

PyCAMA report generated by tropl2-proc

tropl2-proc

2025-04-26 (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 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]	0.603 ± 0.387	17907914	0.995	0.730	0.770	0.0	1.000
cloud fraction [1]	0.562 ± 0.343	17907914	0.995	0.716	0.543	7.356×10^{-3}	1.000
cloud top height [m]	$(0.371 \pm 0.262) \times 10^4$	17907914	1.425×10^3	3.444×10^3	3.107×10^3	0.0	2.000×10^4
cloud optical thickness [1]	18.2 ± 31.7	17907914	5.13	10.6	9.22	1.000	250
cloud fraction crb [1]	0.561 ± 0.343	17907914	0.995	0.716	0.542	7.923×10^{-3}	1.000
cloud height crb [m]	$(0.285 \pm 0.227) \times 10^4$	17907914	75.0	2.959×10^3	2.356×10^3	0.0	2.000×10^4
cloud albedo crb [1]	0.585 ± 0.209	17907914	0.995	0.263	0.567	0.0	1.000
surface albedo fitted [1]	0.255 ± 0.319	17907914	2.500×10^{-2}	0.366	5.792×10^{-2}	0.0	1.000
surface albedo fitted crb [1]	0.244 ± 0.310	17907914	1.500×10^{-2}	0.388	4.564×10^{-2}	0.0	1.000
fitted root mean square [1]	$(7.091 \pm 15.018) \times 10^{-4}$	17907914	5.000×10^{-5}	8.212×10^{-4}	3.757×10^{-4}	1.061×10^{-6}	1.06
fitted root mean square crb [1]	$(6.344 \pm 12.759) \times 10^{-4}$	17907914	5.000×10^{-5}	7.891×10^{-4}	2.963×10^{-4}	1.440×10^{-6}	0.859
wavelength shift [nm]	$(7.273 \pm 6.808) \times 10^{-3}$	17907914	3.000×10^{-4}	9.545×10^{-3}	6.672×10^{-3}	-5.423×10^{-2}	0.443
cloud fraction apriori [1]	0.574 ± 0.348	17907914	0.995	0.760	0.570	0.0	1.000
reflectance blue ocra [1]	0.560 ± 0.224	17907914	0.265	0.377	0.537	0.137	1.94
reflectance green ocra [1]	0.510 ± 0.251	17907914	0.185	0.447	0.491	7.707×10^{-2}	1.91
reflectance continuum aband [1]	0.465 ± 0.276	17907914	4.500×10^{-2}	0.453	0.457	1.235×10^{-2}	5.03

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	0.950	1.000	1.000	1.000	1.000
cloud fraction [1]	2.641×10^{-2}	6.878×10^{-2}	0.106	0.153	0.236	0.953	1.000	1.000	1.000	1.000
cloud top height [m]	177	604	983	1.289×10^3	1.681×10^3	5.125×10^3	6.398×10^3	7.522×10^3	8.953×10^3	1.135×10^4
cloud optical thickness [1]	1.06	2.89	3.94	4.74	5.63	16.3	24.3	35.6	60.9	214
cloud fraction crb [1]	2.594×10^{-2}	6.787×10^{-2}	0.106	0.152	0.236	0.951	1.000	1.000	1.000	1.000
cloud height crb [m]	0.0	54.5	405	721	1.085×10^3	4.044×10^3	5.224×10^3	6.259×10^3	7.428×10^3	9.425×10^3
cloud albedo crb [1]	0.0	0.229	0.347	0.411	0.461	0.724	0.809	0.879	0.953	1.000
surface albedo fitted [1]	0.0	9.879×10^{-3}	1.510×10^{-2}	1.989×10^{-2}	2.693×10^{-2}	0.393	0.742	0.833	0.913	0.992
surface albedo fitted crb [1]	7.282×10^{-4}	7.014×10^{-3}	1.077×10^{-2}	1.457×10^{-2}	2.046×10^{-2}	0.409	0.735	0.803	0.855	0.924
fitted root mean square [1]	1.392×10^{-5}	2.800×10^{-5}	4.545×10^{-5}	7.217×10^{-5}	1.238×10^{-4}	9.449×10^{-4}	1.379×10^{-3}	1.821×10^{-3}	2.426×10^{-3}	3.768×10^{-3}
fitted root mean square crb [1]	7.098×10^{-6}	1.719×10^{-5}	2.913×10^{-5}	4.563×10^{-5}	8.156×10^{-5}	8.707×10^{-4}	1.305×10^{-3}	1.747×10^{-3}	2.350×10^{-3}	3.572×10^{-3}
wavelength shift [nm]	-8.287×10^{-3}	-1.380×10^{-3}	-1.035×10^{-4}	7.026×10^{-4}	2.174×10^{-3}	1.172×10^{-2}	1.411×10^{-2}	1.616×10^{-2}	1.887×10^{-2}	2.475×10^{-2}
cloud fraction apriori [1]	2.839×10^{-2}	6.535×10^{-2}	0.101	0.149	0.240	1.000	1.000	1.000	1.000	1.000
reflectance blue ocra [1]	0.233	0.258	0.282	0.312	0.363	0.740	0.807	0.861	0.919	1.10
reflectance green ocra [1]	0.152	0.173	0.194	0.221	0.275	0.721	0.794	0.850	0.908	1.05
reflectance continuum aband [1]	2.989×10^{-2}	5.537×10^{-2}	9.120×10^{-2}	0.139	0.232	0.685	0.767	0.828	0.894	1.05

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]	0.540 ± 0.386	10451377	0.870	0.670	0.0	1.000	3.000×10^{-2}	0.900
cloud fraction [1]	0.550 ± 0.345	10451377	0.731	0.509	7.356×10^{-3}	1.000	0.223	0.955
cloud top height [m]	$(0.345 \pm 0.259) \times 10^4$	10451377	3.307×10^3	2.878×10^3	0.0	2.000×10^4	1.465×10^3	4.772×10^3
cloud optical thickness [1]	13.4 ± 24.0	10451377	7.25	7.88	1.000	250	5.06	12.3
cloud fraction crb [1]	0.550 ± 0.346	10451377	0.732	0.509	7.923×10^{-3}	1.000	0.223	0.955
cloud height crb [m]	$(0.250 \pm 0.218) \times 10^4$	10451377	2.762×10^3	2.058×10^3	0.0	2.000×10^4	787	3.550×10^3
cloud albedo crb [1]	0.595 ± 0.231	10451377	0.315	0.582	0.0	1.000	0.453	0.769
surface albedo fitted [1]	0.373 ± 0.354	10451377	0.717	0.240	0.0	1.000	3.731×10^{-2}	0.755
surface albedo fitted crb [1]	0.361 ± 0.341	10451377	0.714	0.239	0.0	1.000	3.064×10^{-2}	0.745
fitted root mean square [1]	$(9.254 \pm 18.874) \times 10^{-4}$	10451377	1.113×10^{-3}	5.723×10^{-4}	2.125×10^{-6}	1.06	1.900×10^{-4}	1.303×10^{-3}
fitted root mean square crb [1]	$(8.247 \pm 15.884) \times 10^{-4}$	10451377	1.082×10^{-3}	4.624×10^{-4}	1.452×10^{-6}	0.859	1.310×10^{-4}	1.213×10^{-3}
wavelength shift [nm]	$(8.501 \pm 6.853) \times 10^{-3}$	10451377	9.563×10^{-3}	8.257×10^{-3}	-5.423×10^{-2}	0.443	3.534×10^{-3}	1.310×10^{-2}
cloud fraction apriori [1]	0.571 ± 0.349	10451377	0.764	0.555	0.0	1.000	0.236	1.000
reflectance blue ocrs [1]	0.588 ± 0.238	10451377	0.424	0.601	0.137	1.94	0.360	0.784
reflectance green ocrs [1]	0.547 ± 0.264	10451377	0.493	0.573	8.641×10^{-2}	1.91	0.279	0.773
reflectance continuum aband [1]	0.514 ± 0.279	10451377	0.465	0.546	1.377×10^{-2}	3.95	0.276	0.741

