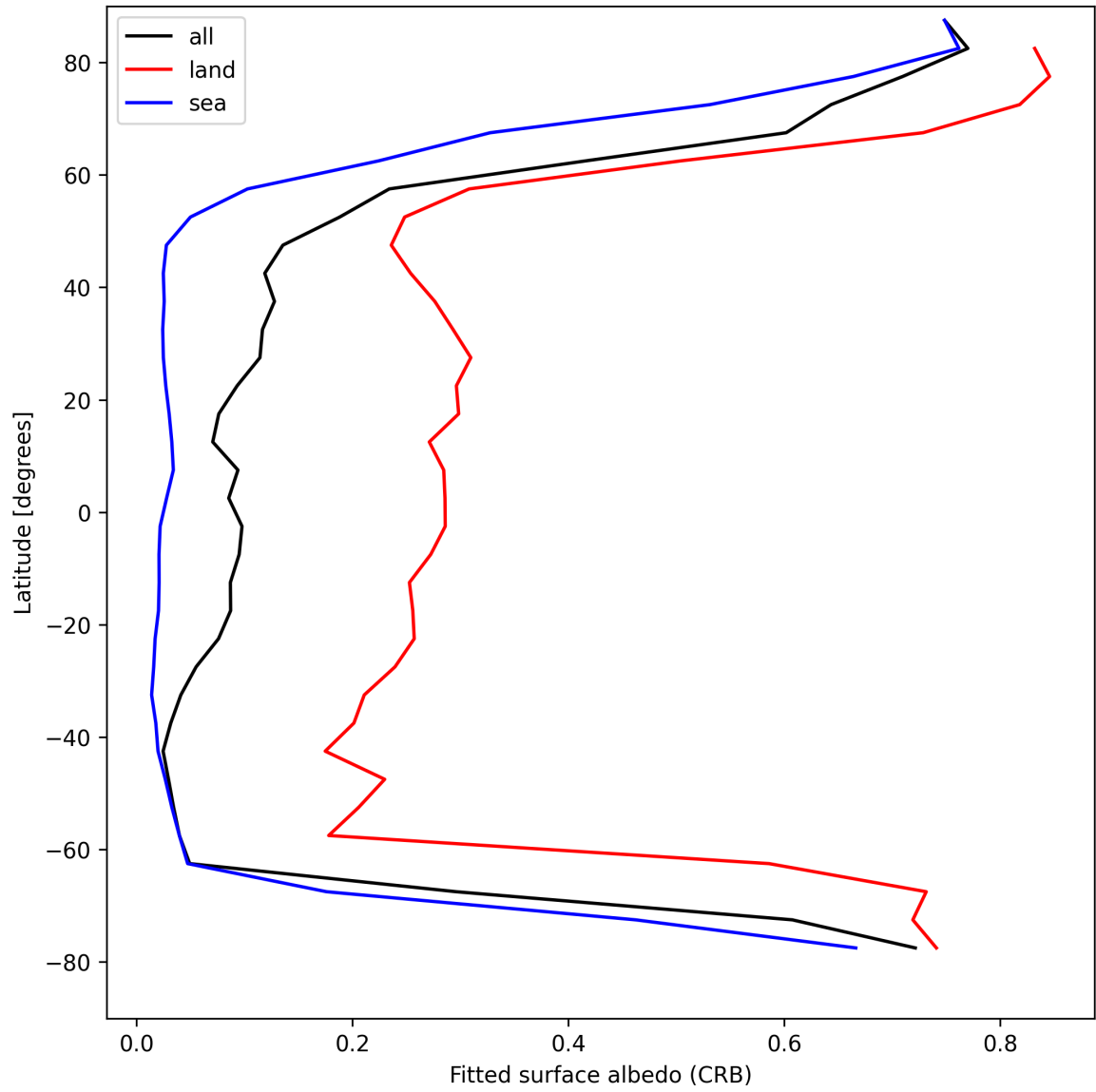


Figure 28: Zonal average of “Fitted surface albedo (CRB)” for 2025-04-21 to 2025-04-22.

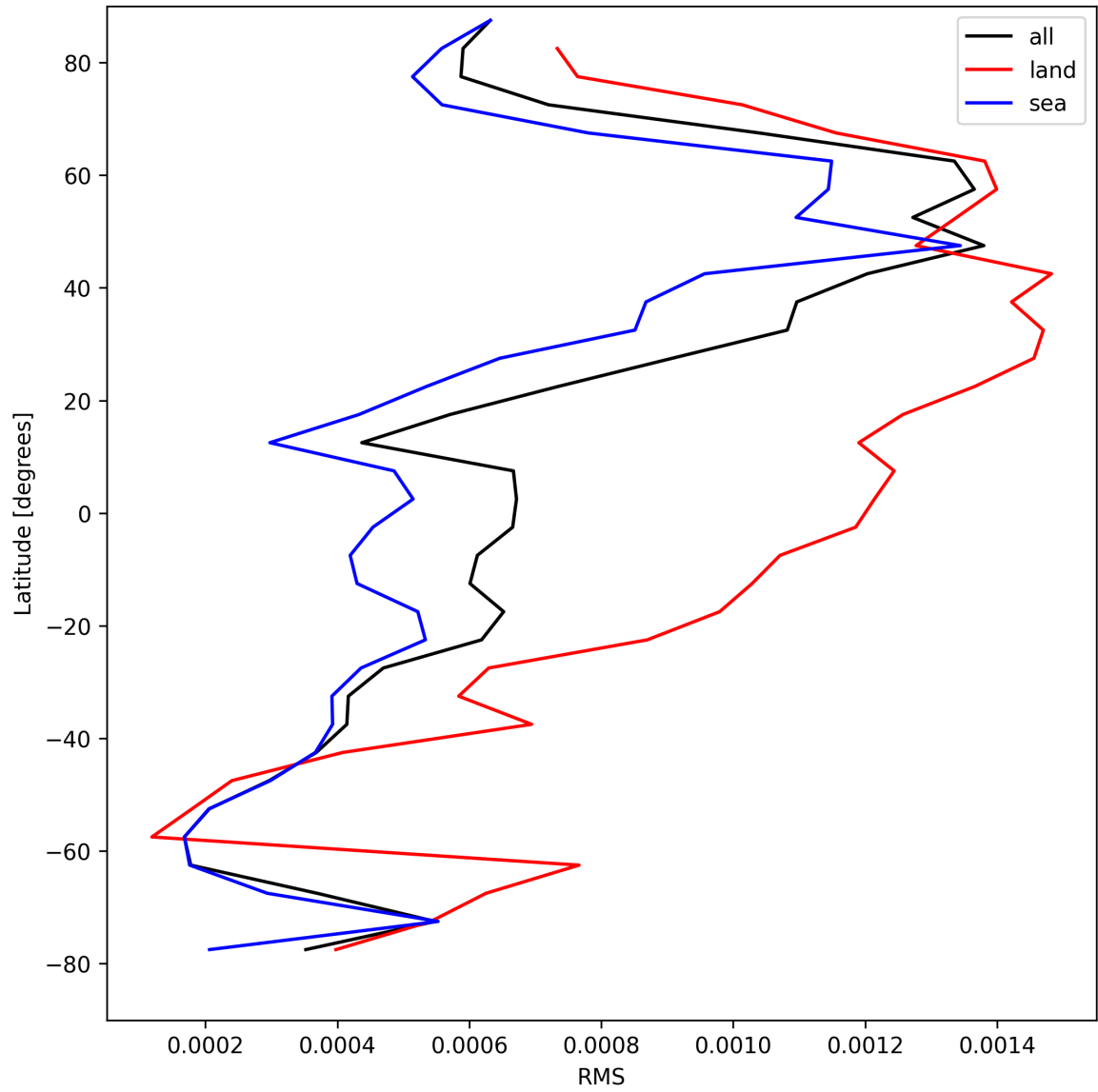


Figure 29: Zonal average of “RMS” for 2025-04-21 to 2025-04-22.

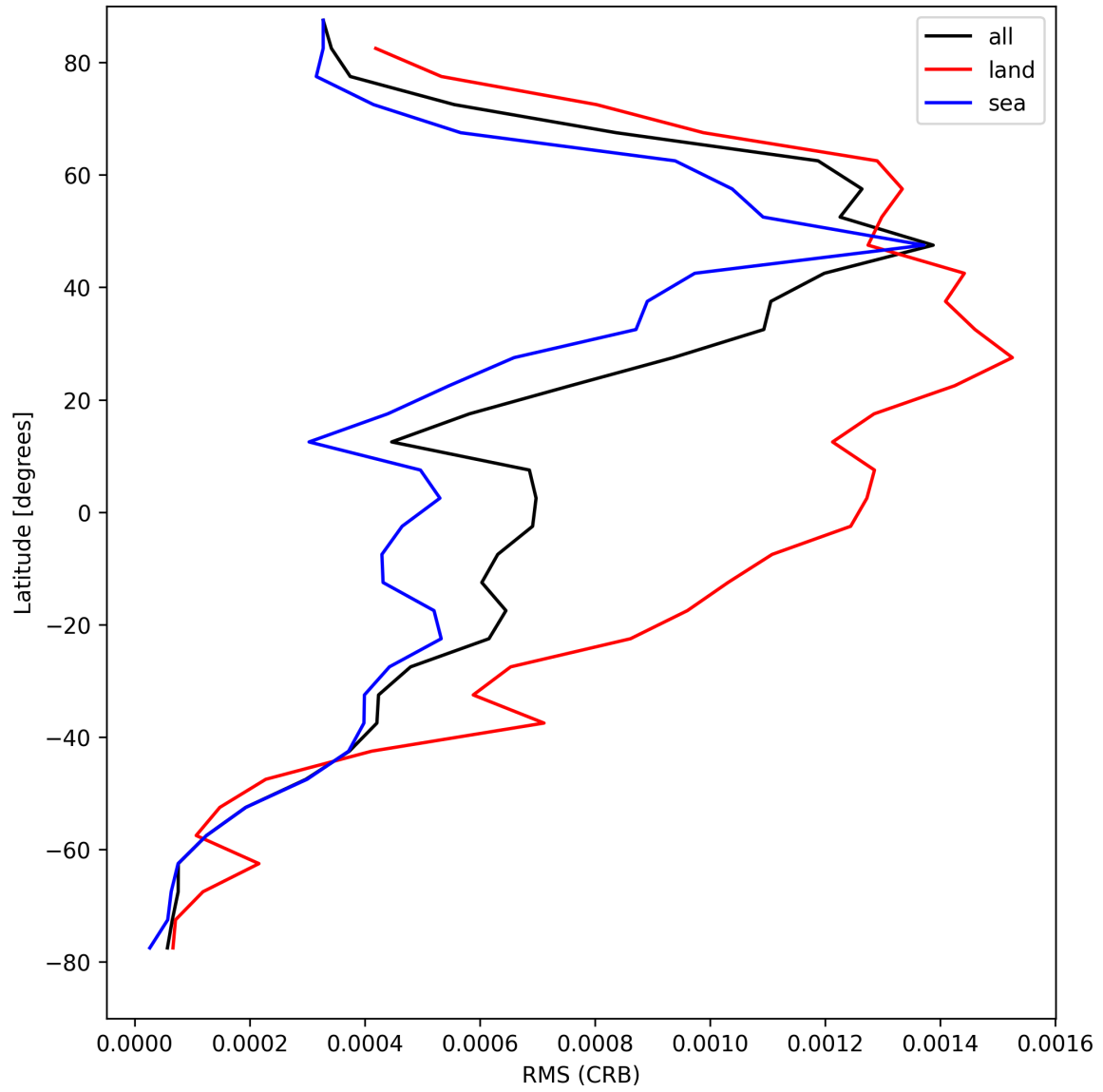


Figure 30: Zonal average of “RMS (CRB)” for 2025-04-21 to 2025-04-22.

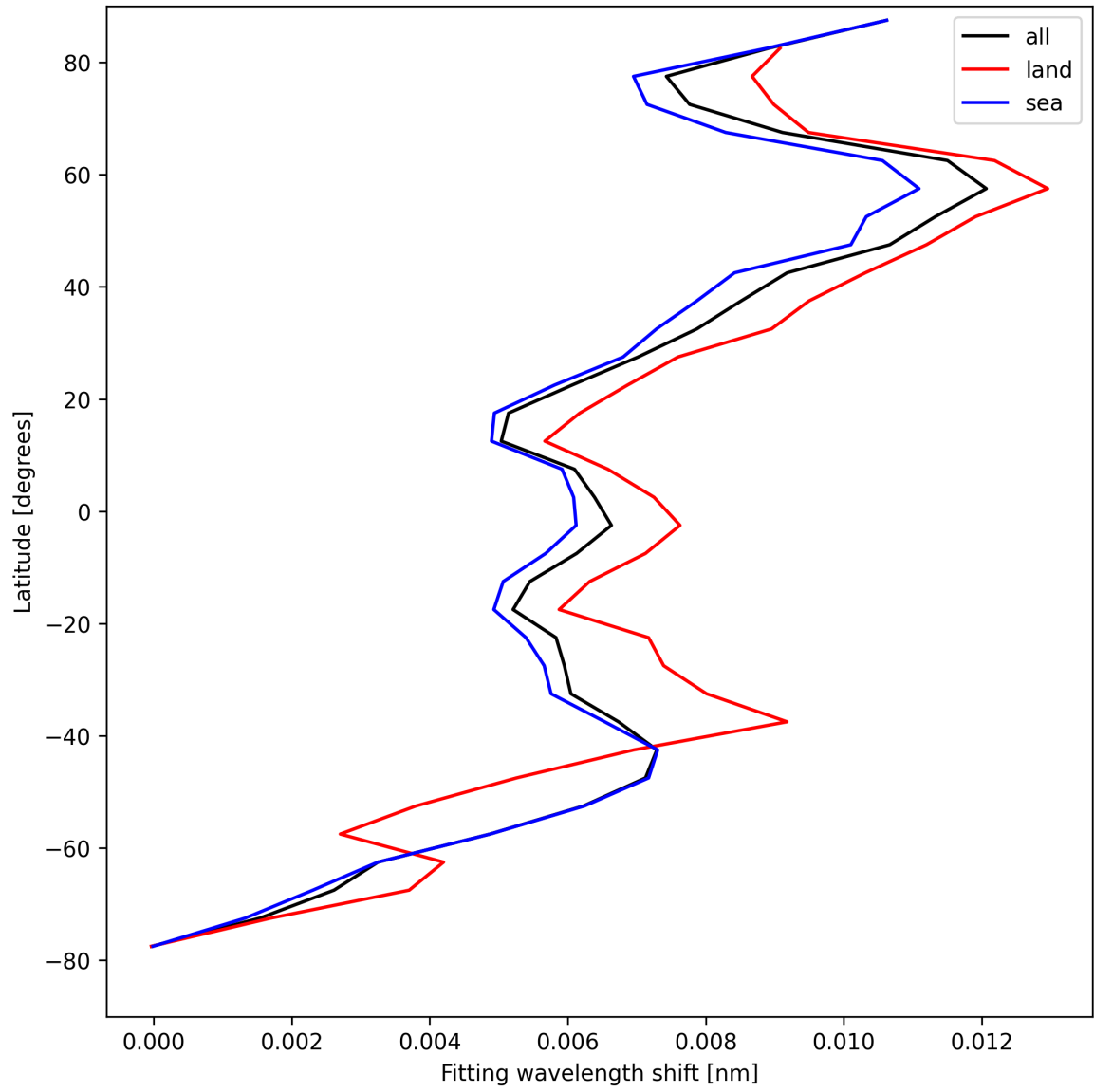


Figure 31: Zonal average of “Fitting wavelength shift” for 2025-04-21 to 2025-04-22.

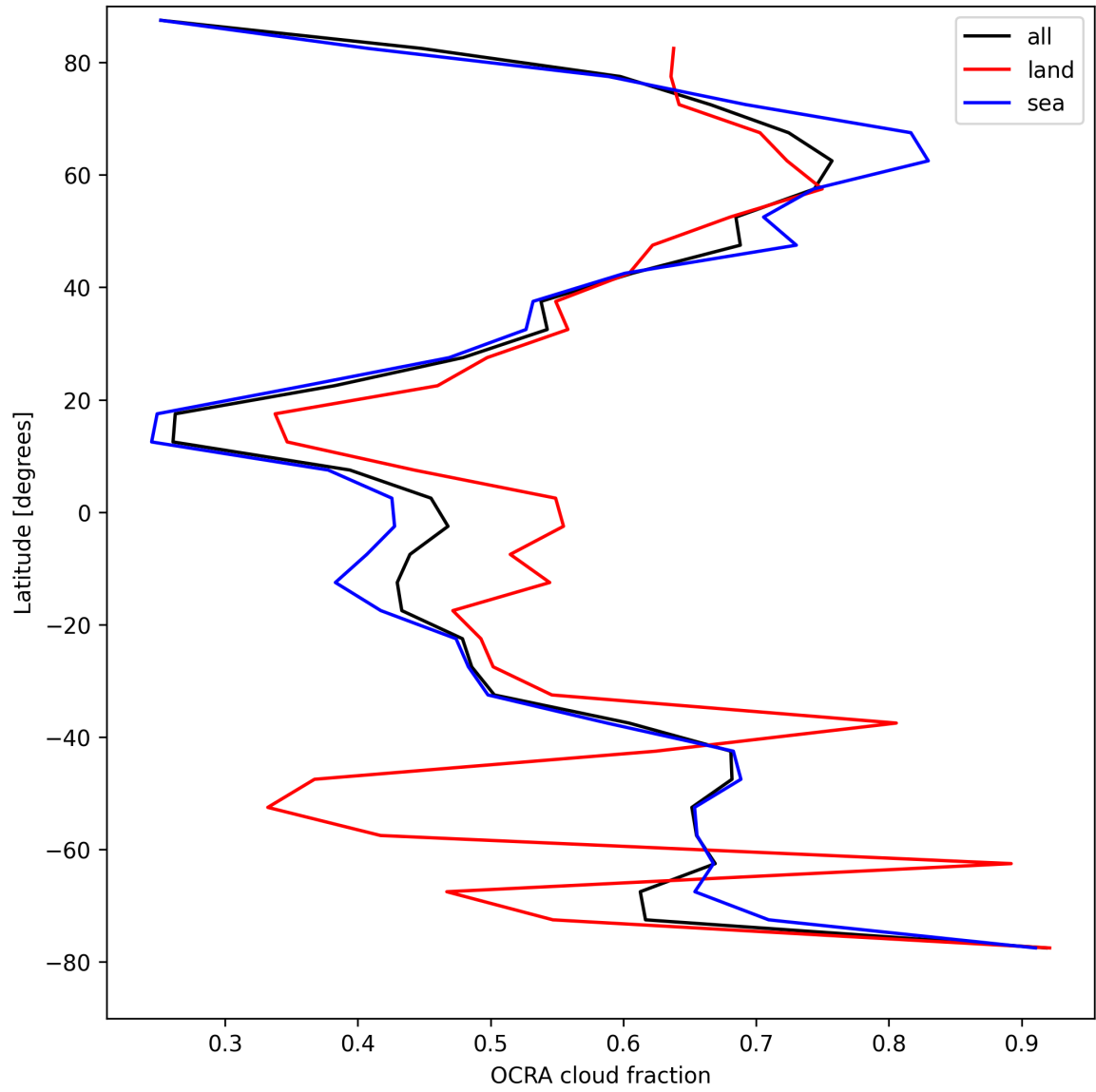


Figure 32: Zonal average of “OCRA cloud fraction” for 2025-04-21 to 2025-04-22.