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]	0.691 ± 0.371	7456537	0.600	0.900	0.0	1.000	0.400	1.000
cloud fraction [1]	0.580 ± 0.339	7456537	0.691	0.590	7.906×10^{-3}	1.000	0.259	0.950
cloud top height [m]	$(0.408 \pm 0.262) \times 10^4$	7456537	3.724×10^3	3.448×10^3	0.0	2.000×10^4	1.940×10^3	5.663×10^3
cloud optical thickness [1]	24.9 ± 39.0	7456537	16.2	11.8	1.000	250	7.36	23.6
cloud fraction crb [1]	0.578 ± 0.339	7456537	0.691	0.586	8.521×10^{-3}	1.000	0.257	0.947
cloud height crb [m]	$(0.334 \pm 0.231) \times 10^4$	7456537	3.370×10^3	2.776×10^3	0.0	1.962×10^4	1.419×10^3	4.789×10^3
cloud albedo crb [1]	0.571 ± 0.171	7456537	0.200	0.554	0.0	1.000	0.469	0.669
surface albedo fitted [1]	$(8.863 \pm 14.884) \times 10^{-2}$	7456537	4.553×10^{-2}	3.502×10^{-2}	0.0	1.000	2.036×10^{-2}	6.589×10^{-2}
surface albedo fitted crb [1]	$(7.994 \pm 14.655) \times 10^{-2}$	7456537	3.633×10^{-2}	2.617×10^{-2}	0.0	1.000	1.418×10^{-2}	5.052×10^{-2}
fitted root mean square [1]	$(4.059 \pm 5.160) \times 10^{-4}$	7456537	4.428×10^{-4}	2.163×10^{-4}	1.061×10^{-6}	3.319×10^{-2}	8.376×10^{-5}	5.265×10^{-4}
fitted root mean square crb [1]	$(3.676 \pm 5.014) \times 10^{-4}$	7456537	4.394×10^{-4}	1.592×10^{-4}	1.440×10^{-6}	3.392×10^{-2}	5.119×10^{-5}	4.906×10^{-4}
wavelength shift [nm]	$(5.551 \pm 6.356) \times 10^{-3}$	7456537	8.218×10^{-3}	4.572×10^{-3}	-4.375×10^{-2}	6.266×10^{-2}	1.063×10^{-3}	9.281×10^{-3}
cloud fraction apriori [1]	0.579 ± 0.346	7456537	0.735	0.590	0.0	1.000	0.248	0.983
reflectance blue oca [1]	0.521 ± 0.196	7456537	0.276	0.493	0.144	1.94	0.366	0.642
reflectance green oca [1]	0.458 ± 0.222	7456537	0.336	0.429	7.707×10^{-2}	1.91	0.270	0.607
reflectance continuum aband [1]	0.396 ± 0.256	7456537	0.386	0.374	1.235×10^{-2}	5.03	0.184	0.569

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]	0.614 ± 0.388	12714812	0.680	0.800	0.0	1.000	0.270	0.950
cloud fraction [1]	0.549 ± 0.345	12714812	0.719	0.520	7.356×10^{-3}	1.000	0.220	0.939
cloud top height [m]	$(0.356 \pm 0.253) \times 10^4$	12714812	3.271×10^3	2.905×10^3	0.0	2.000×10^4	1.607×10^3	4.877×10^3
cloud optical thickness [1]	19.7 ± 33.2	12714812	11.5	9.96	1.000	250	6.23	17.7
cloud fraction crb [1]	0.548 ± 0.345	12714812	0.718	0.518	8.065×10^{-3}	1.000	0.219	0.937
cloud height crb [m]	$(0.279 \pm 0.225) \times 10^4$	12714812	2.893×10^3	2.260×10^3	0.0	2.000×10^4	1.050×10^3	3.943×10^3
cloud albedo crb [1]	0.562 ± 0.194	12714812	0.229	0.545	0.0	1.000	0.452	0.681
surface albedo fitted [1]	0.170 ± 0.290	12714812	4.886×10^{-2}	3.631×10^{-2}	0.0	1.000	2.142×10^{-2}	7.029×10^{-2}
surface albedo fitted crb [1]	0.159 ± 0.281	12714812	3.944×10^{-2}	2.832×10^{-2}	0.0	1.000	1.583×10^{-2}	5.527×10^{-2}
fitted root mean square [1]	$(5.200 \pm 14.268) \times 10^{-4}$	12714812	5.421×10^{-4}	2.434×10^{-4}	1.061×10^{-6}	1.06	8.988×10^{-5}	6.319×10^{-4}
fitted root mean square crb [1]	$(4.579 \pm 12.896) \times 10^{-4}$	12714812	4.838×10^{-4}	1.846×10^{-4}	1.440×10^{-6}	0.859	6.160×10^{-5}	5.454×10^{-4}
wavelength shift [nm]	$(6.507 \pm 6.668) \times 10^{-3}$	12714812	8.962×10^{-3}	5.740×10^{-3}	-5.423×10^{-2}	0.443	1.687×10^{-3}	1.065×10^{-2}
cloud fraction apriori [1]	0.557 ± 0.350	12714812	0.756	0.535	0.0	1.000	0.219	0.975
reflectance blue ocr [1]	0.540 ± 0.207	12714812	0.341	0.517	0.165	1.91	0.362	0.703
reflectance green ocr [1]	0.483 ± 0.234	12714812	0.413	0.462	9.085×10^{-2}	1.86	0.266	0.679
reflectance continuum aband [1]	0.414 ± 0.268	12714812	0.474	0.403	1.235×10^{-2}	5.03	0.162	0.635

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]	0.628 ± 0.368	3456832	0.580	0.760	0.0	1.000	0.350	0.930
cloud fraction [1]	0.581 ± 0.340	3456832	0.707	0.576	7.824×10^{-3}	1.000	0.265	0.971
cloud top height [m]	$(0.446 \pm 0.284) \times 10^4$	3456832	3.751×10^3	3.896×10^3	0.0	2.000×10^4	2.314×10^3	6.064×10^3
cloud optical thickness [1]	13.7 ± 23.0	3456832	7.76	7.62	1.000	250	4.96	12.7
cloud fraction crb [1]	0.581 ± 0.340	3456832	0.707	0.577	8.102×10^{-3}	1.000	0.264	0.971
cloud height crb [m]	$(0.332 \pm 0.235) \times 10^4$	3456832	3.217×10^3	2.765×10^3	0.0	2.000×10^4	1.505×10^3	4.722×10^3
cloud albedo crb [1]	0.635 ± 0.224	3456832	0.318	0.629	0.0	1.000	0.494	0.812
surface albedo fitted [1]	0.433 ± 0.274	3456832	0.421	0.301	6.555×10^{-4}	1.000	0.231	0.651
surface albedo fitted crb [1]	0.423 ± 0.257	3456832	0.428	0.301	6.752×10^{-3}	1.000	0.227	0.655
fitted root mean square [1]	$(1.190 \pm 1.613) \times 10^{-3}$	3456832	1.124×10^{-3}	9.018×10^{-4}	6.033×10^{-6}	0.578	4.860×10^{-4}	1.610×10^{-3}
fitted root mean square crb [1]	$(1.098 \pm 1.183) \times 10^{-3}$	3456832	1.117×10^{-3}	8.620×10^{-4}	1.867×10^{-6}	0.546	4.195×10^{-4}	1.537×10^{-3}
wavelength shift [nm]	$(9.008 \pm 6.536) \times 10^{-3}$	3456832	9.056×10^{-3}	8.877×10^{-3}	-3.377×10^{-2}	5.955×10^{-2}	4.346×10^{-3}	1.340×10^{-2}
cloud fraction apriori [1]	0.599 ± 0.345	3456832	0.725	0.617	0.0	1.000	0.275	1.000
reflectance blue ocra [1]	0.581 ± 0.258	3456832	0.457	0.553	0.137	1.94	0.342	0.799
reflectance green ocra [1]	0.545 ± 0.280	3456832	0.519	0.525	7.707×10^{-2}	1.91	0.273	0.792
reflectance continuum aband [1]	0.570 ± 0.250	3456832	0.427	0.545	1.647×10^{-2}	4.82	0.351	0.778

3 Granule outlines

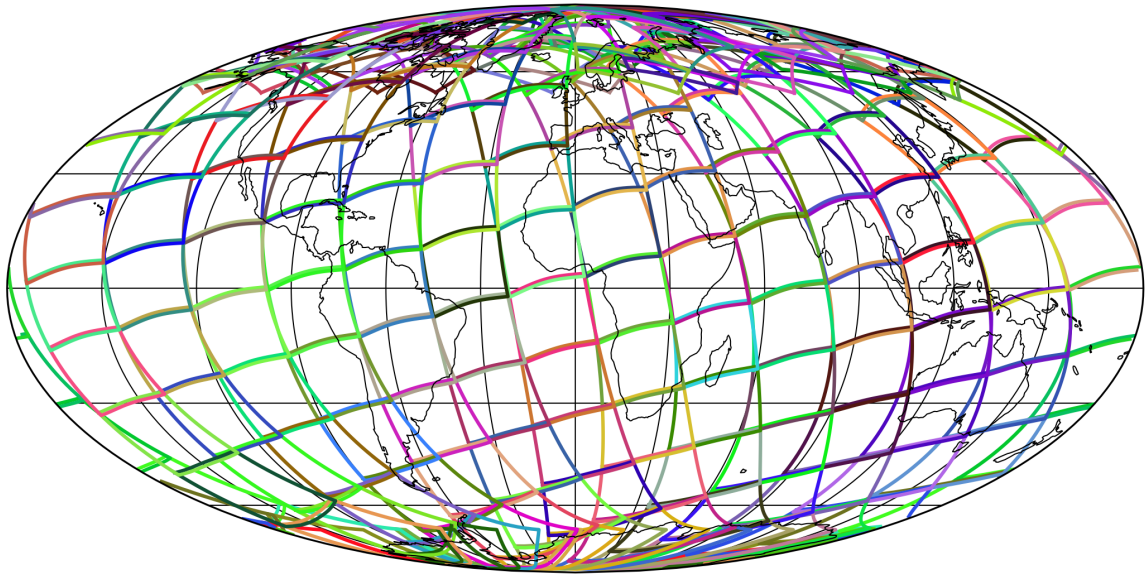


Figure 1: Outline of the granules.