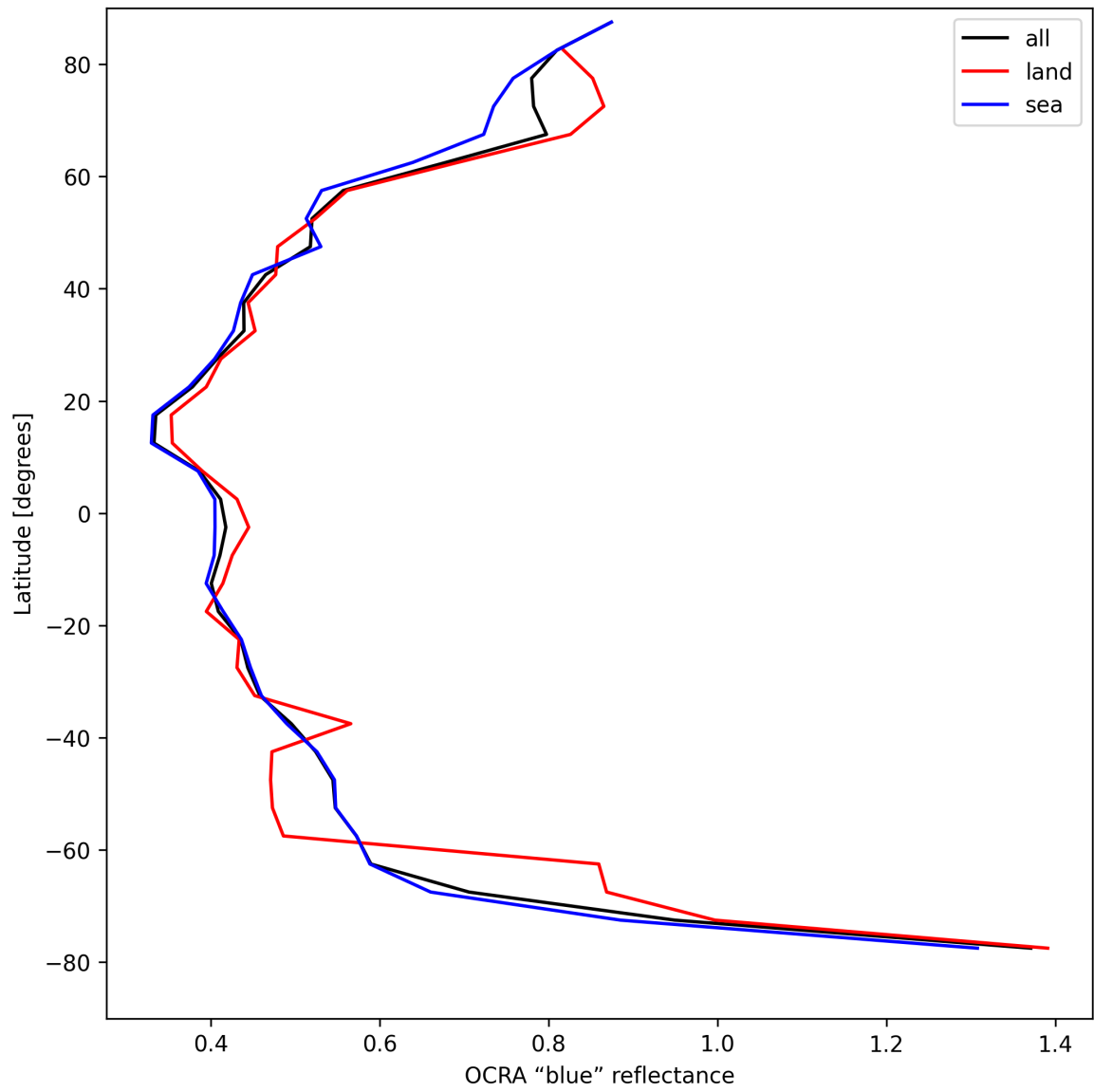


Figure 33: Zonal average of "OCRA "blue" reflectance" for 2025-04-21 to 2025-04-22.

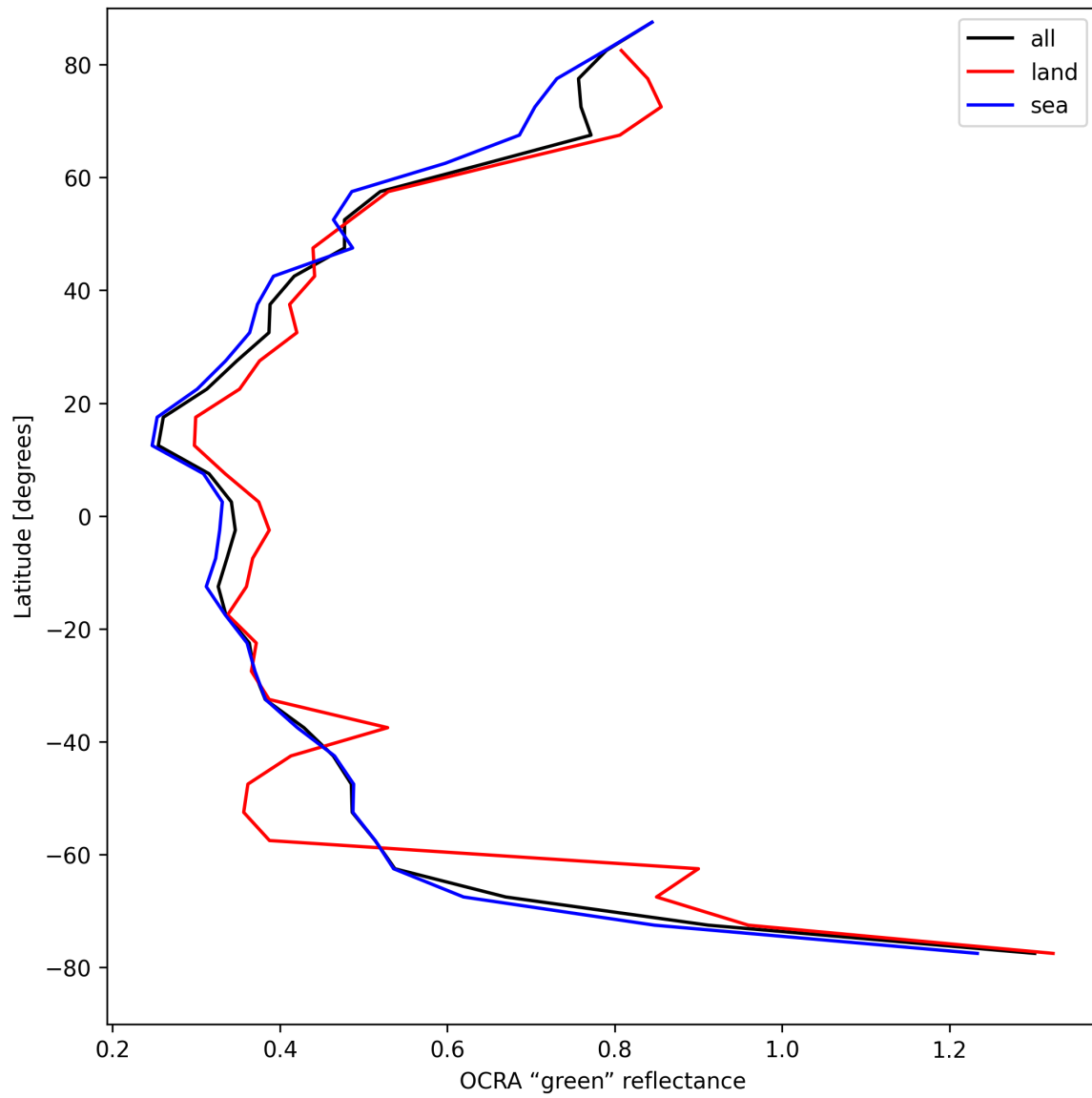


Figure 34: Zonal average of “OCRA “green” reflectance” for 2025-04-21 to 2025-04-22.

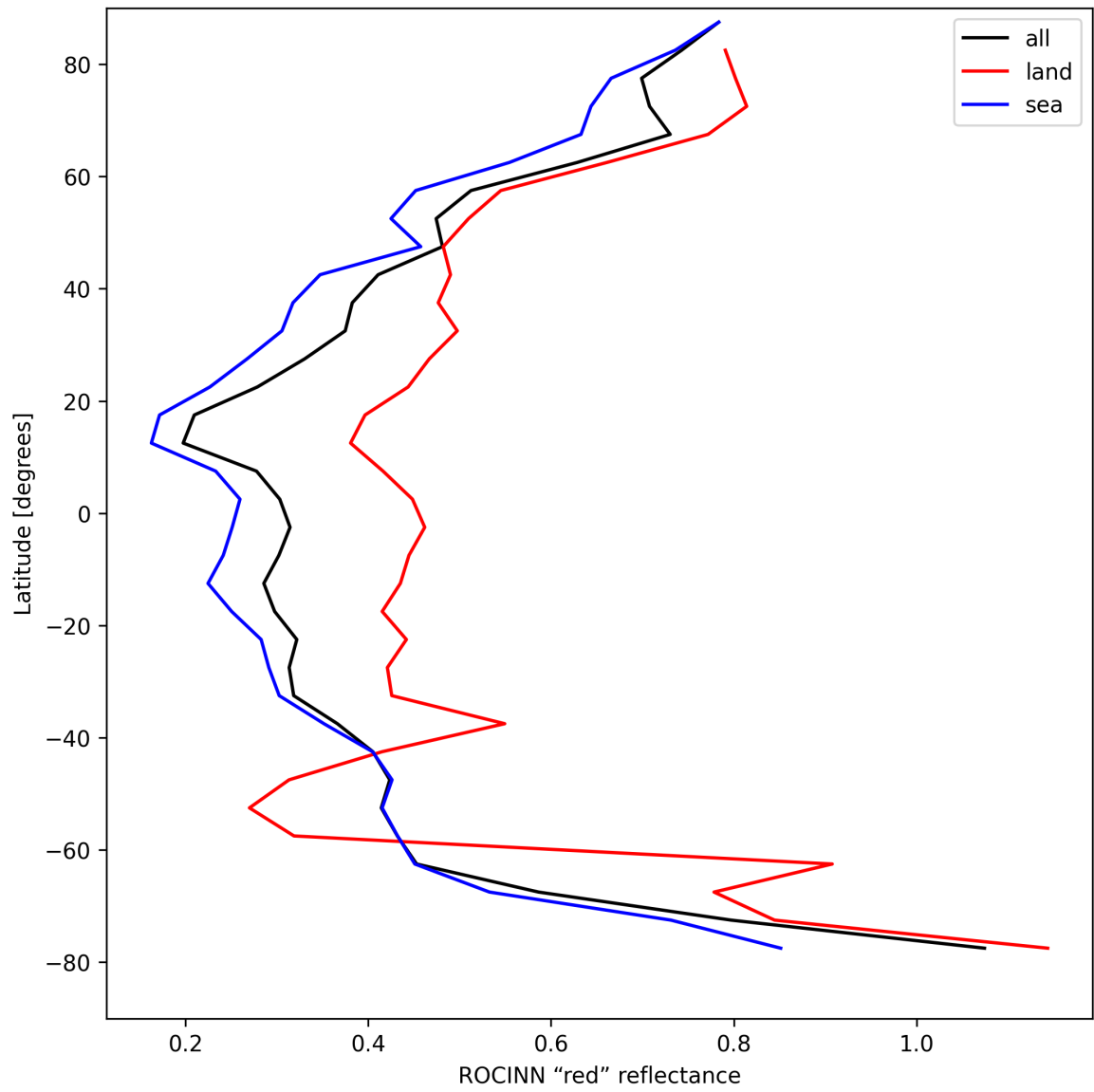


Figure 35: Zonal average of “ROCINN “red” reflectance” for 2025-04-21 to 2025-04-22.

8 Histograms

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

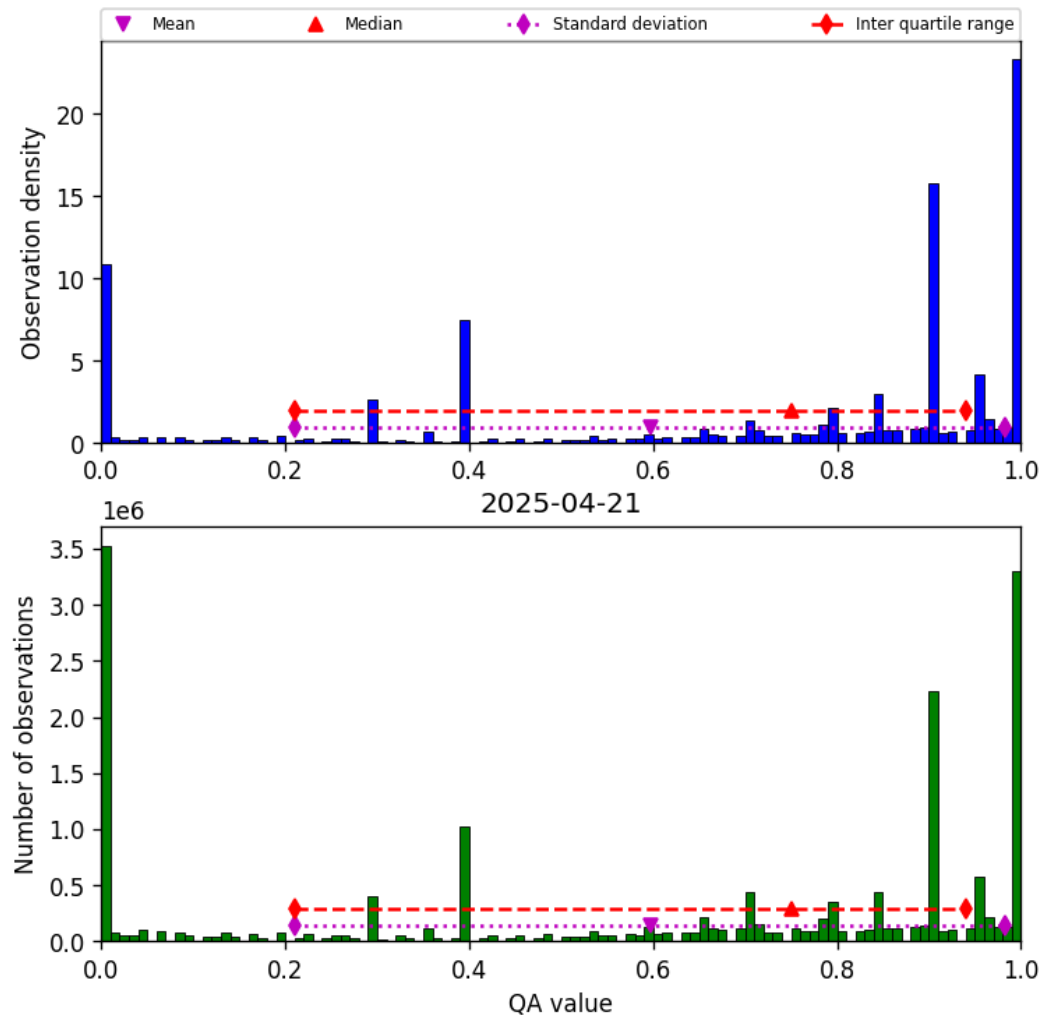


Figure 36: Histogram of “QA value” for 2025-04-21 to 2025-04-22

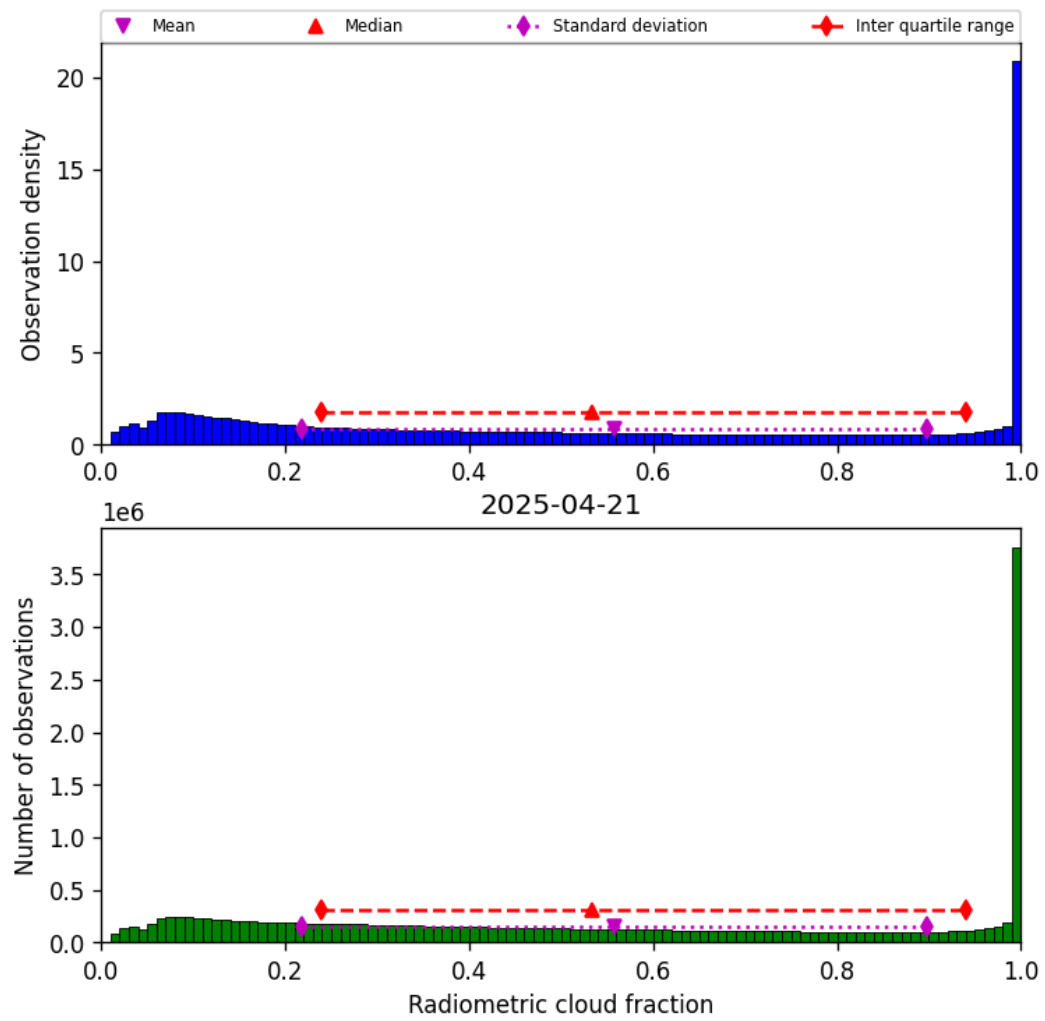


Figure 37: Histogram of “Radiometric cloud fraction” for 2025-04-21 to 2025-04-22

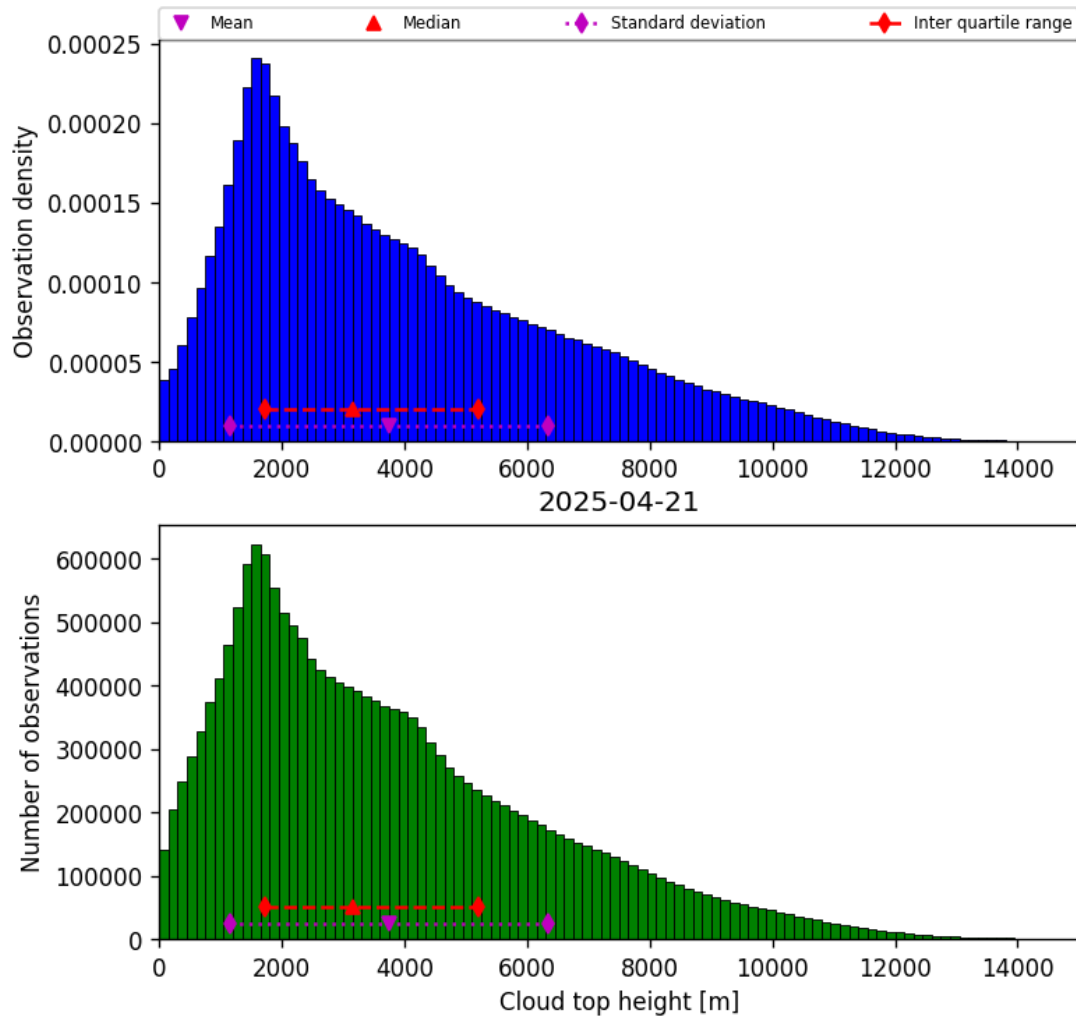


Figure 38: Histogram of “Cloud top height” for 2025-04-21 to 2025-04-22

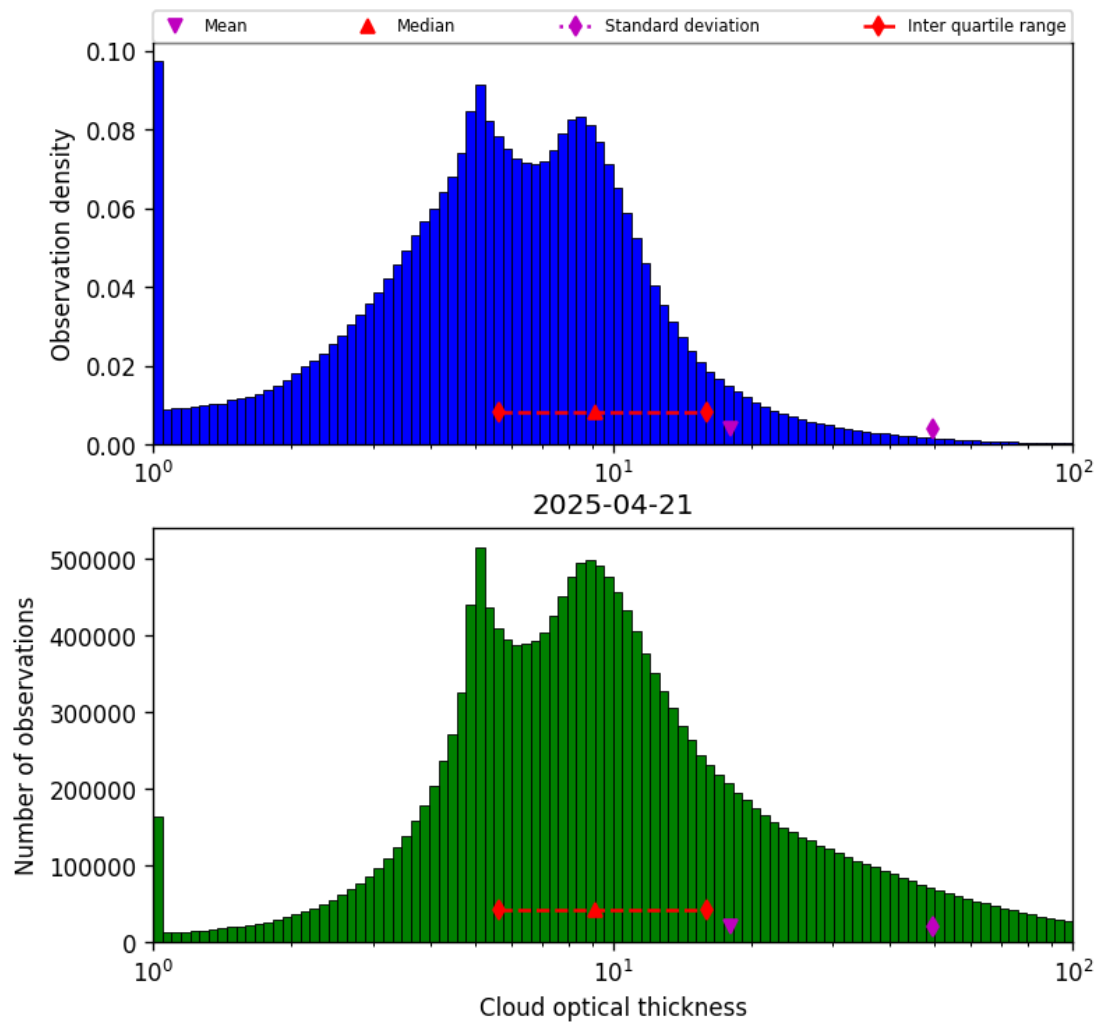


Figure 39: Histogram of “Cloud optical thickness” for 2025-04-21 to 2025-04-22

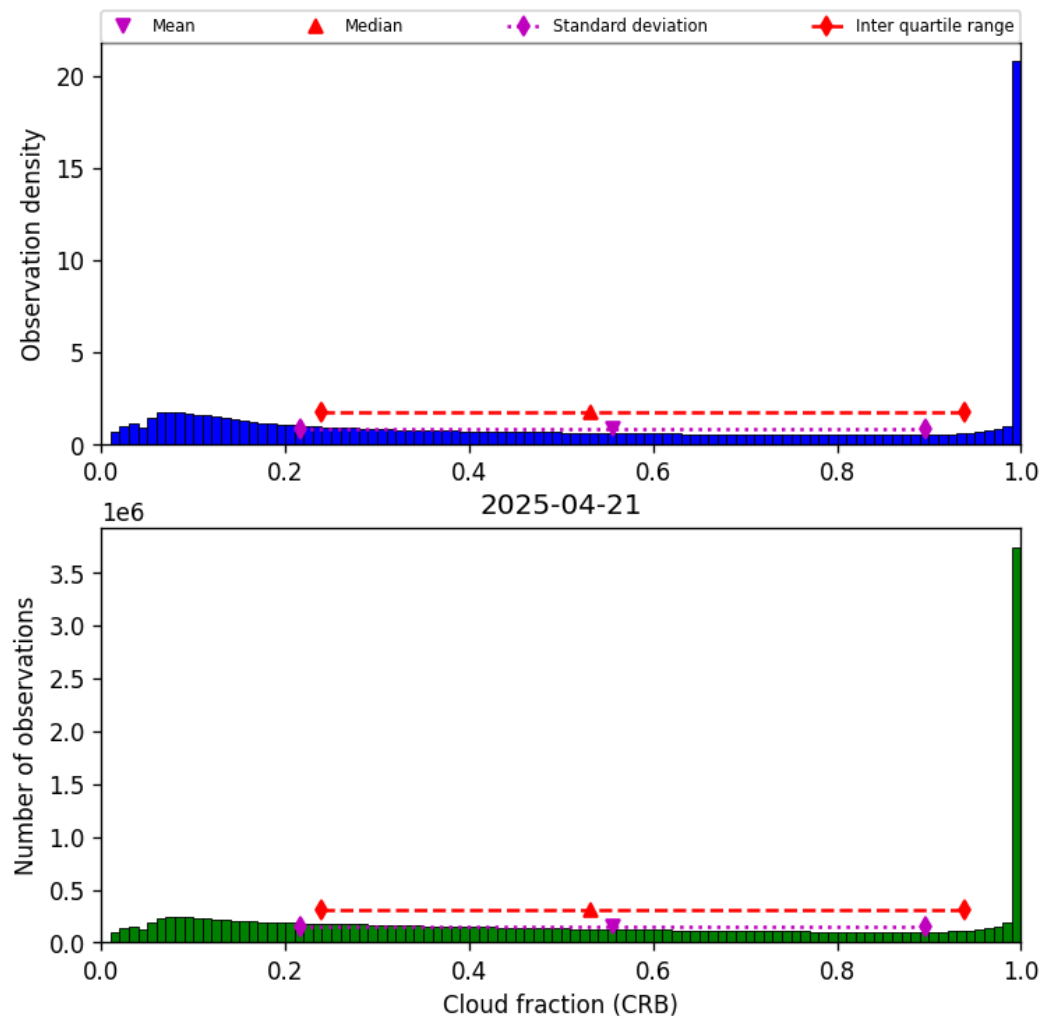


Figure 40: Histogram of “Cloud fraction (CRB)” for 2025-04-21 to 2025-04-22

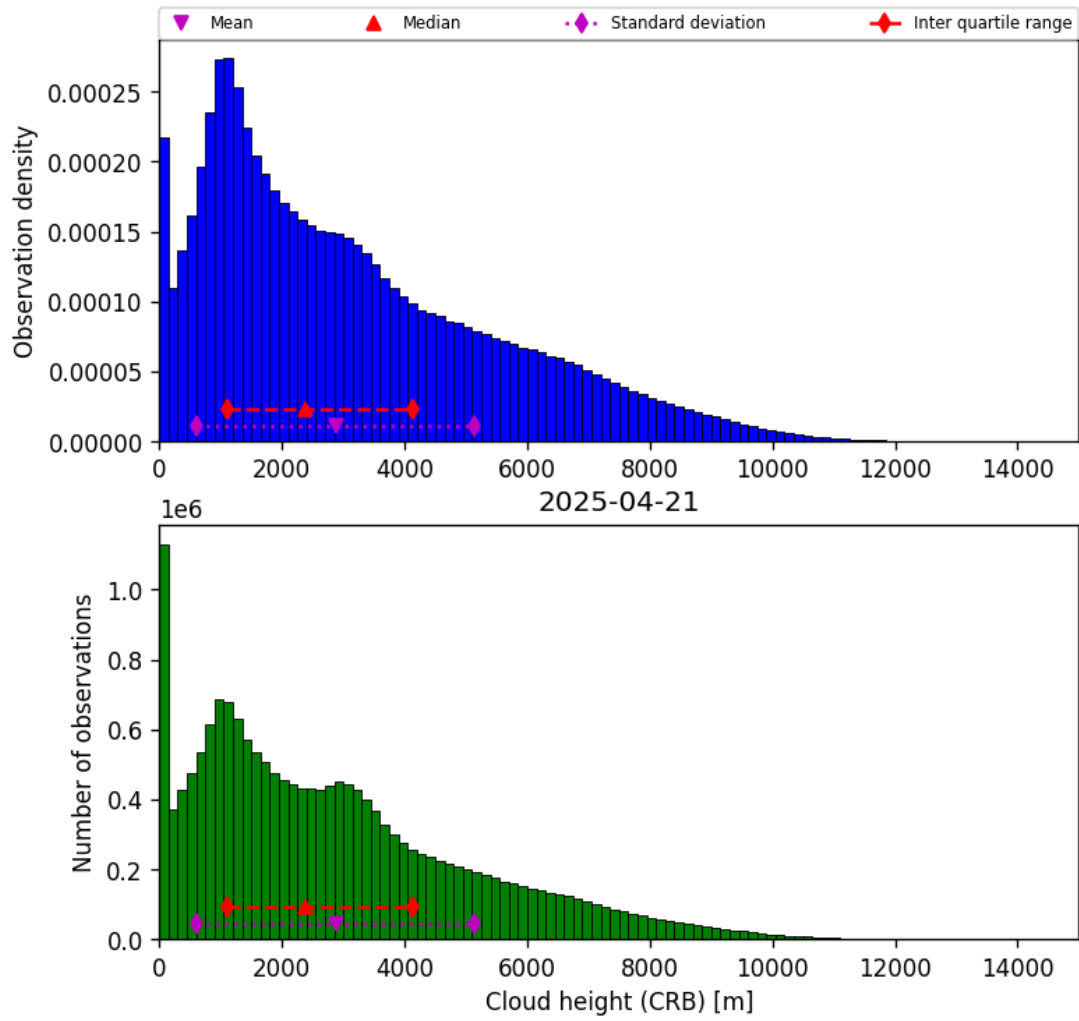


Figure 41: Histogram of “Cloud height (CRB)” for 2025-04-21 to 2025-04-22

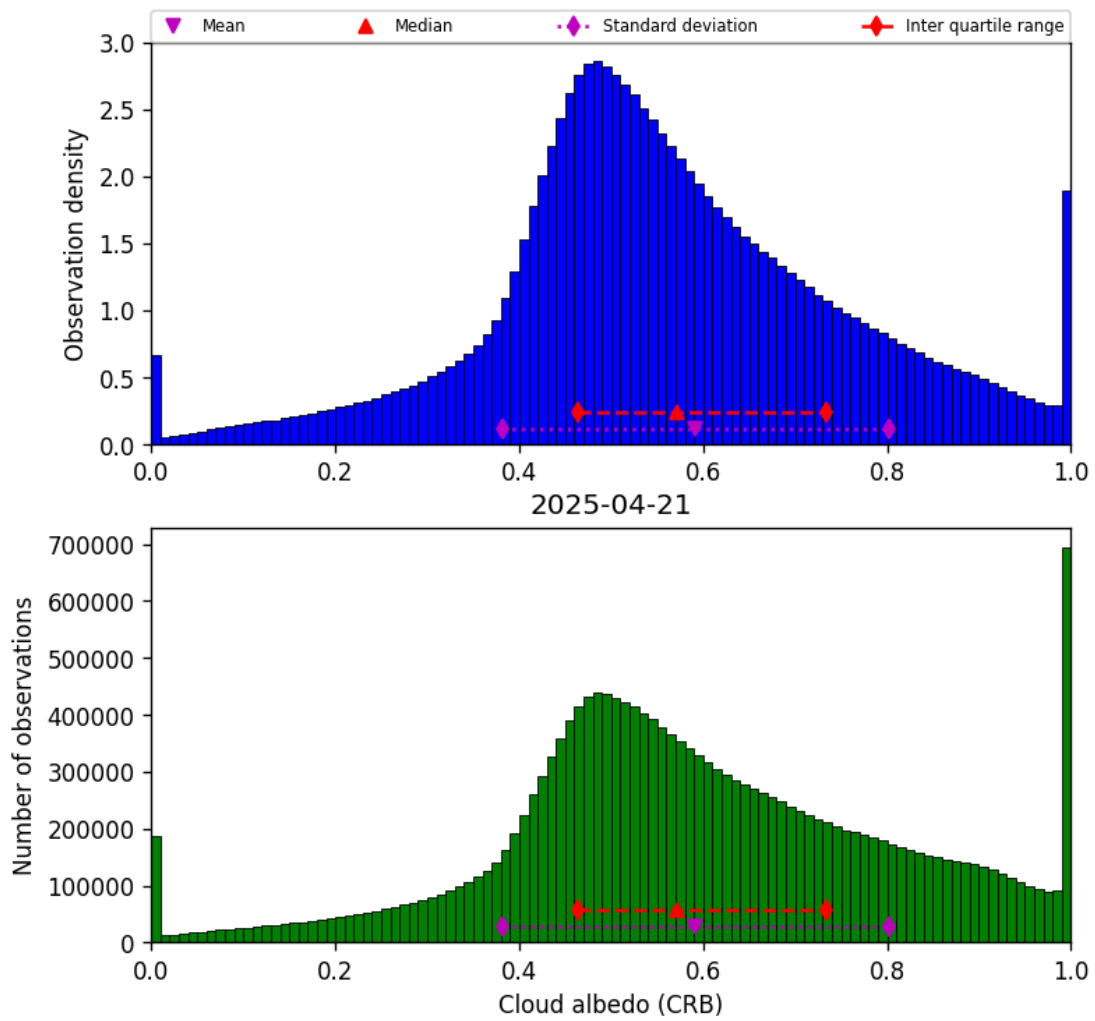


Figure 42: Histogram of “Cloud albedo (CRB)” for 2025-04-21 to 2025-04-22

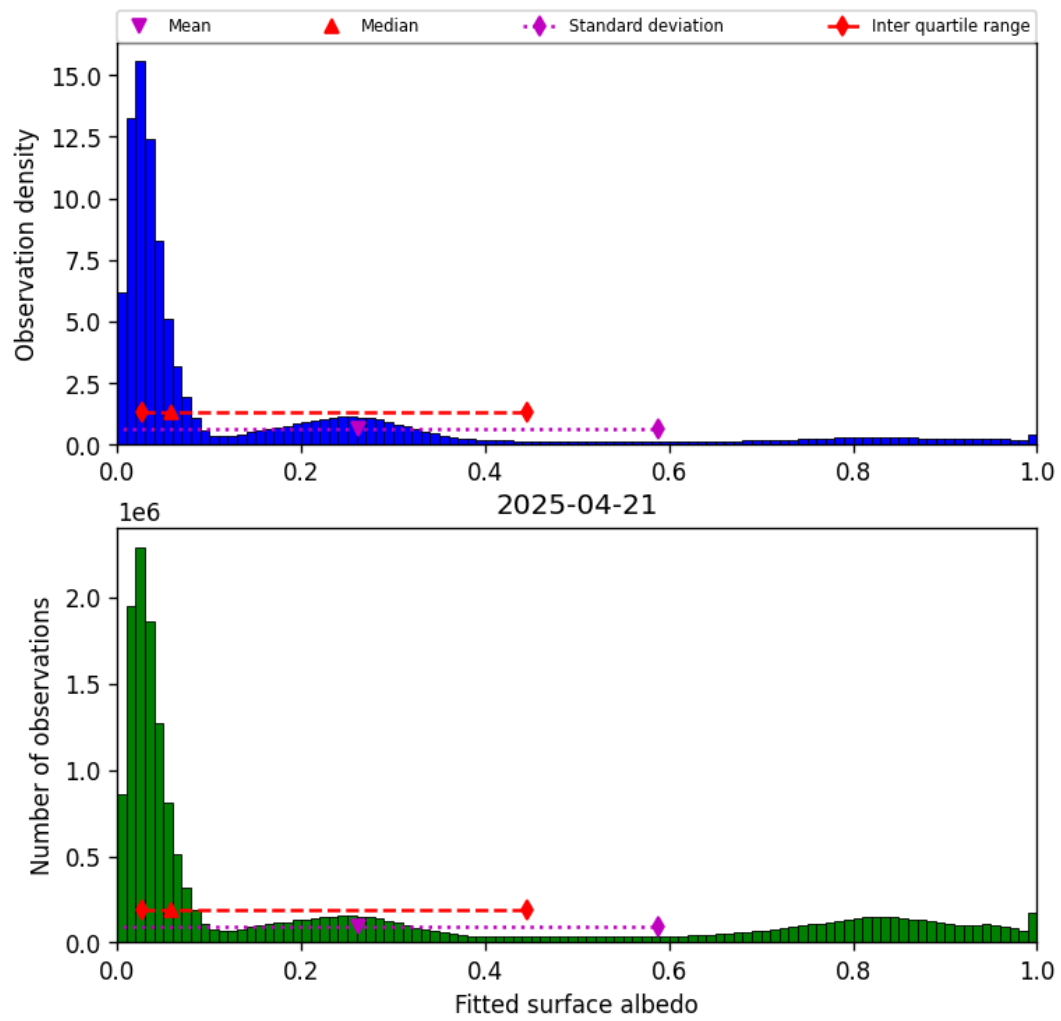


Figure 43: Histogram of “Fitted surface albedo” for 2025-04-21 to 2025-04-22

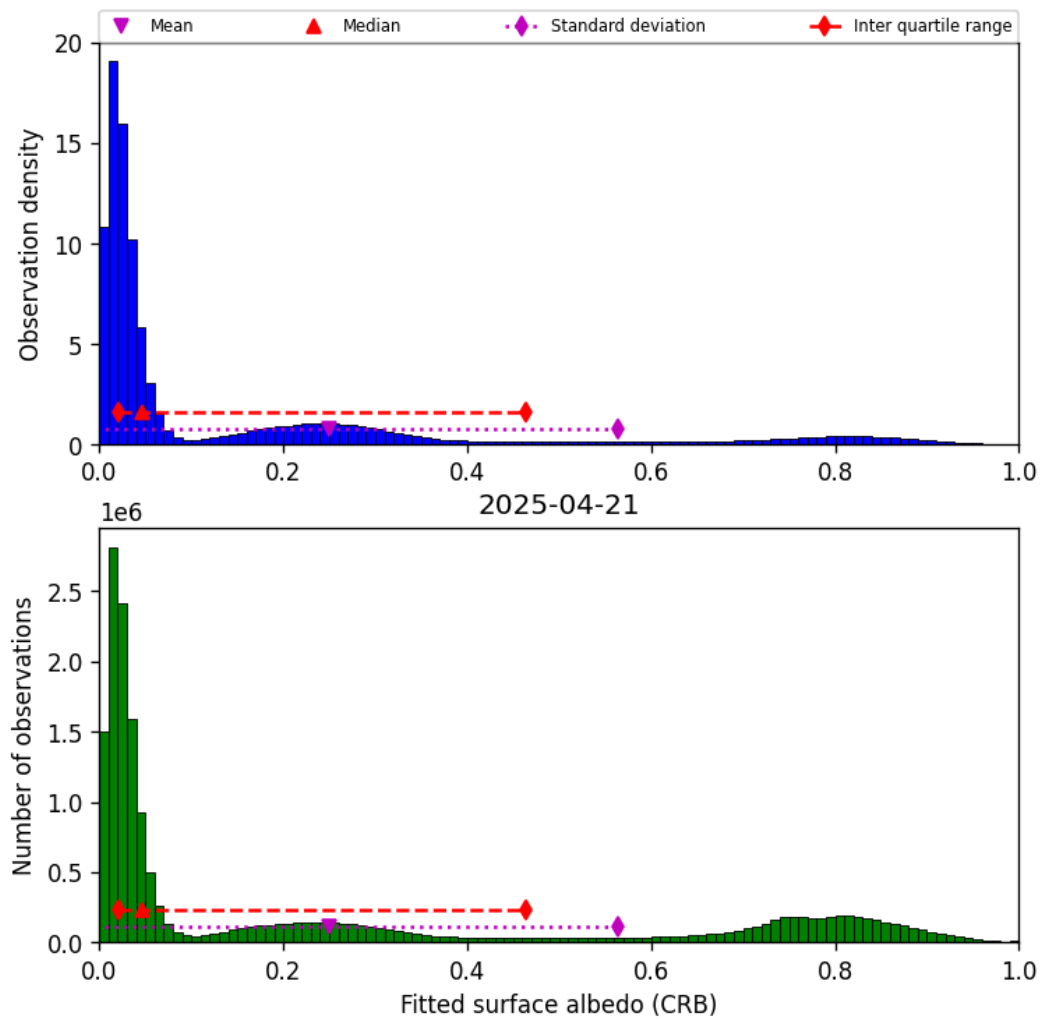


Figure 44: Histogram of “Fitted surface albedo (CRB)” for 2025-04-21 to 2025-04-22