4 Input data monitoring

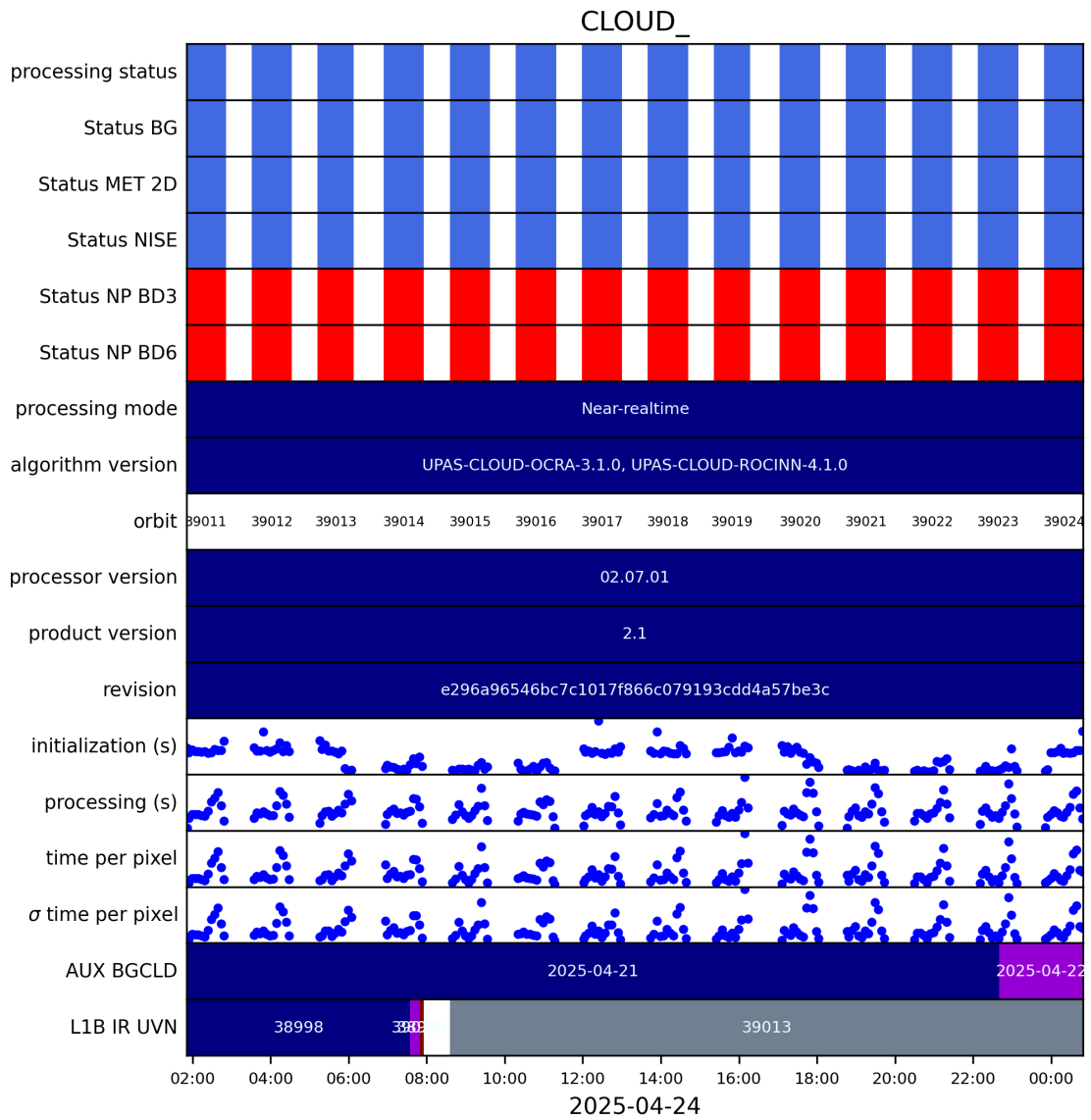


Figure 2: Input data per granule

5 Warnings and errors

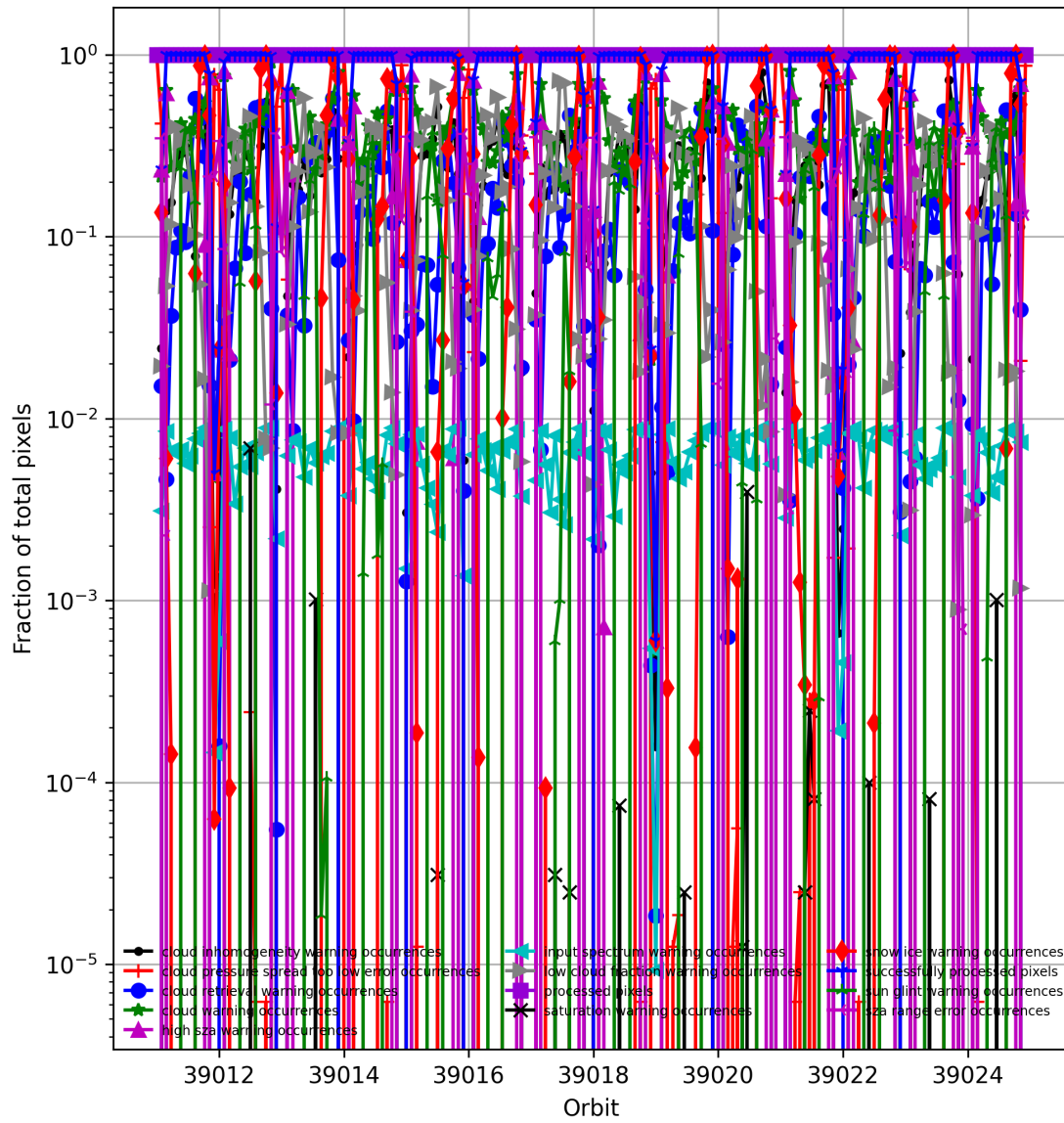


Figure 3: Fraction of pixels with specific warnings and errors during processing

6 World maps