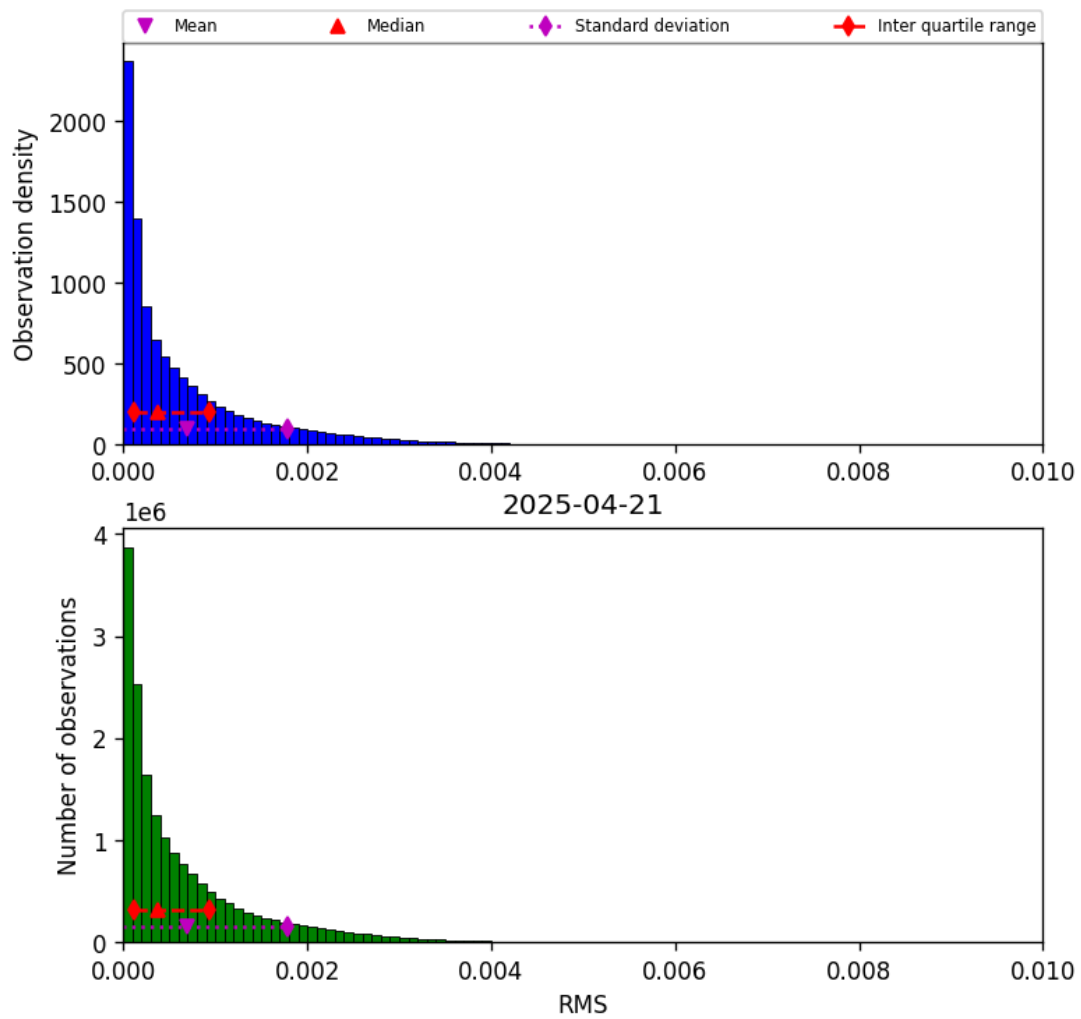


Figure 45: Histogram of “RMS” for 2025-04-21 to 2025-04-22

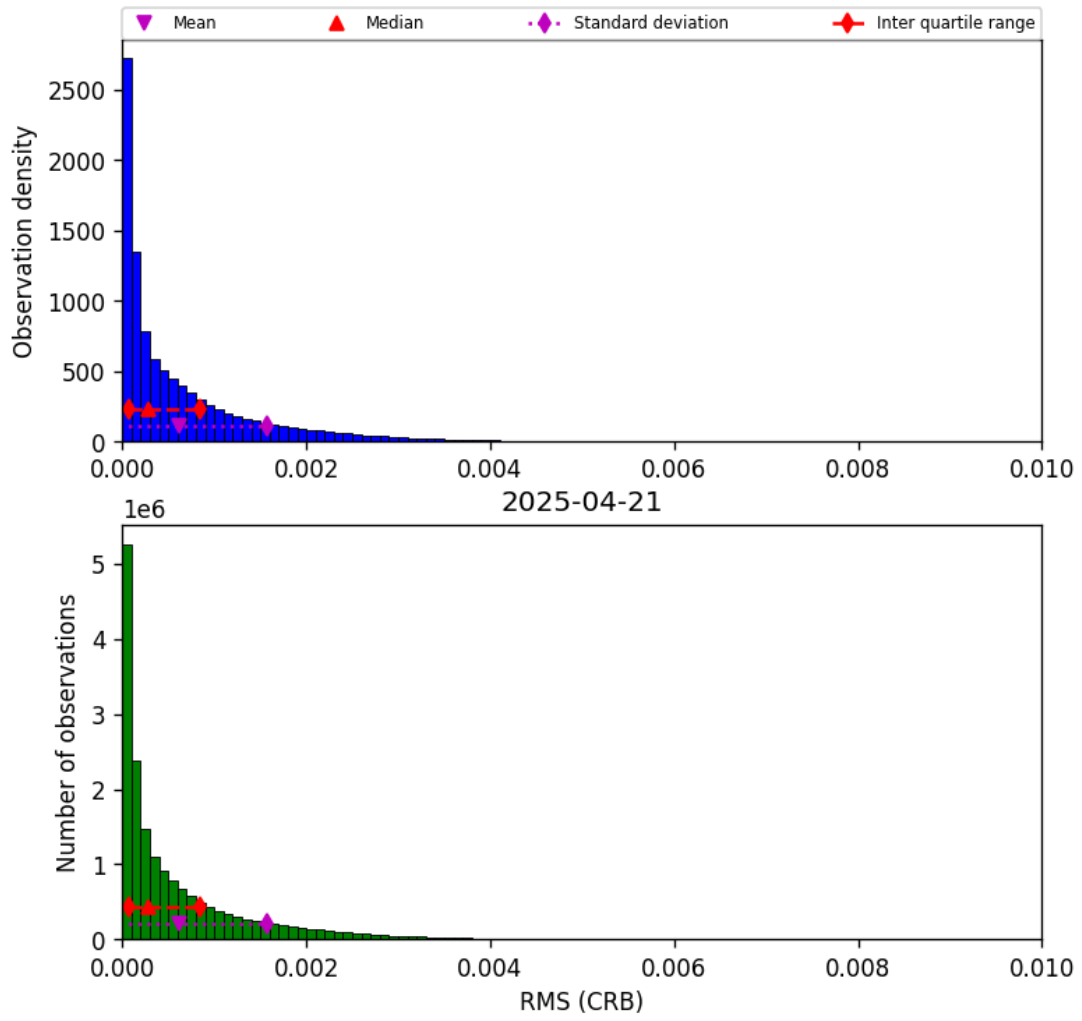


Figure 46: Histogram of “RMS (CRB)” for 2025-04-21 to 2025-04-22

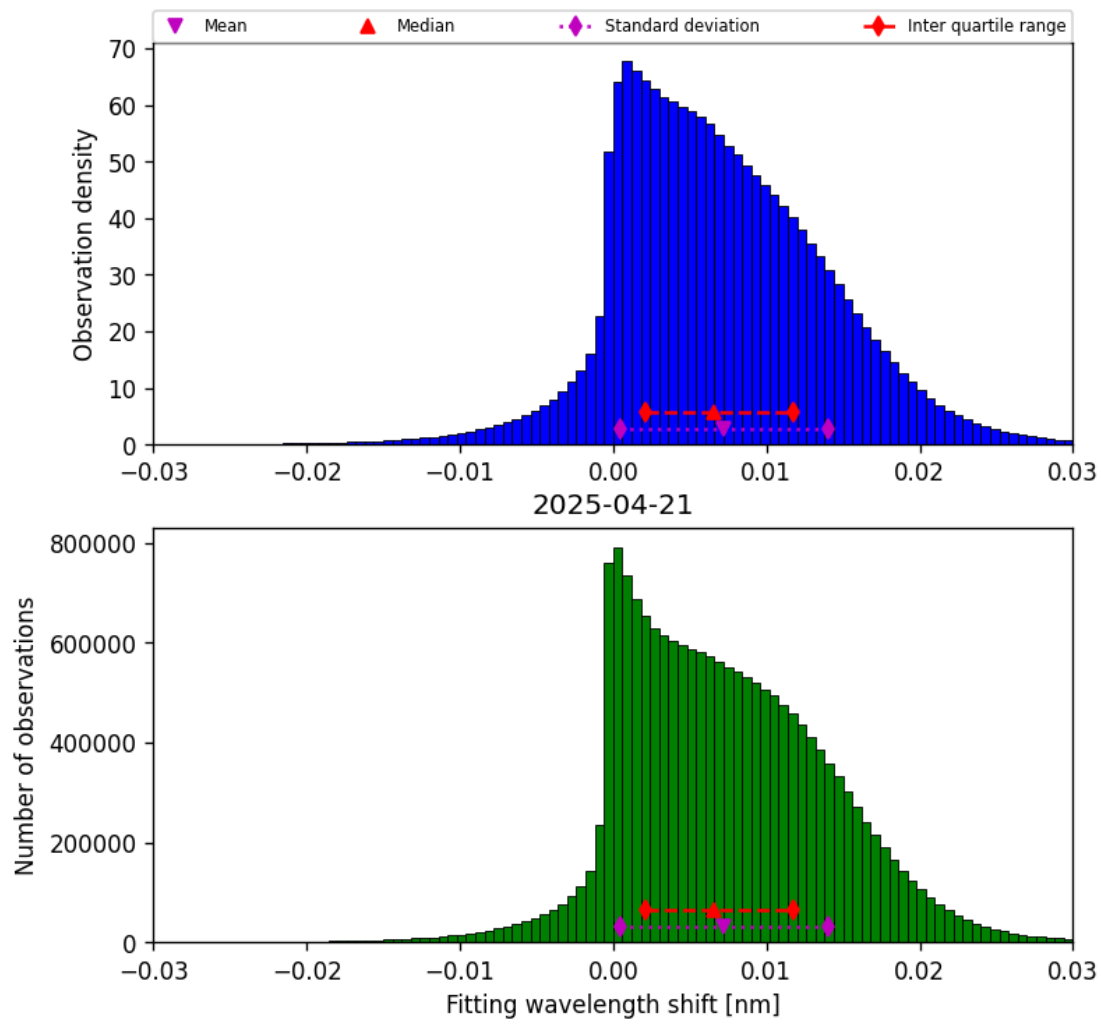


Figure 47: Histogram of “Fitting wavelength shift” for 2025-04-21 to 2025-04-22

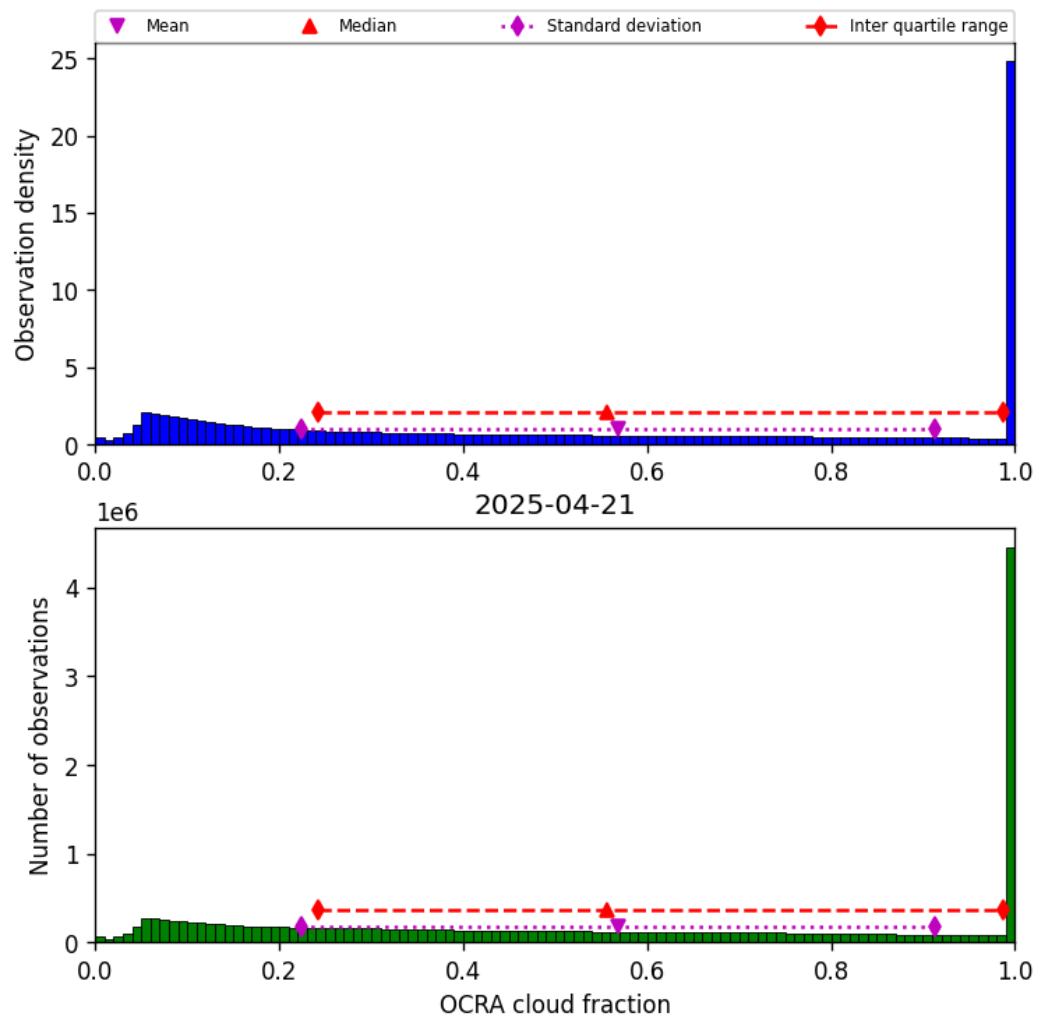


Figure 48: Histogram of “OCRA cloud fraction” for 2025-04-21 to 2025-04-22

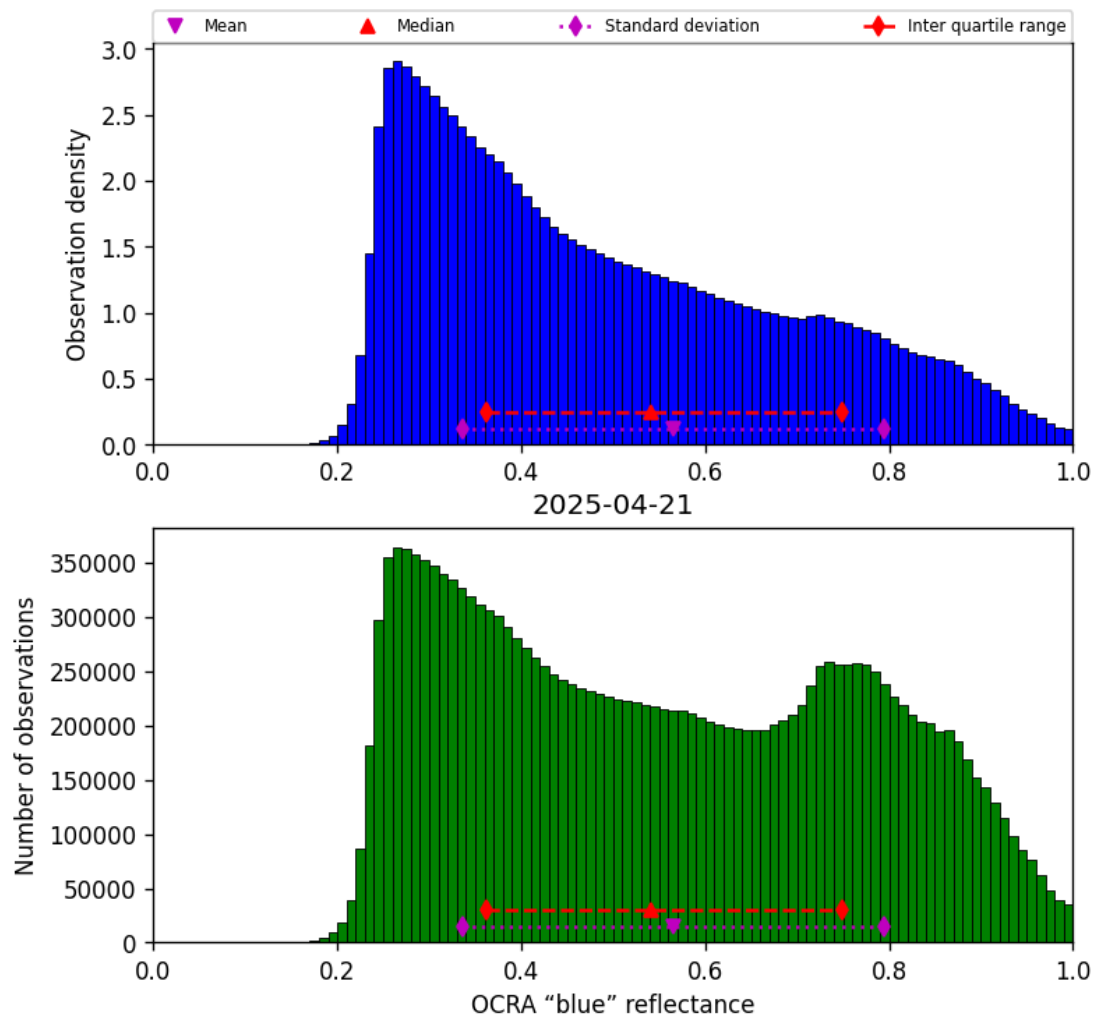


Figure 49: Histogram of "OCRA "blue" reflectance" for 2025-04-21 to 2025-04-22

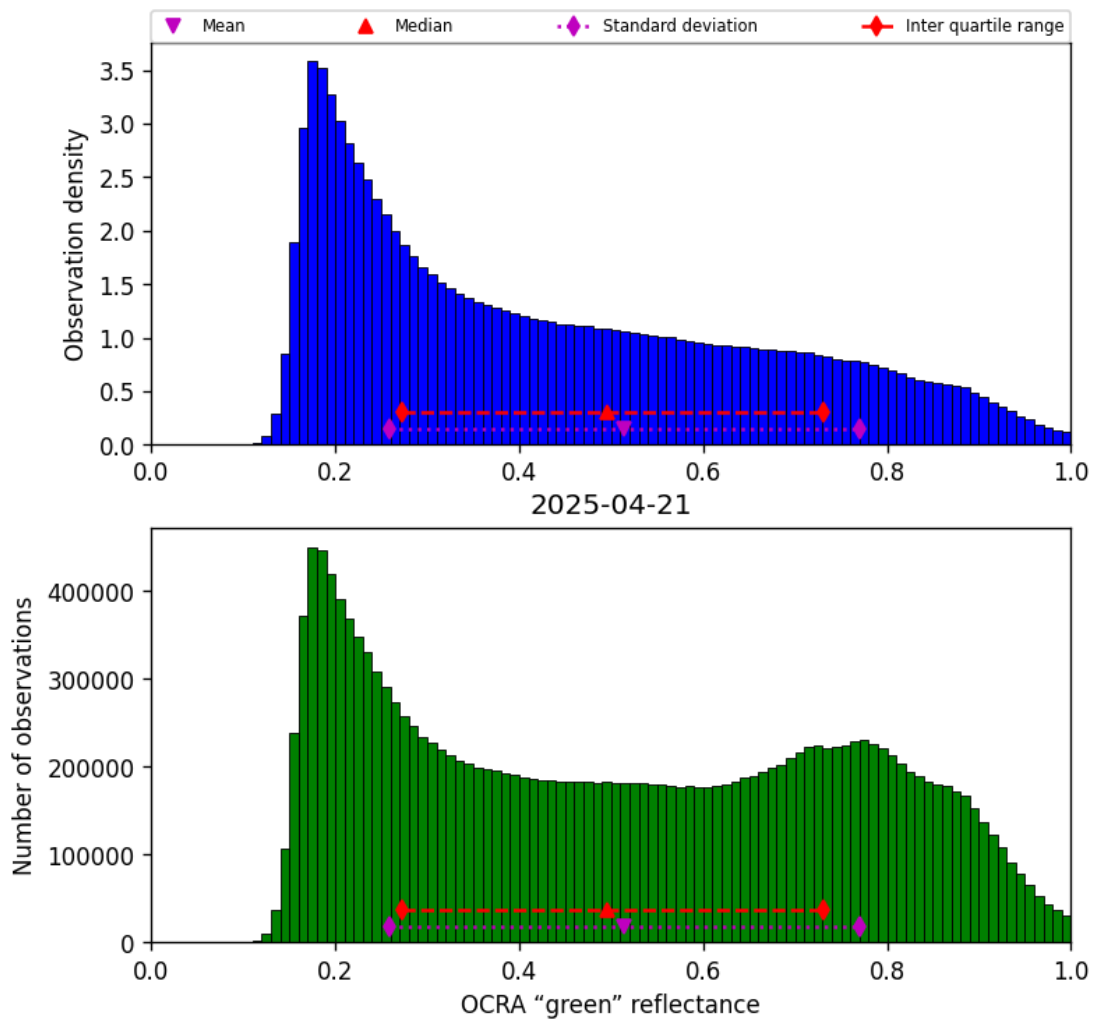


Figure 50: Histogram of “OCRA “green” reflectance” for 2025-04-21 to 2025-04-22

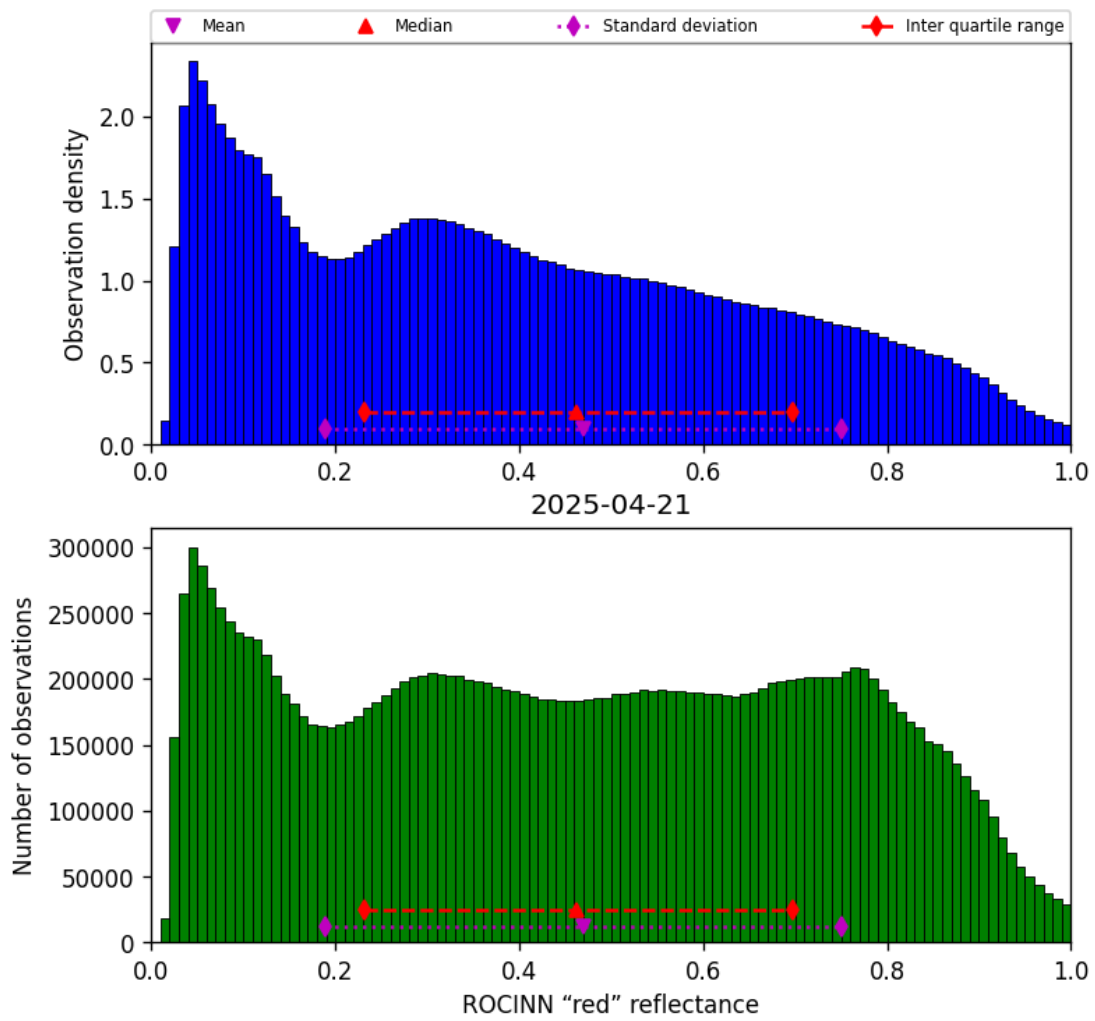


Figure 51: Histogram of “ROCINN “red” reflectance” for 2025-04-21 to 2025-04-22

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.

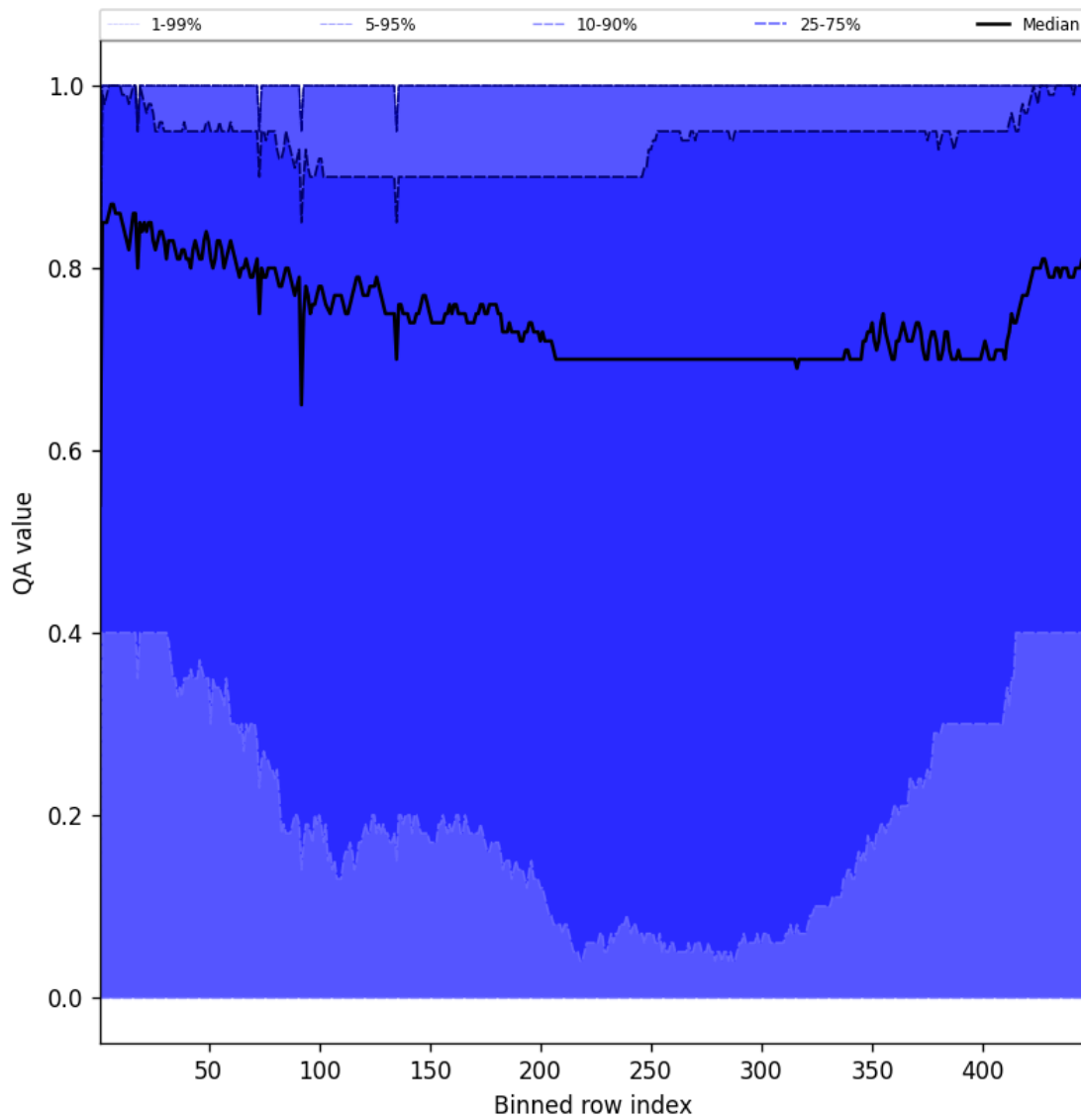


Figure 52: Along track statistics of “QA value” for 2025-04-21 to 2025-04-22

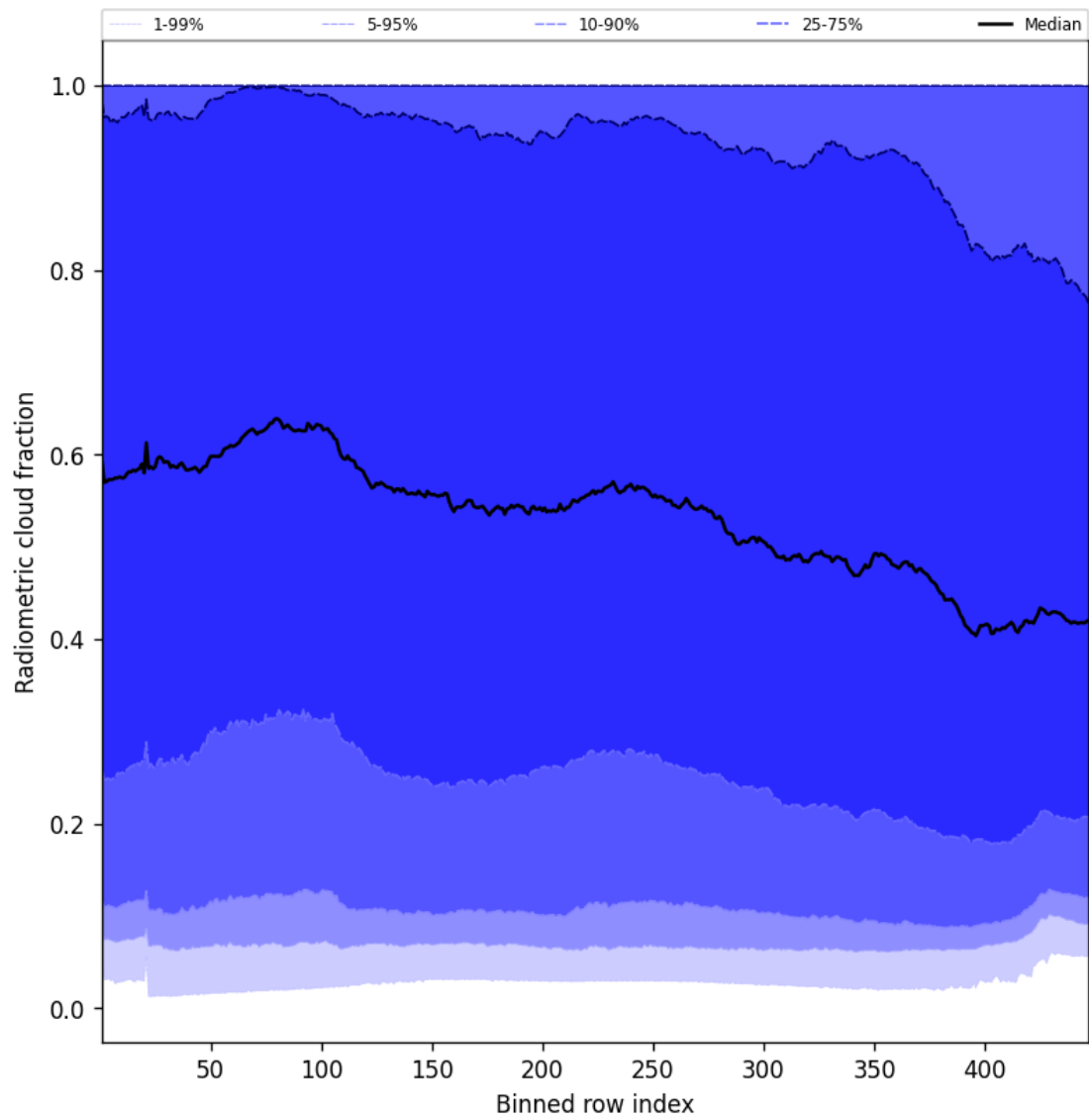


Figure 53: Along track statistics of “Radiometric cloud fraction” for 2025-04-21 to 2025-04-22