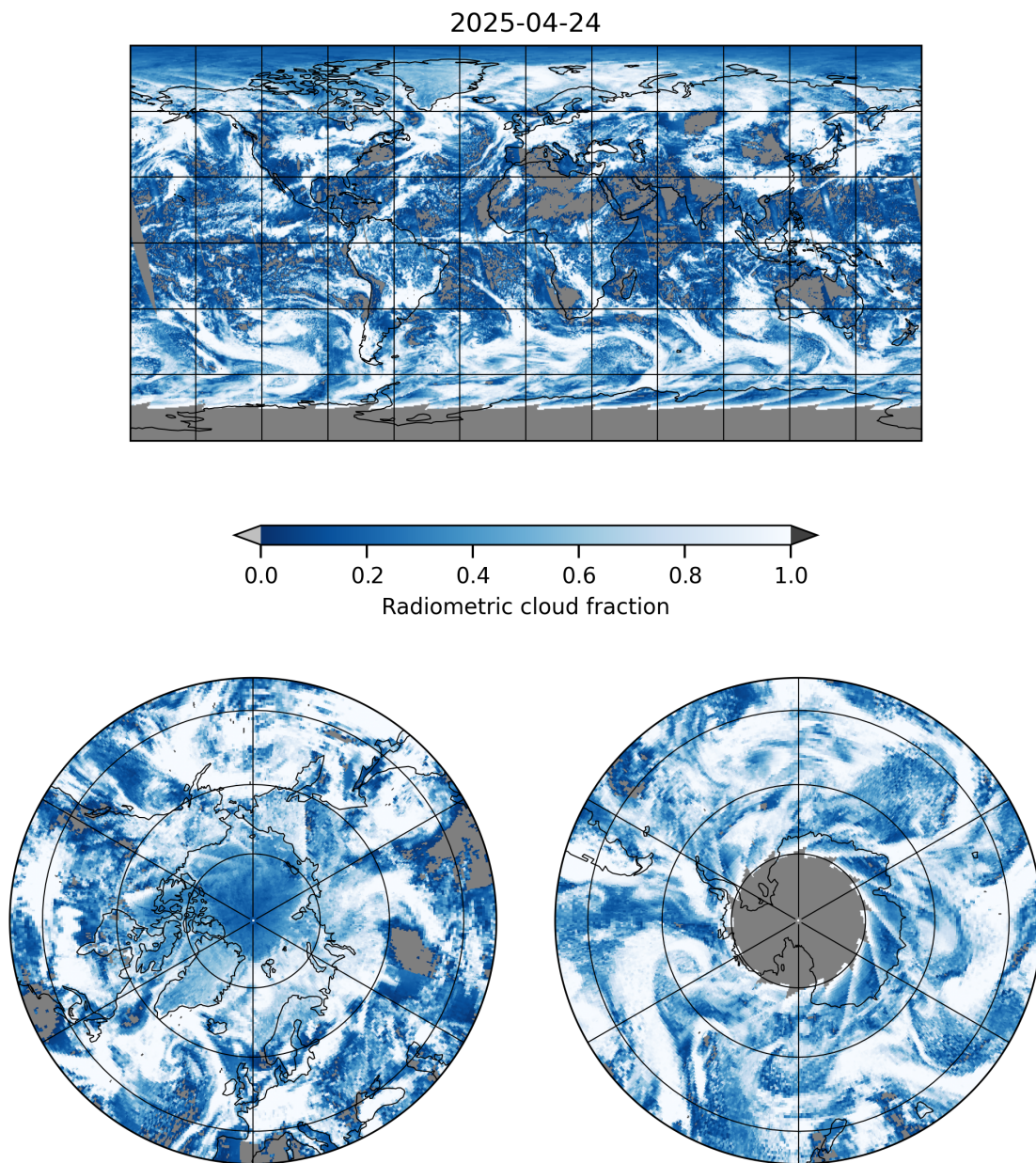


Figure 4: Map of “Radiometric cloud fraction” for 2025-04-24 to 2025-04-25

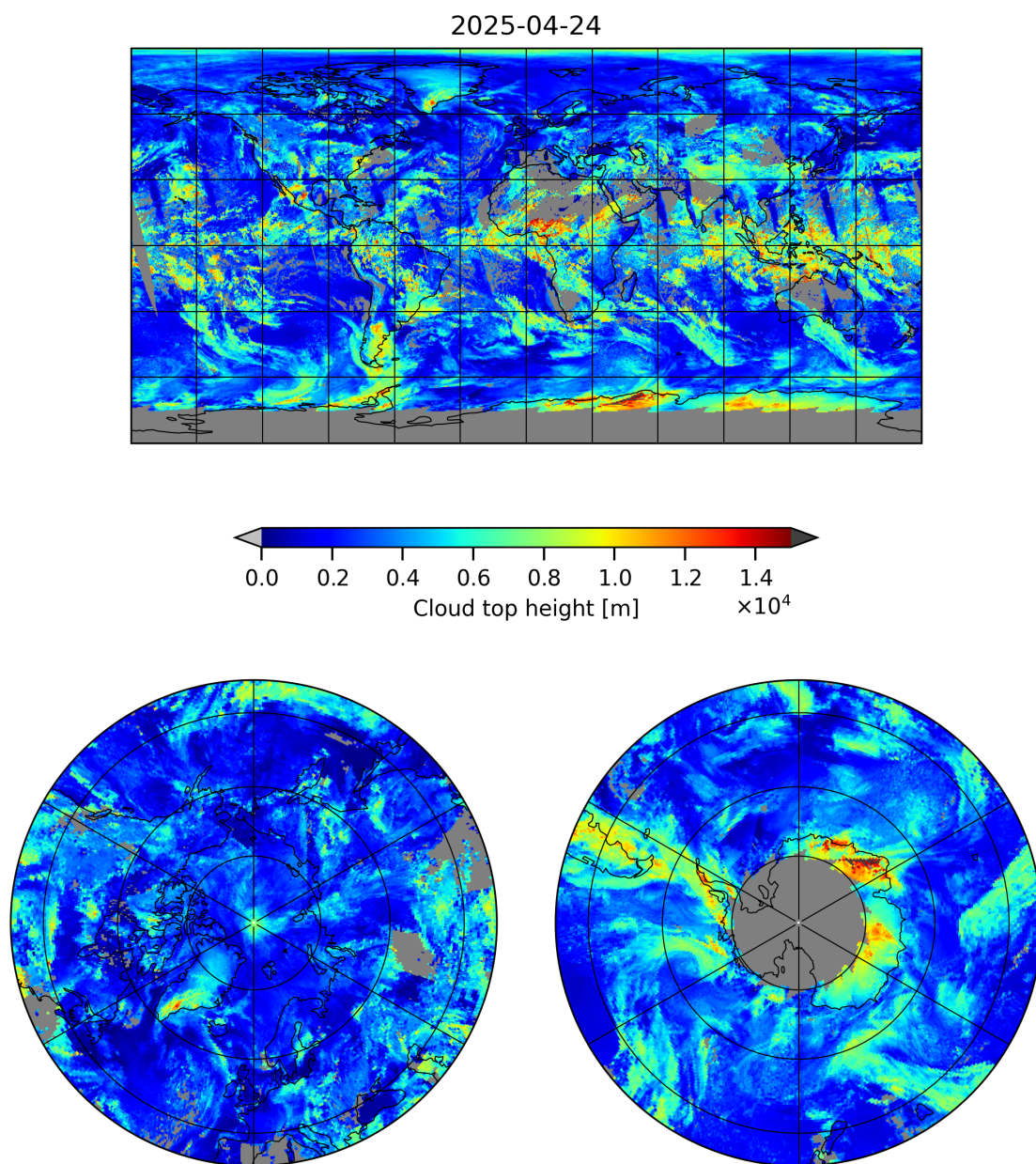


Figure 5: Map of “Cloud top height” for 2025-04-24 to 2025-04-25

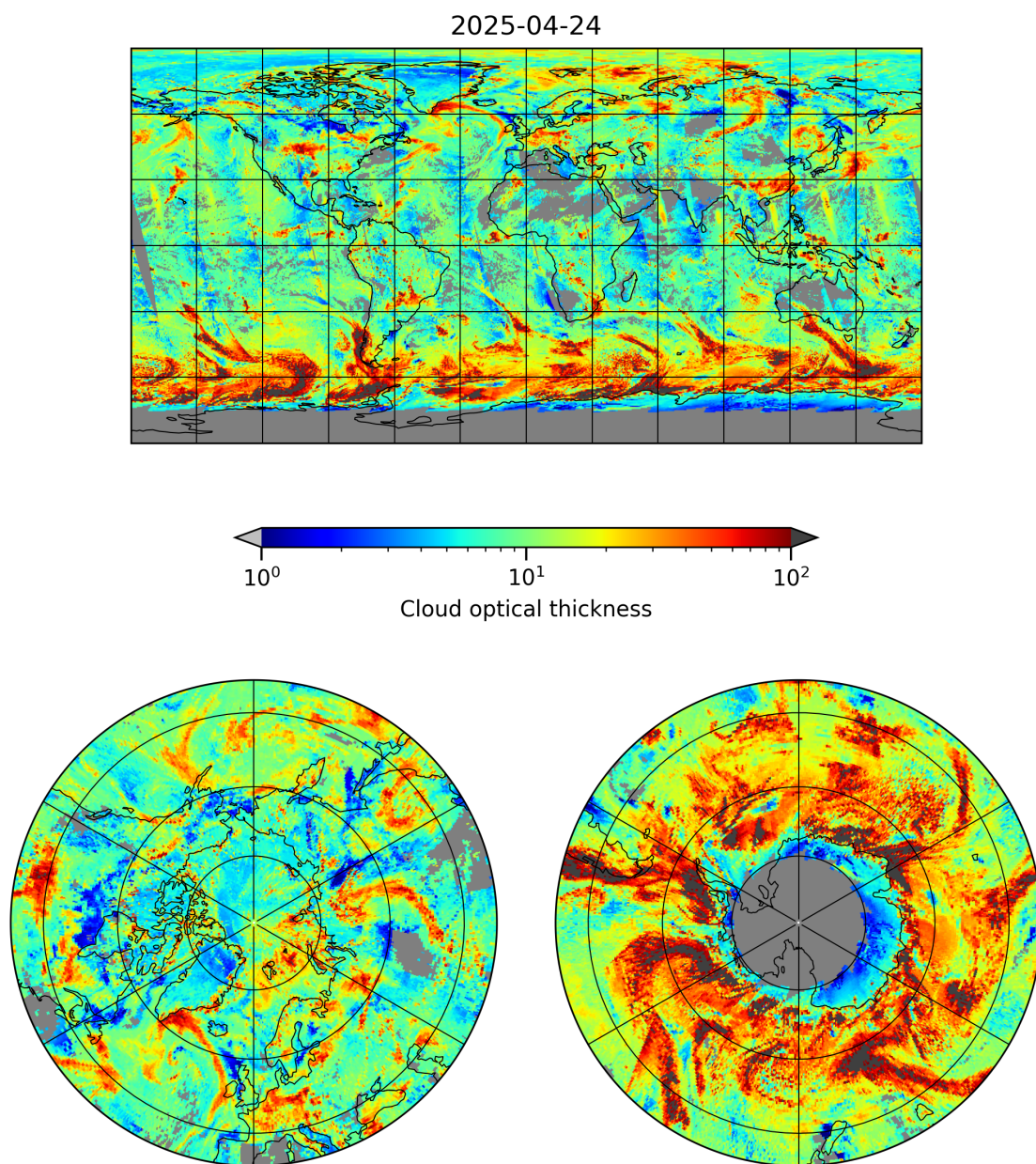