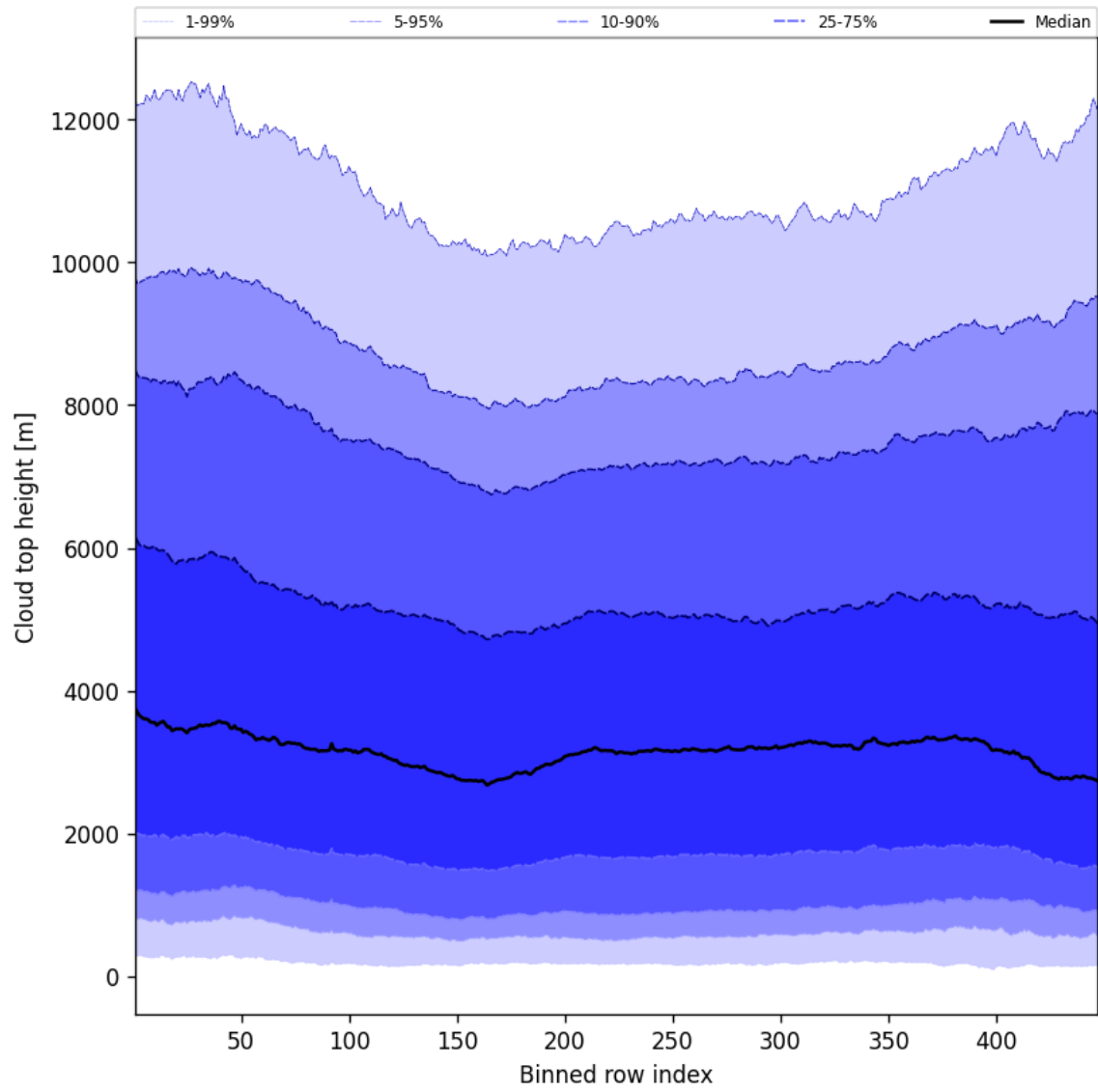


Figure 54: Along track statistics of “Cloud top height” for 2025-04-21 to 2025-04-22

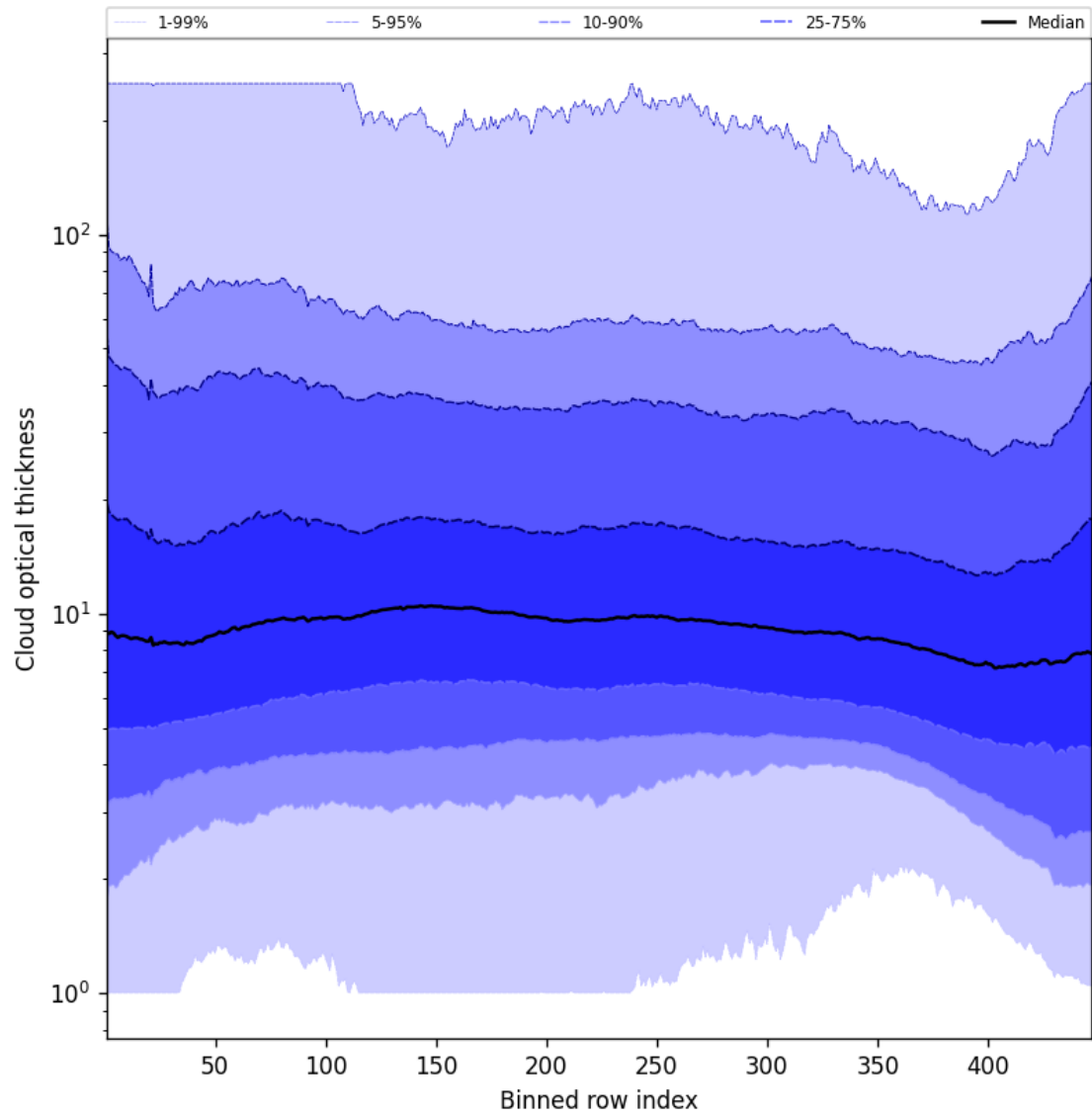


Figure 55: Along track statistics of “Cloud optical thickness” for 2025-04-21 to 2025-04-22

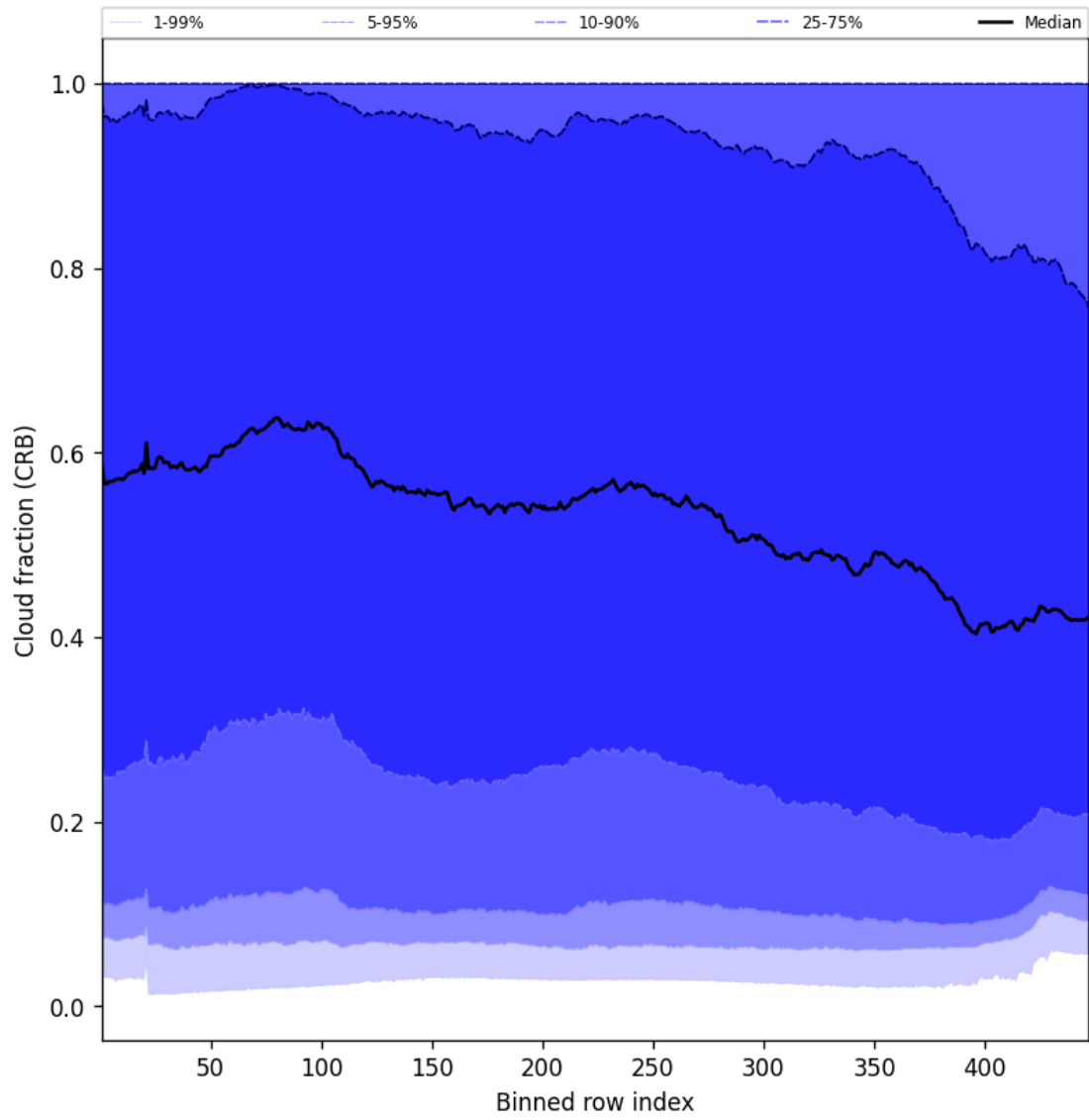


Figure 56: Along track statistics of “Cloud fraction (CRB)” for 2025-04-21 to 2025-04-22

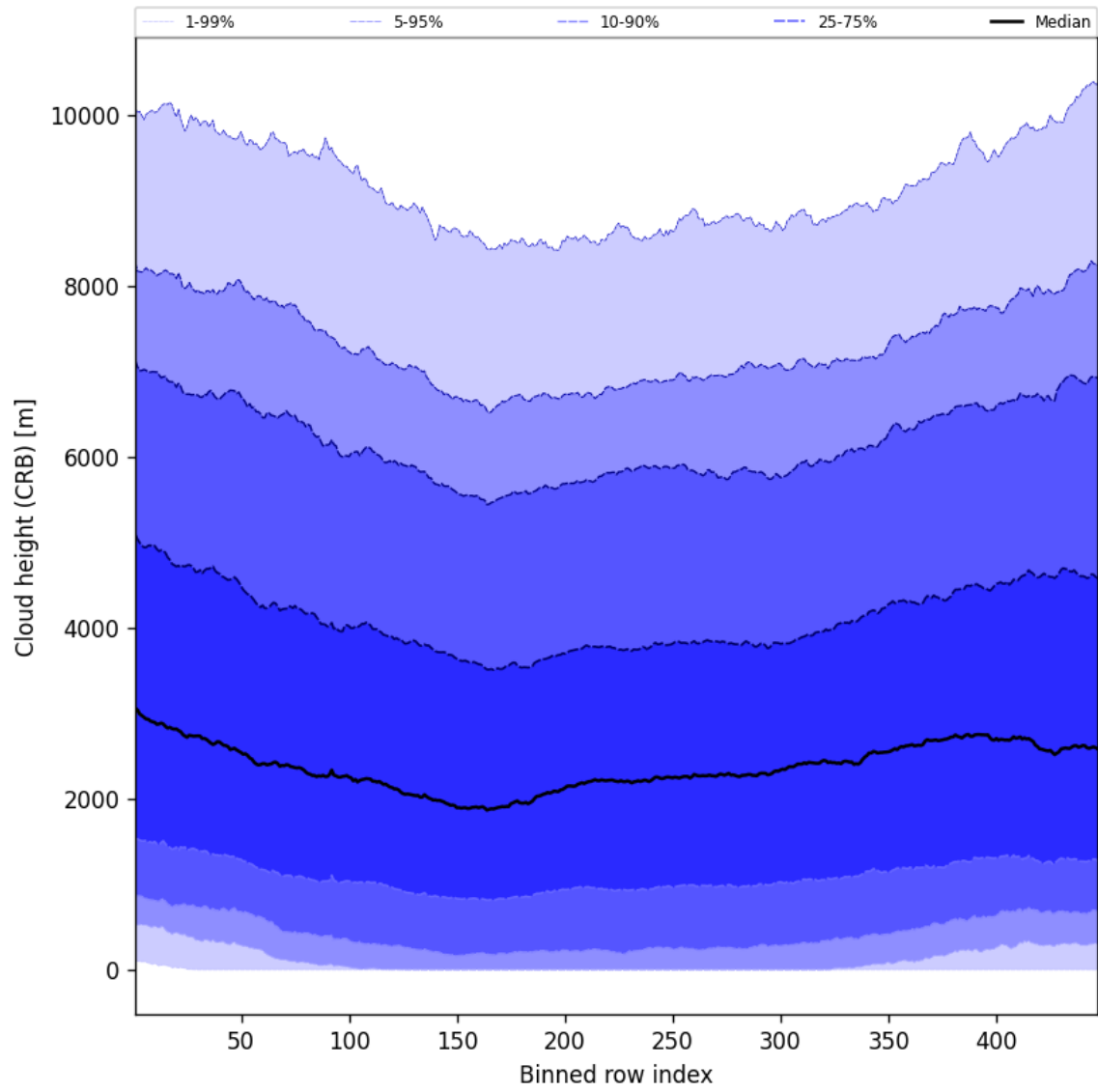


Figure 57: Along track statistics of “Cloud height (CRB)” for 2025-04-21 to 2025-04-22