Figure 6: Map of “Cloud optical thickness” for 2025-04-24 to 2025-04-25

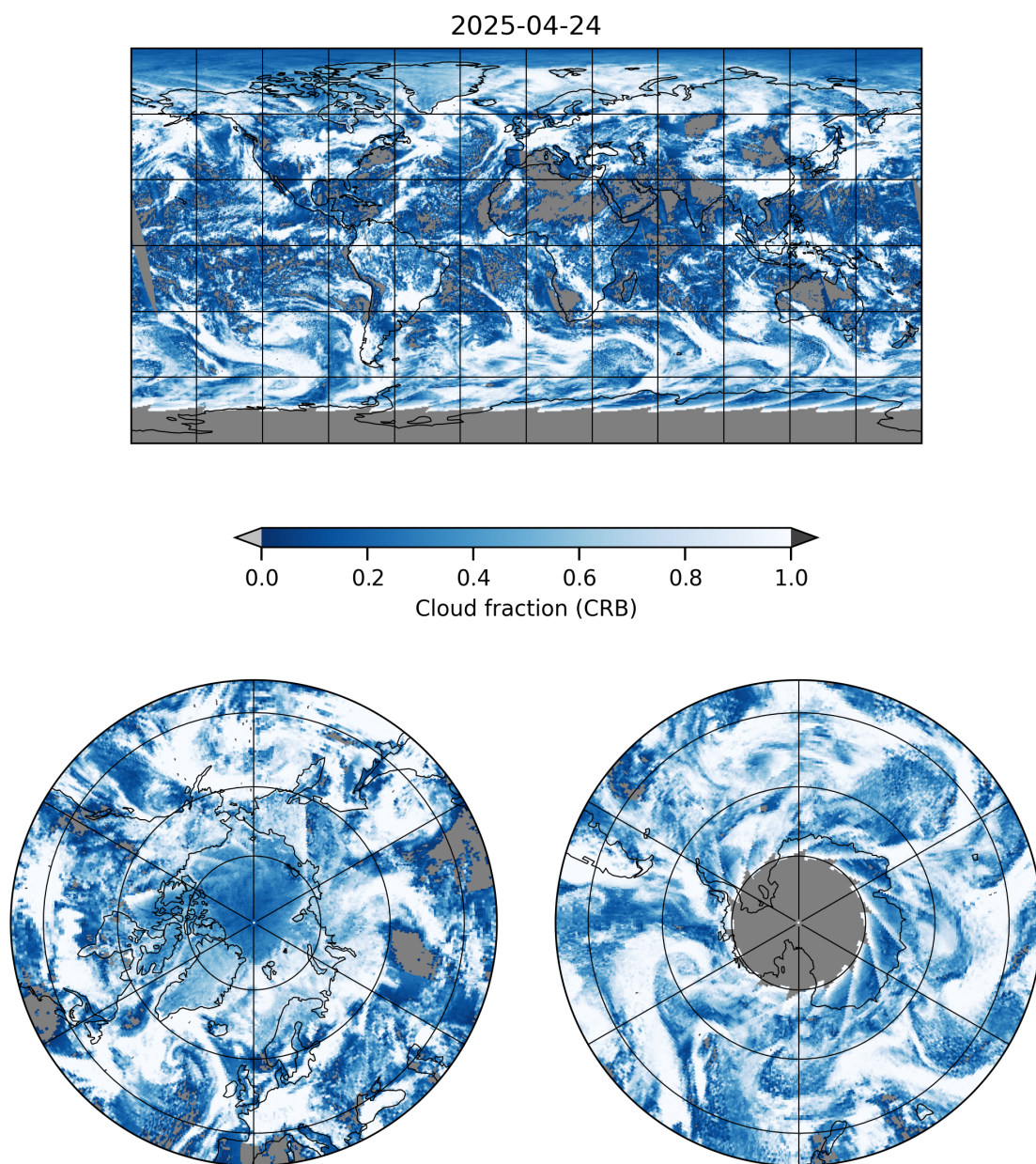


Figure 7: Map of “Cloud fraction (CRB)” for 2025-04-24 to 2025-04-25

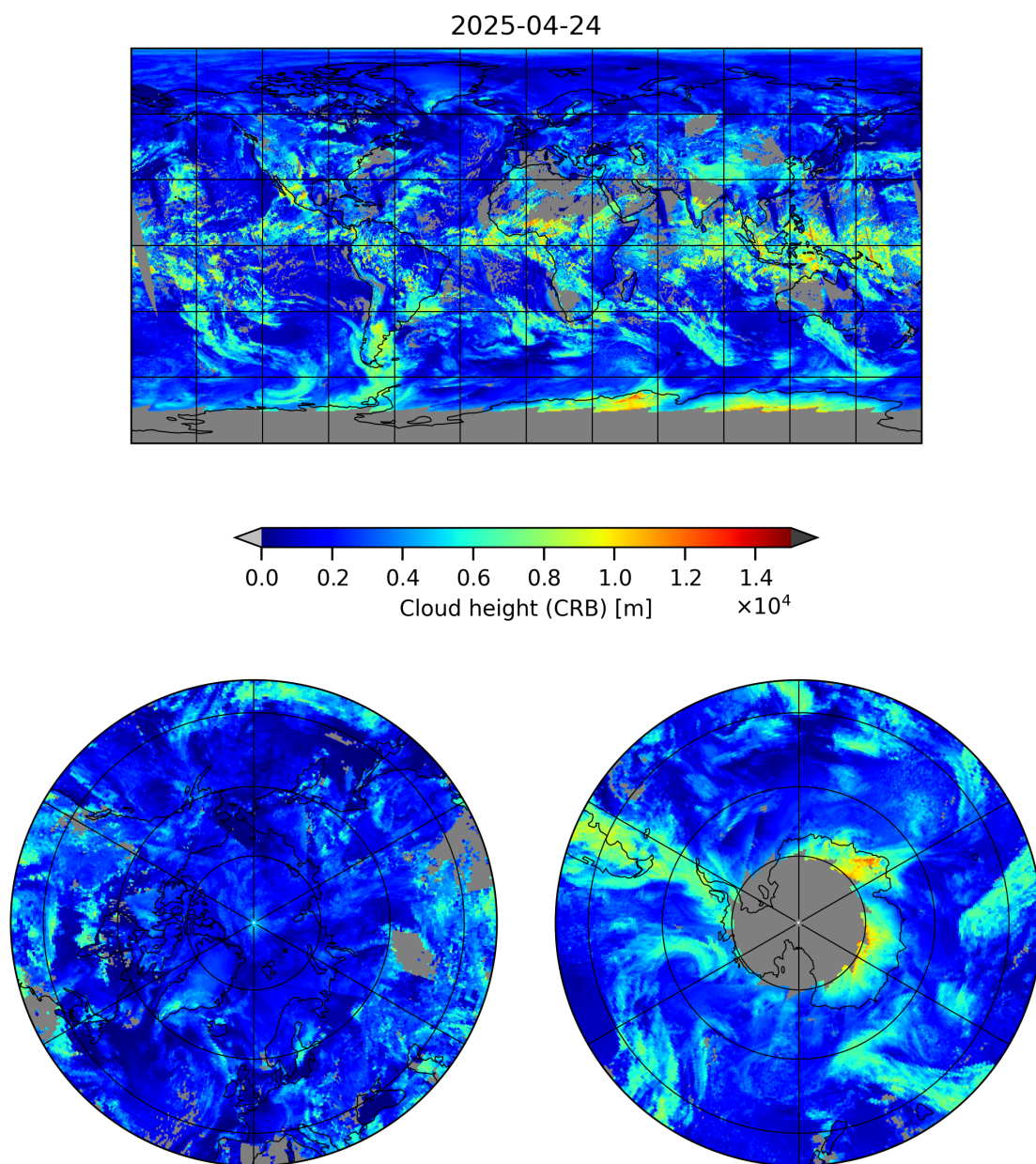


Figure 8: Map of “Cloud height (CRB)” for 2025-04-24 to 2025-04-25