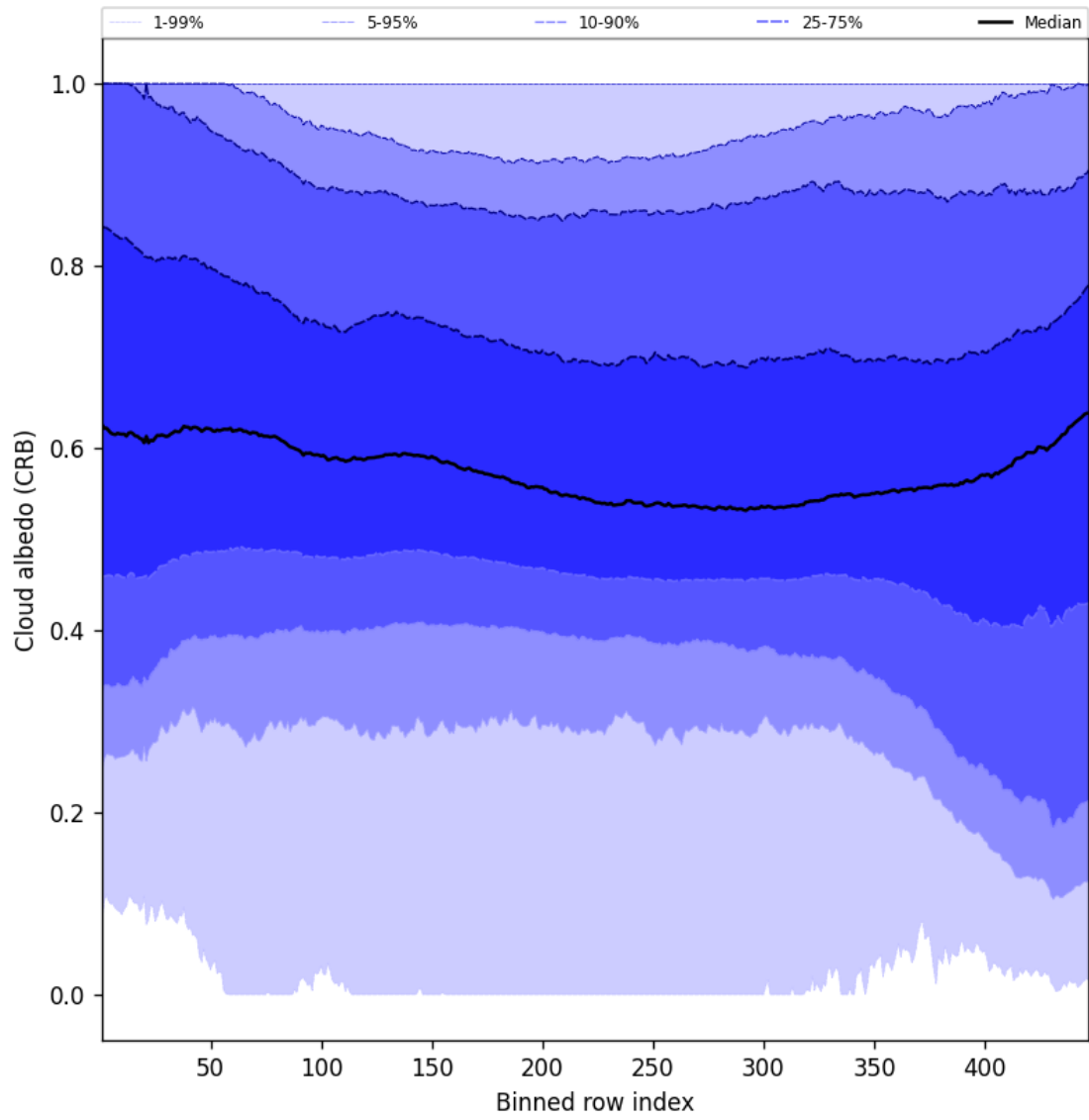


Figure 58: Along track statistics of “Cloud albedo (CRB)” for 2025-04-21 to 2025-04-22

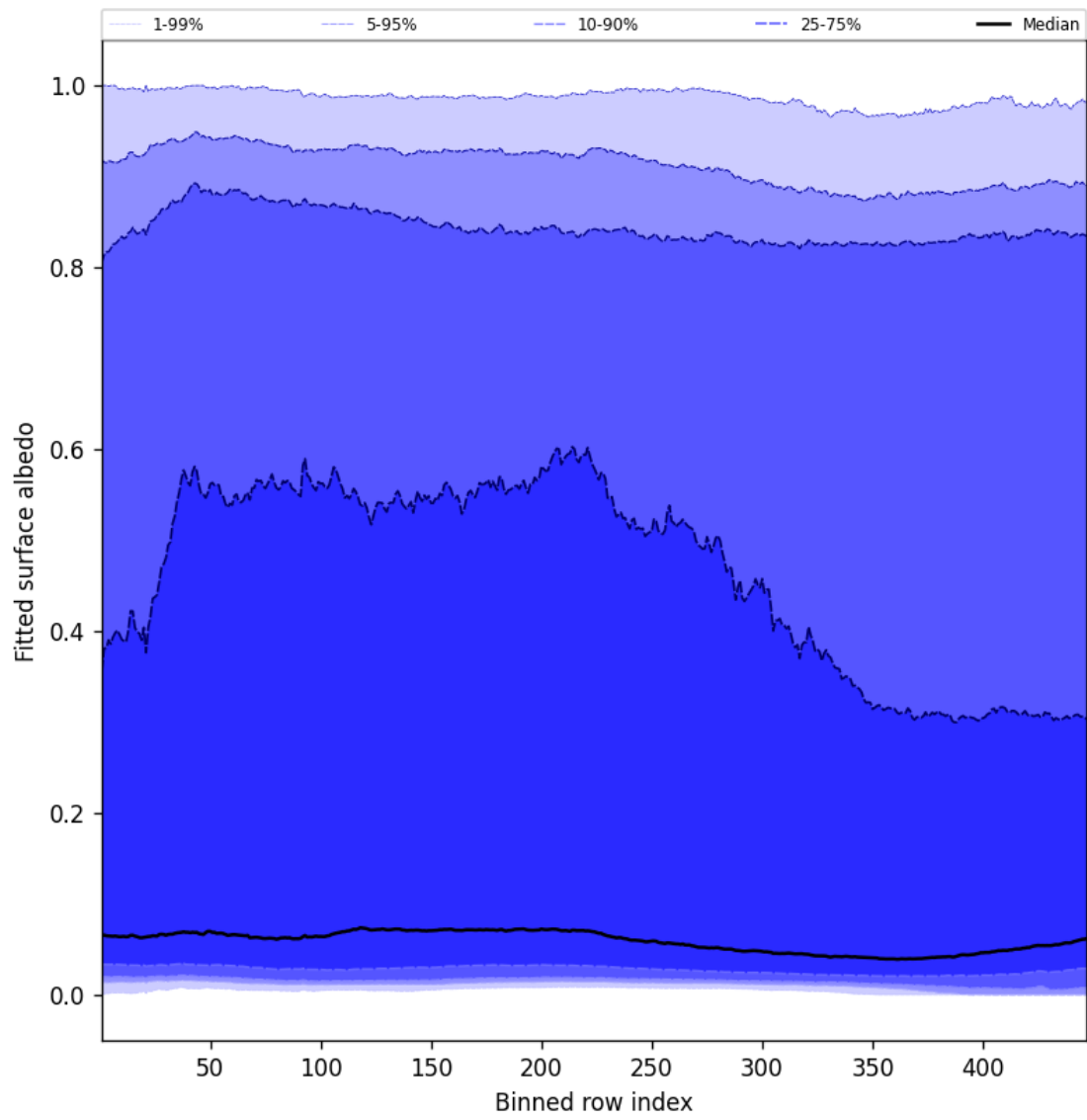


Figure 59: Along track statistics of “Fitted surface albedo” for 2025-04-21 to 2025-04-22

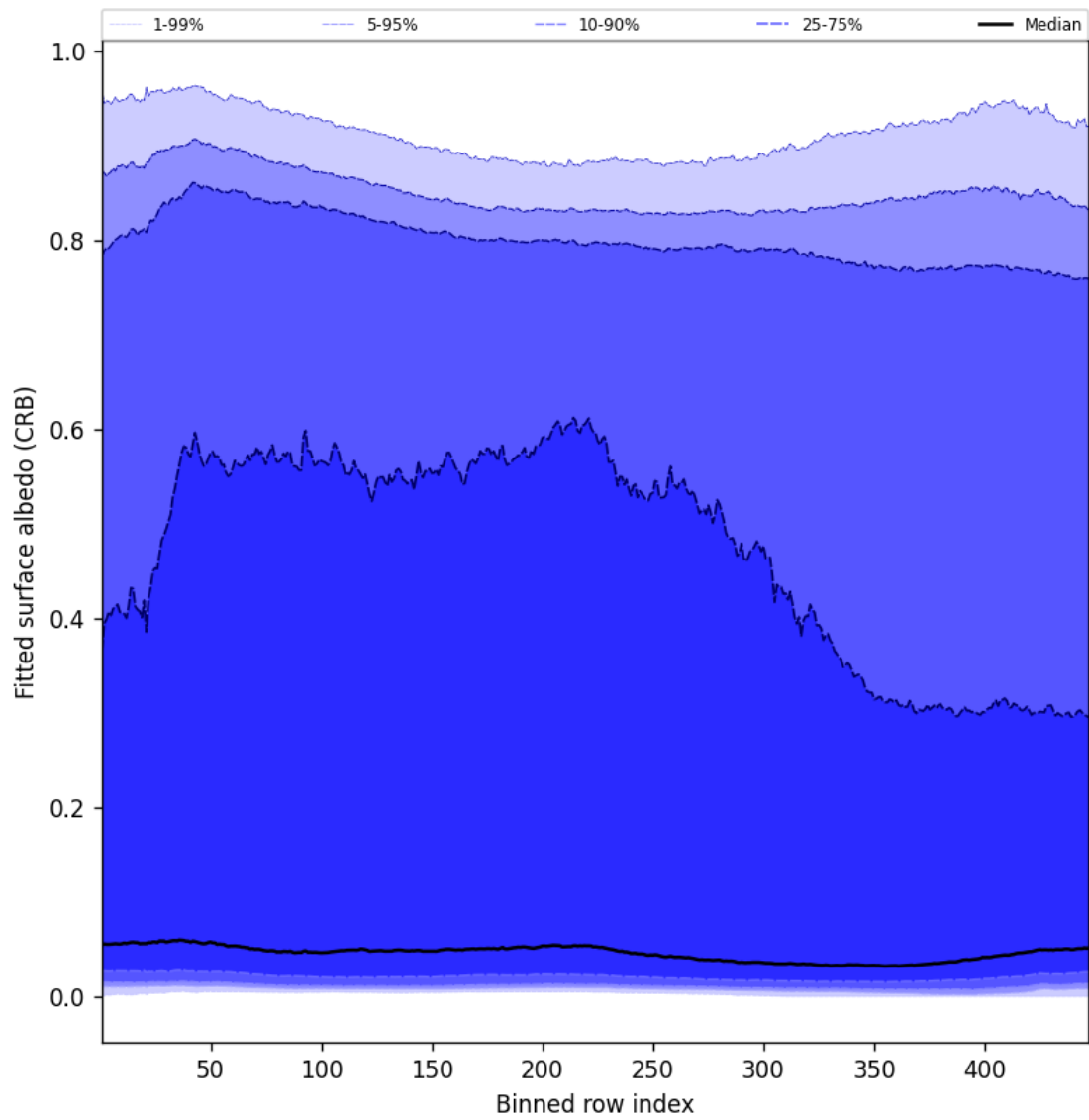


Figure 60: Along track statistics of “Fitted surface albedo (CRB)” for 2025-04-21 to 2025-04-22

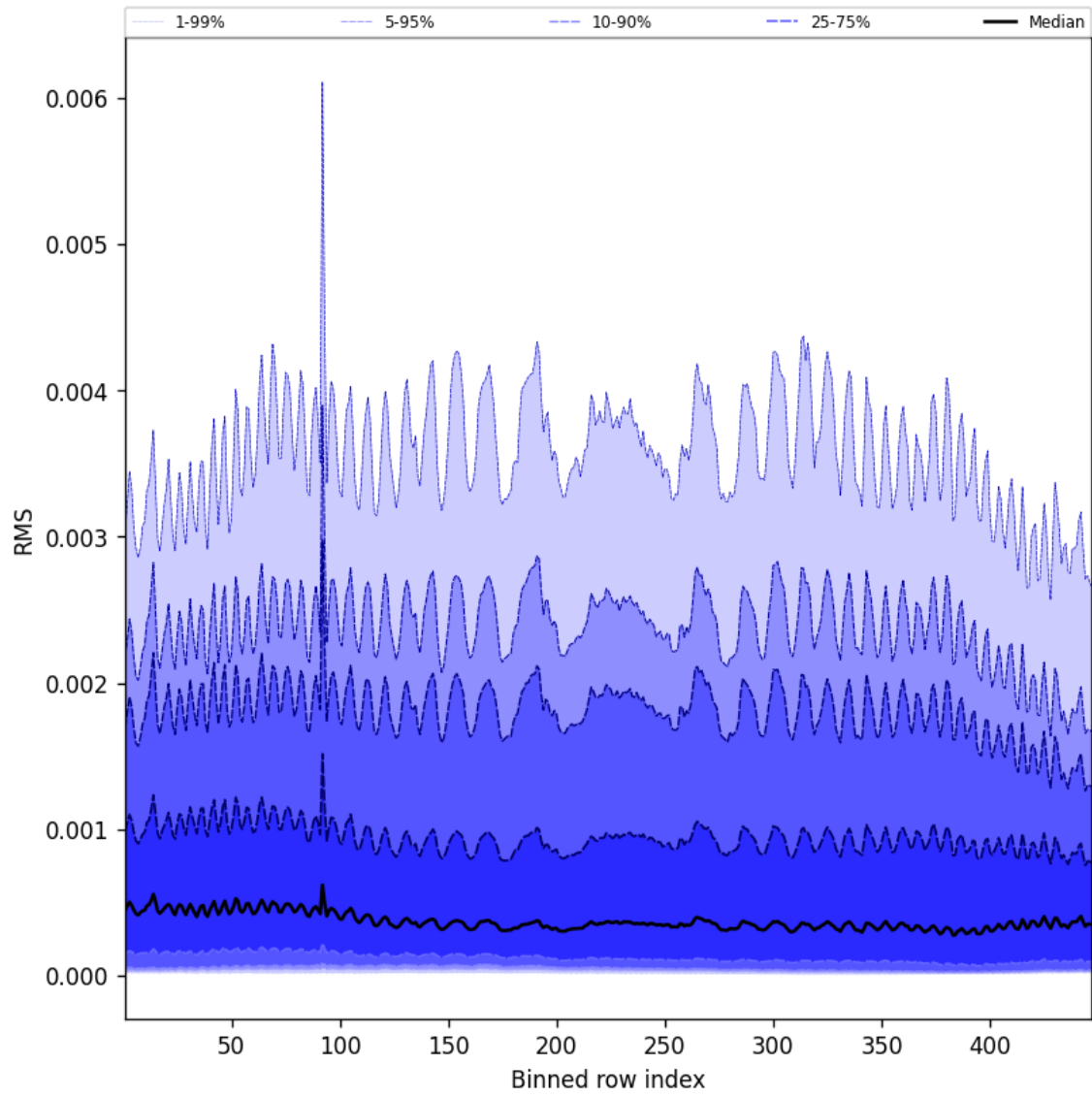


Figure 61: Along track statistics of “RMS” for 2025-04-21 to 2025-04-22

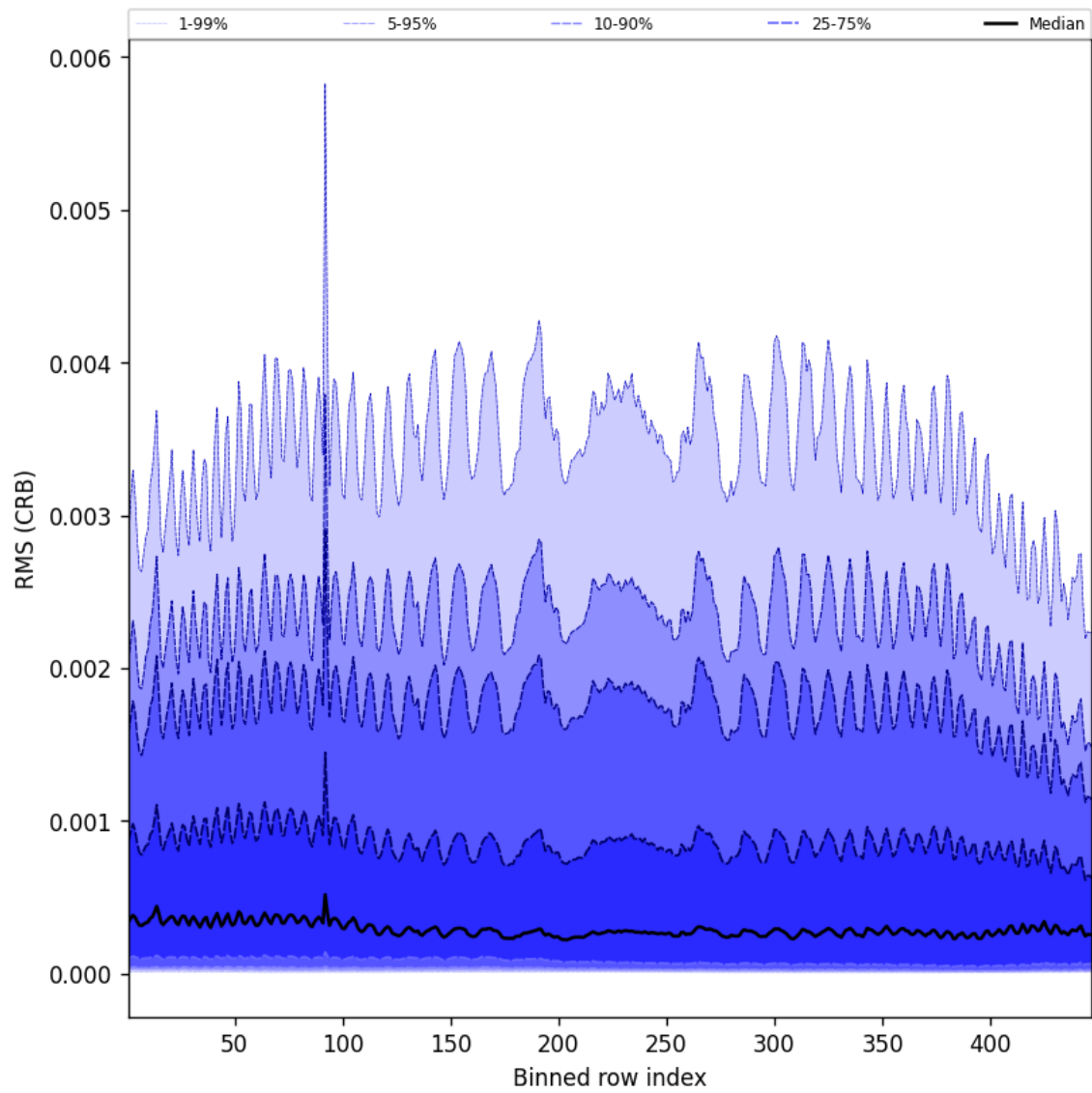


Figure 62: Along track statistics of “RMS (CRB)” for 2025-04-21 to 2025-04-22

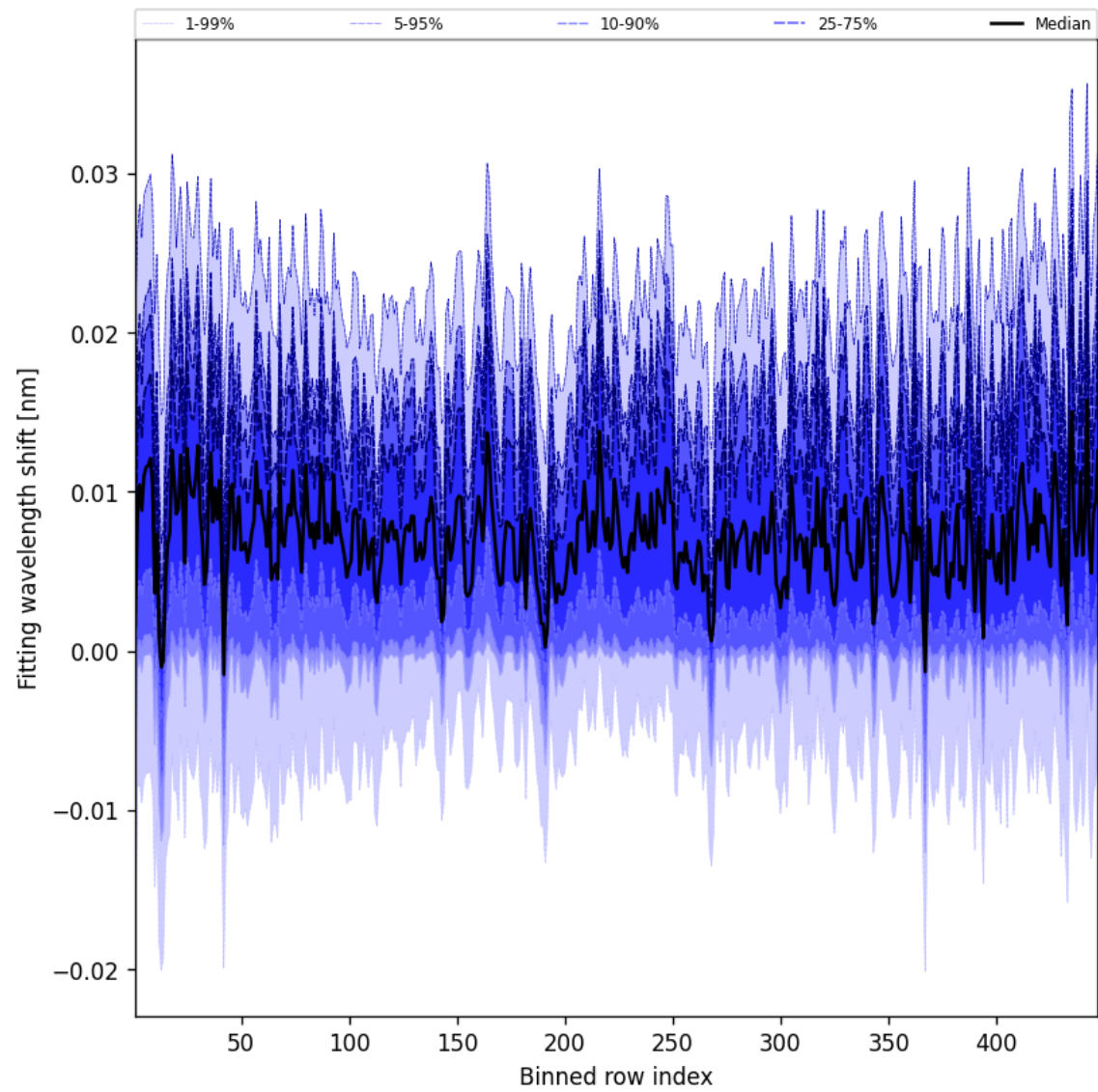


Figure 63: Along track statistics of “Fitting wavelength shift” for 2025-04-21 to 2025-04-22

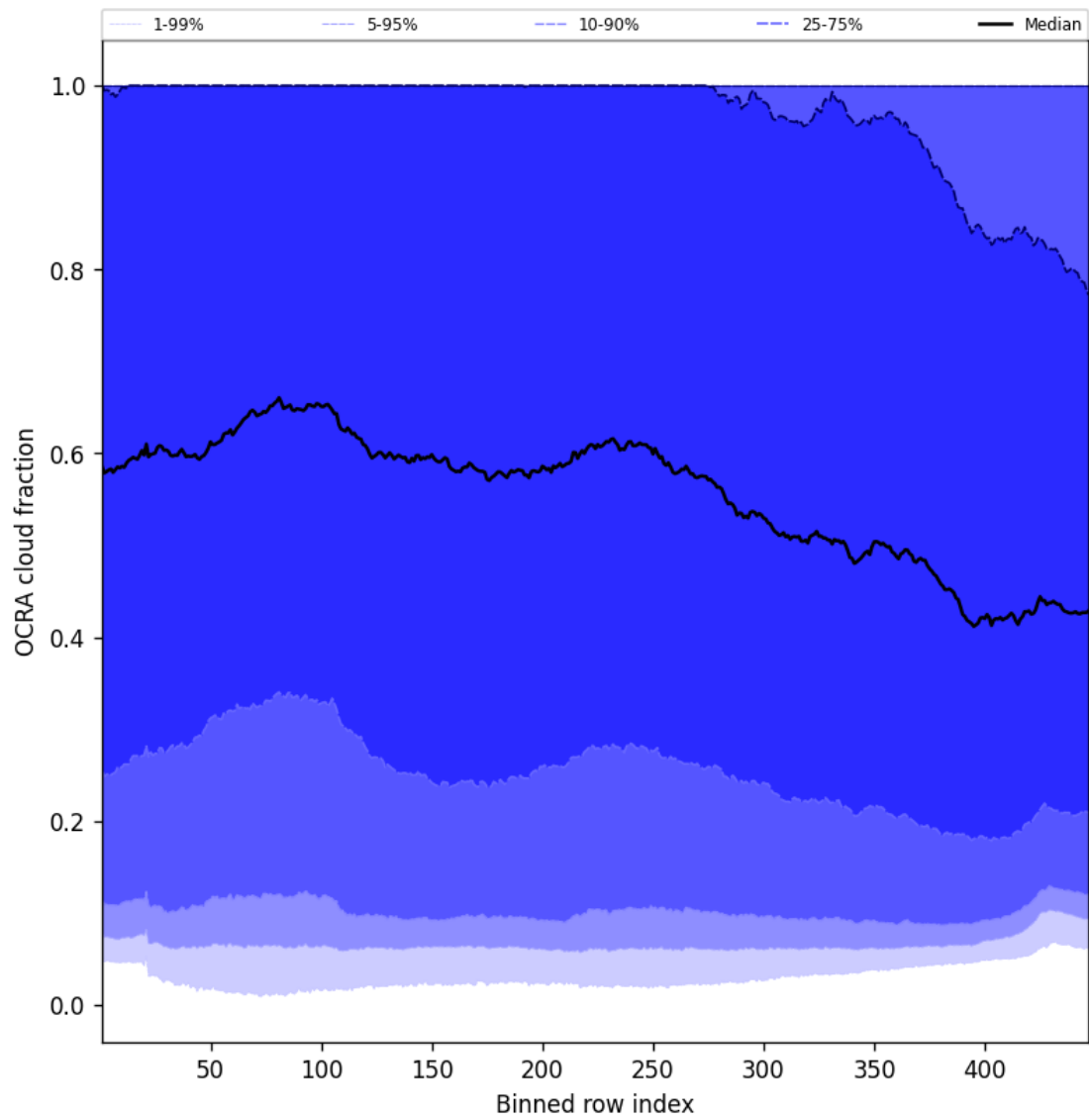


Figure 64: Along track statistics of “OCRA cloud fraction” for 2025-04-21 to 2025-04-22

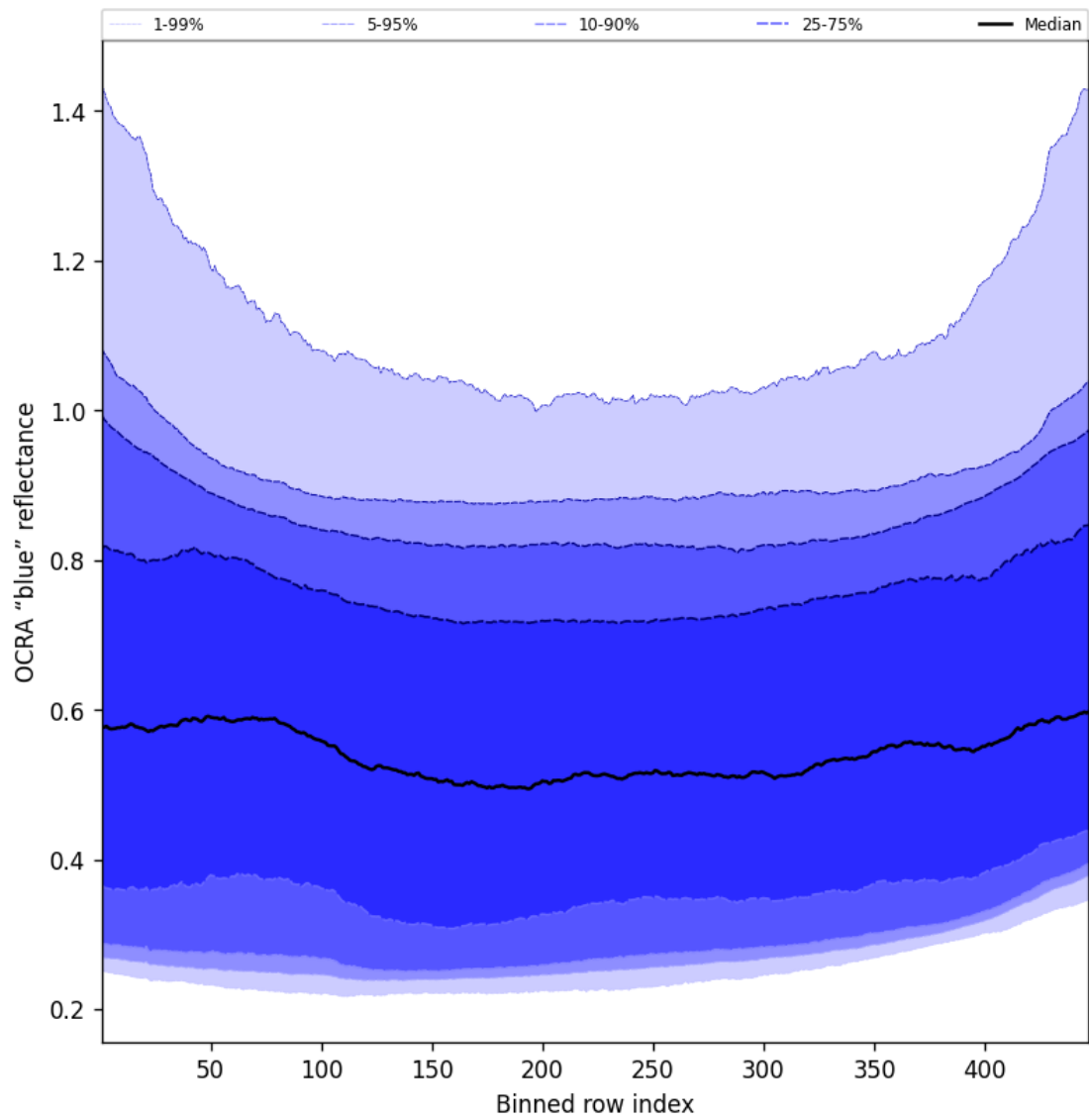


Figure 65: Along track statistics of “OCRA “blue” reflectance” for 2025-04-21 to 2025-04-22

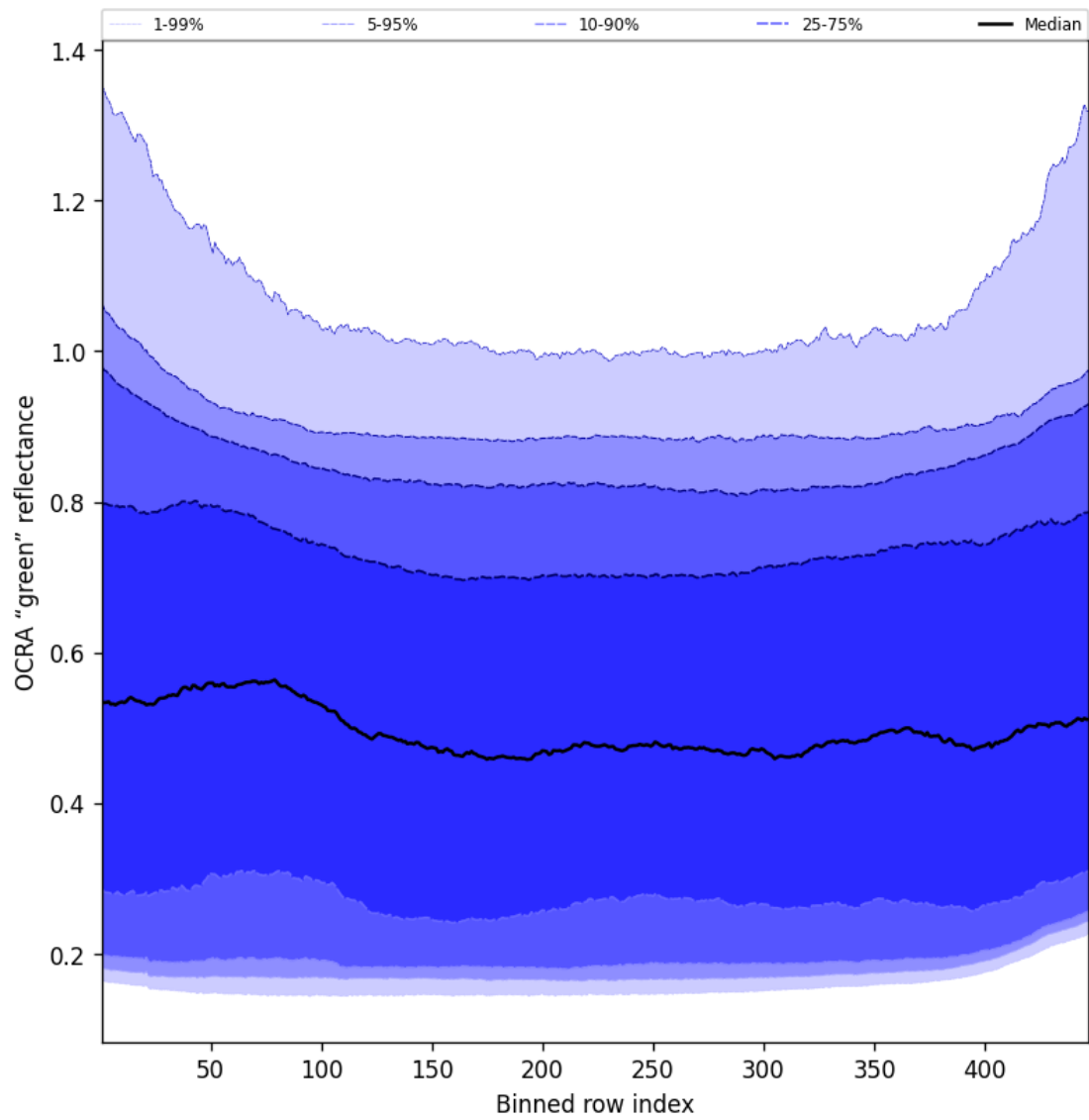


Figure 66: Along track statistics of “OCRA “green” reflectance” for 2025-04-21 to 2025-04-22

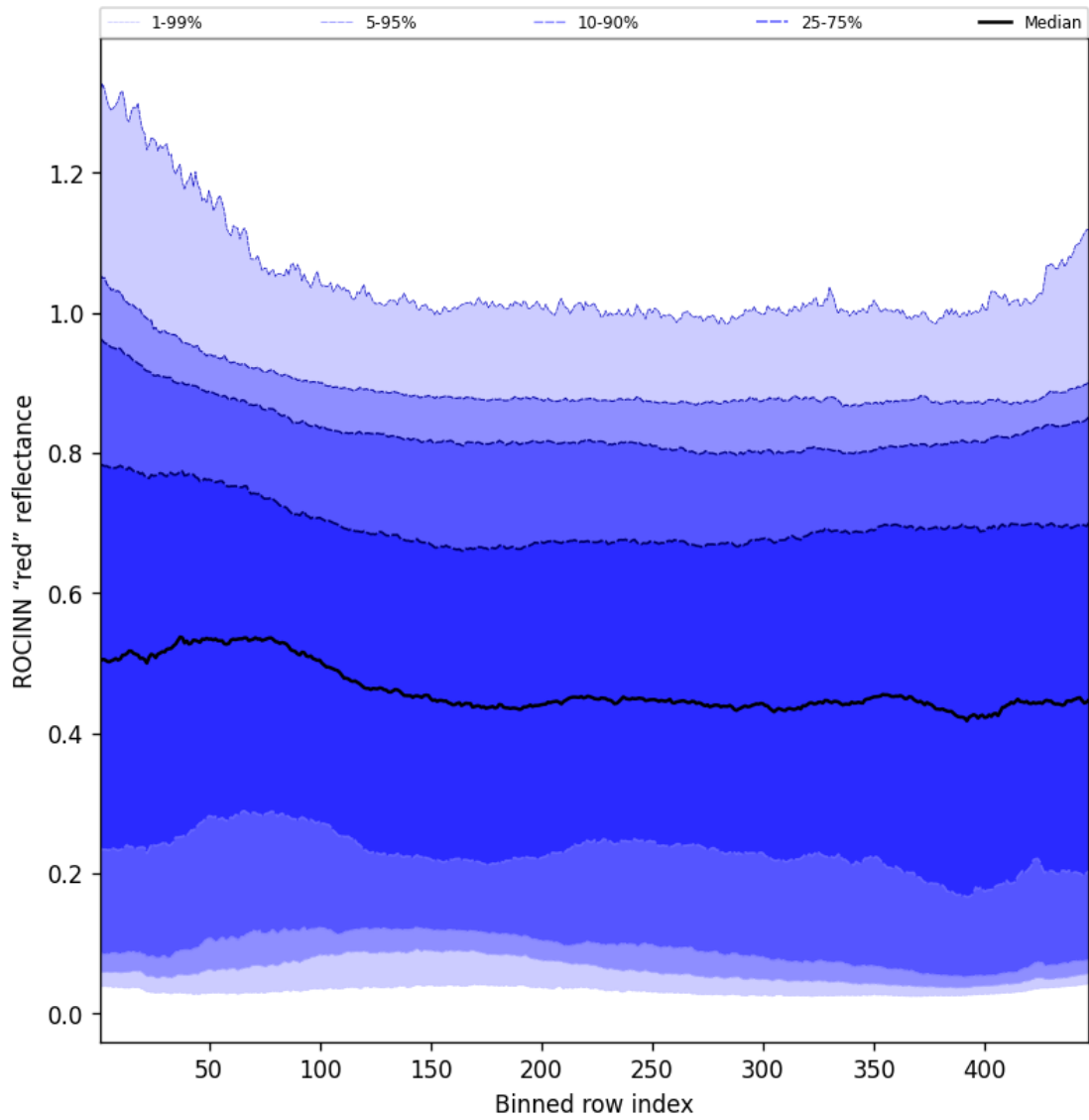


Figure 67: Along track statistics of “ROCINN “red” reflectance” for 2025-04-21 to 2025-04-22

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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