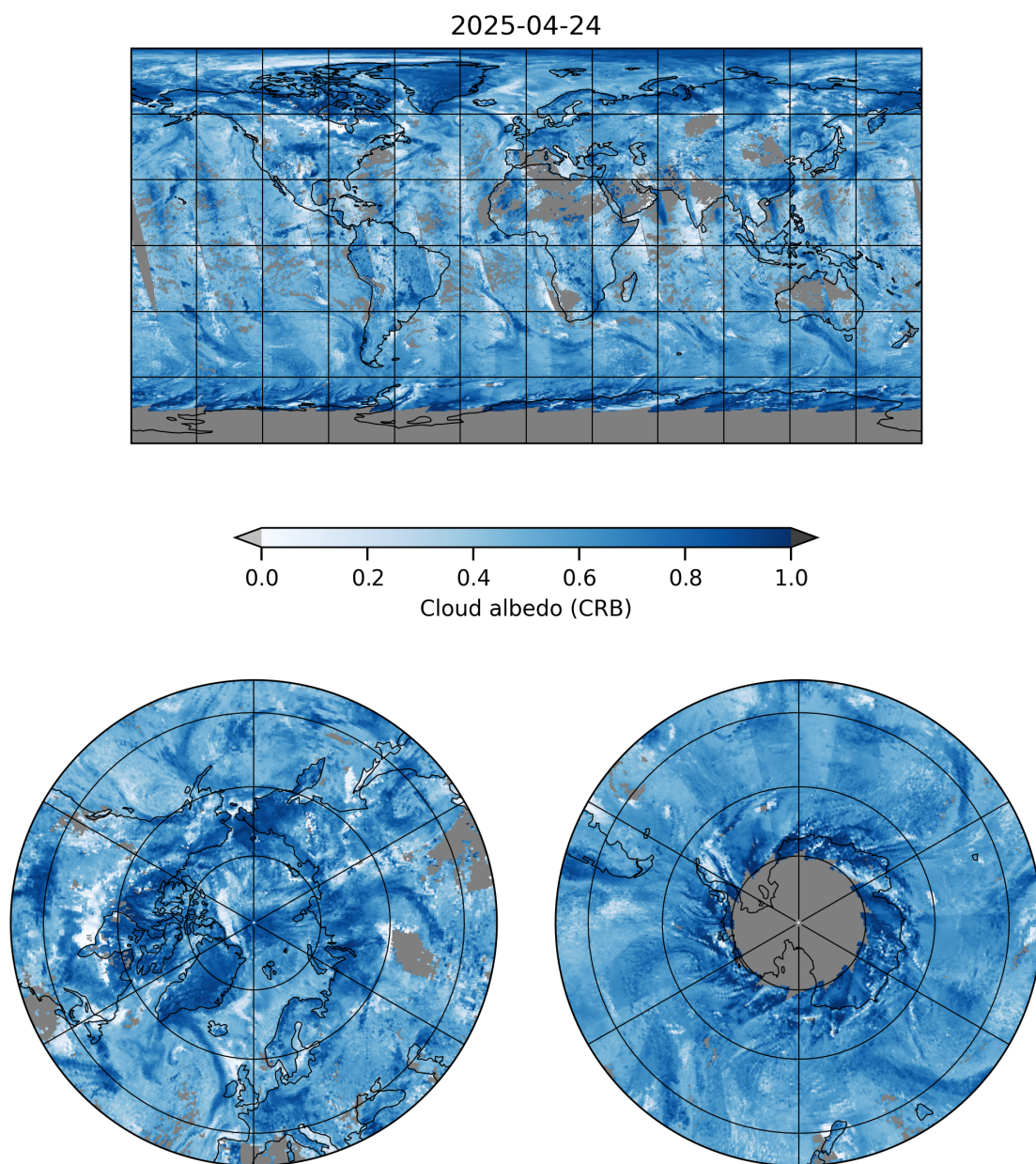


Figure 9: Map of “Cloud albedo (CRB)” for 2025-04-24 to 2025-04-25

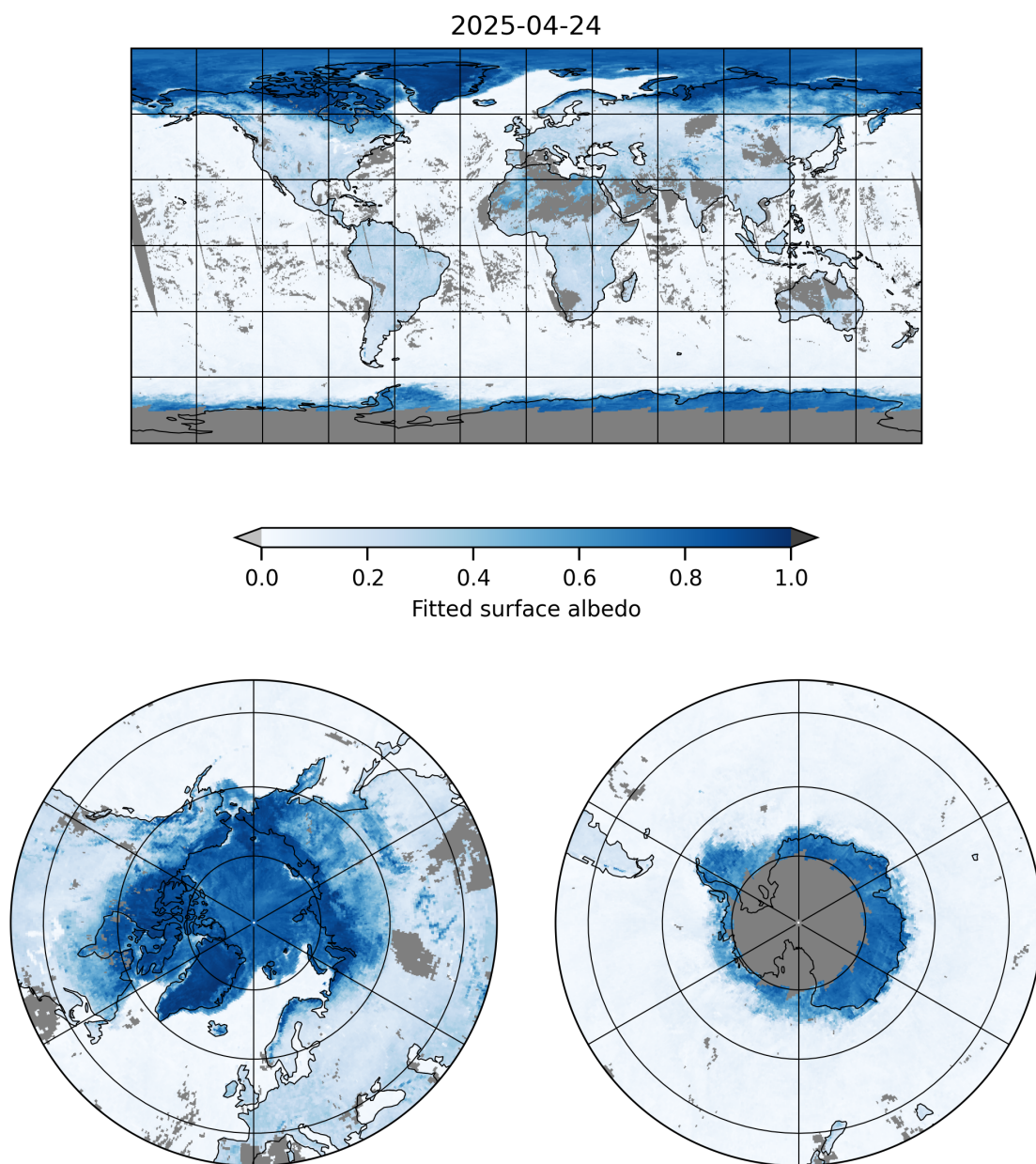


Figure 10: Map of “Fitted surface albedo” for 2025-04-24 to 2025-04-25

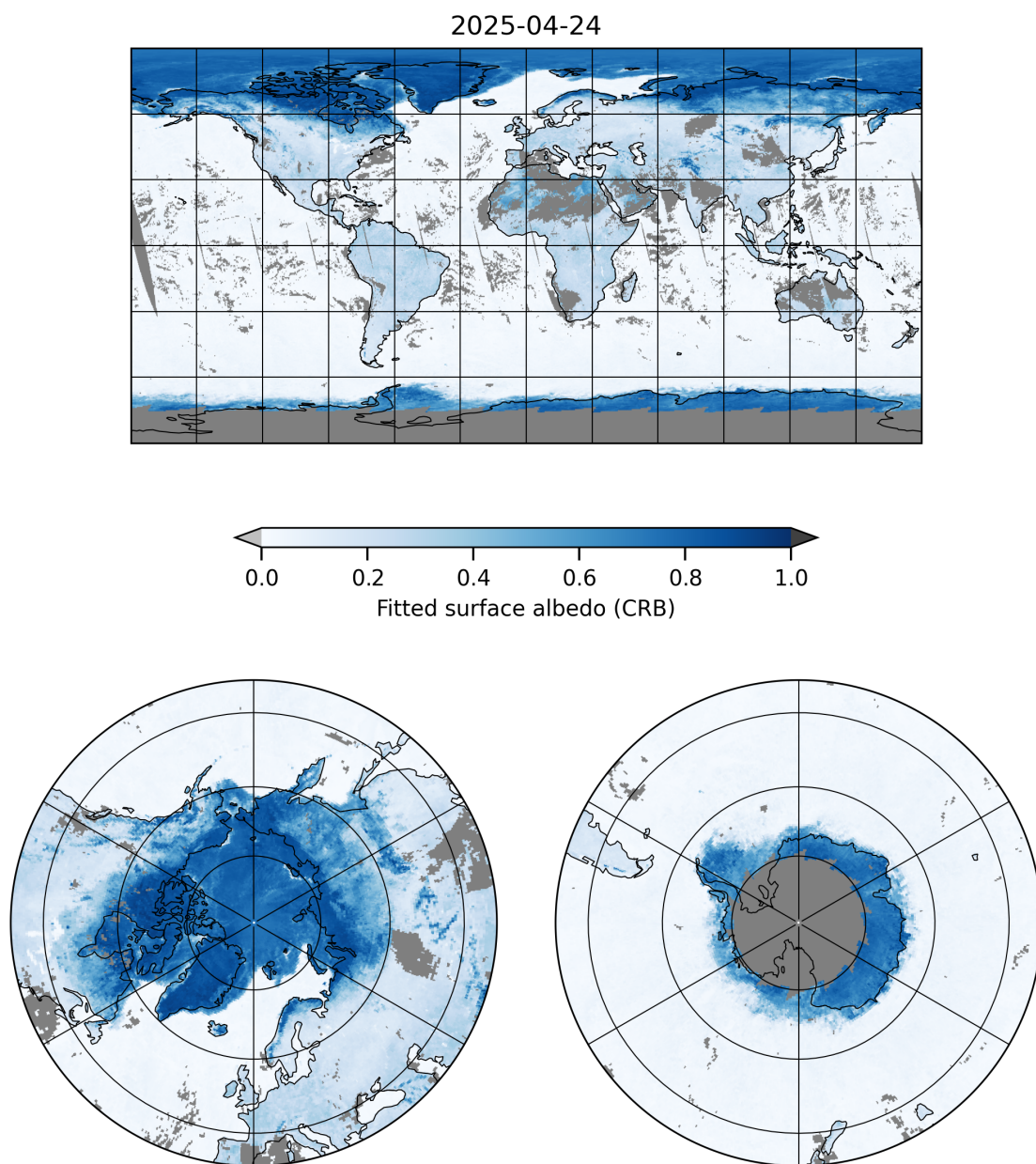


Figure 11: Map of “Fitted surface albedo (CRB)” for 2025-04-24 to 2025-04-25

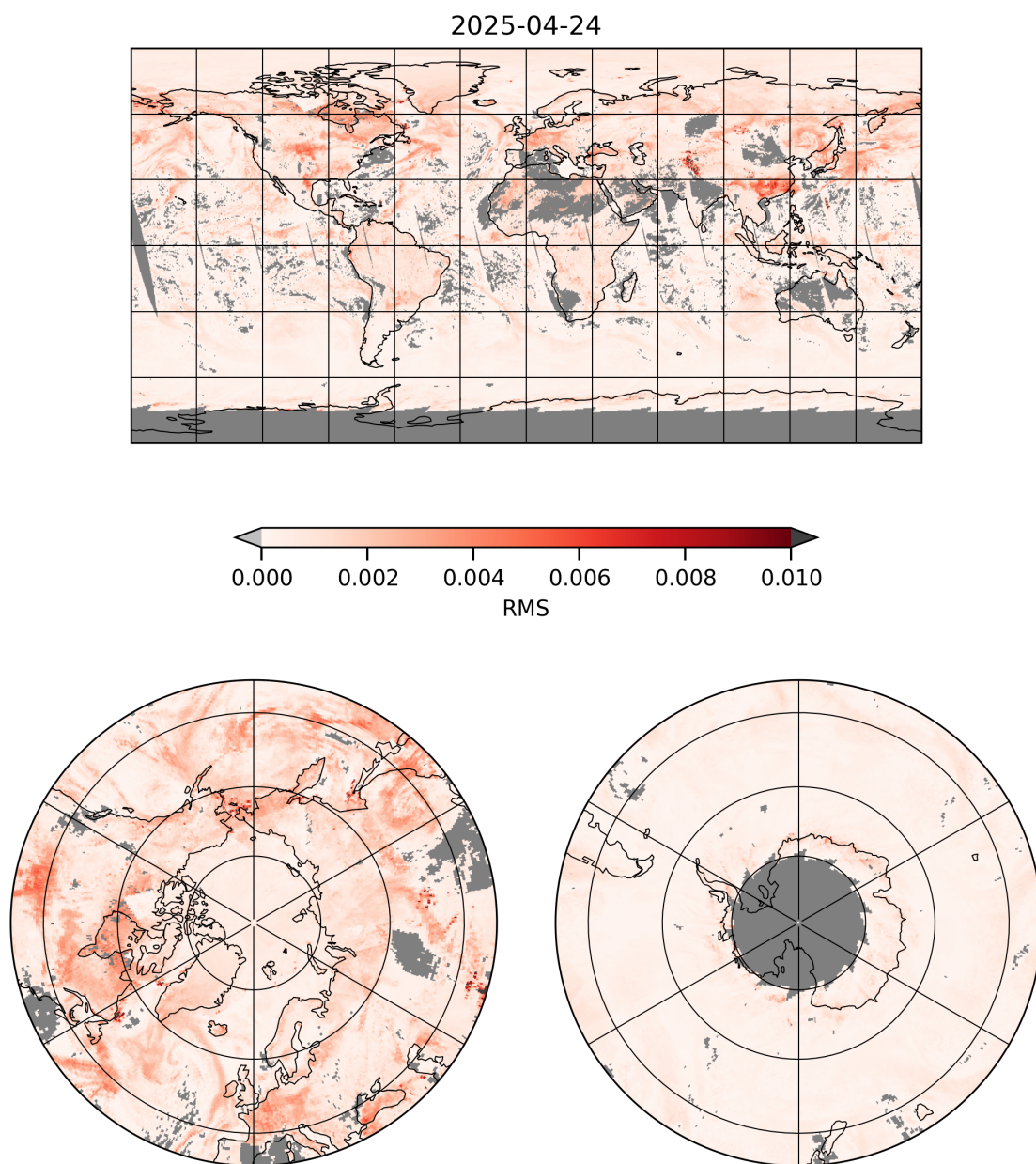


Figure 12: Map of “RMS” for 2025-04-24 to 2025-04-25

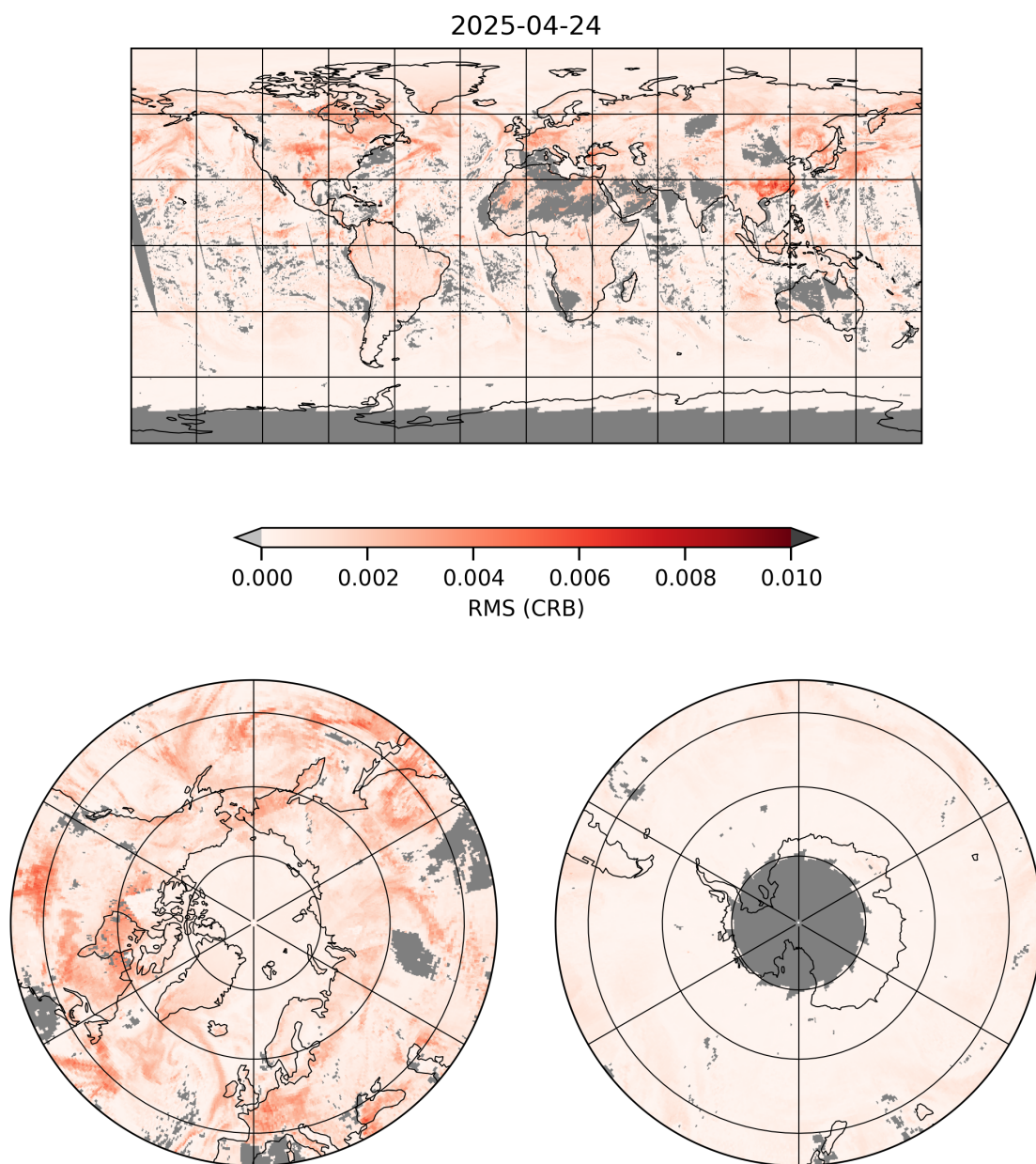


Figure 13: Map of “RMS (CRB)” for 2025-04-24 to 2025-04-25

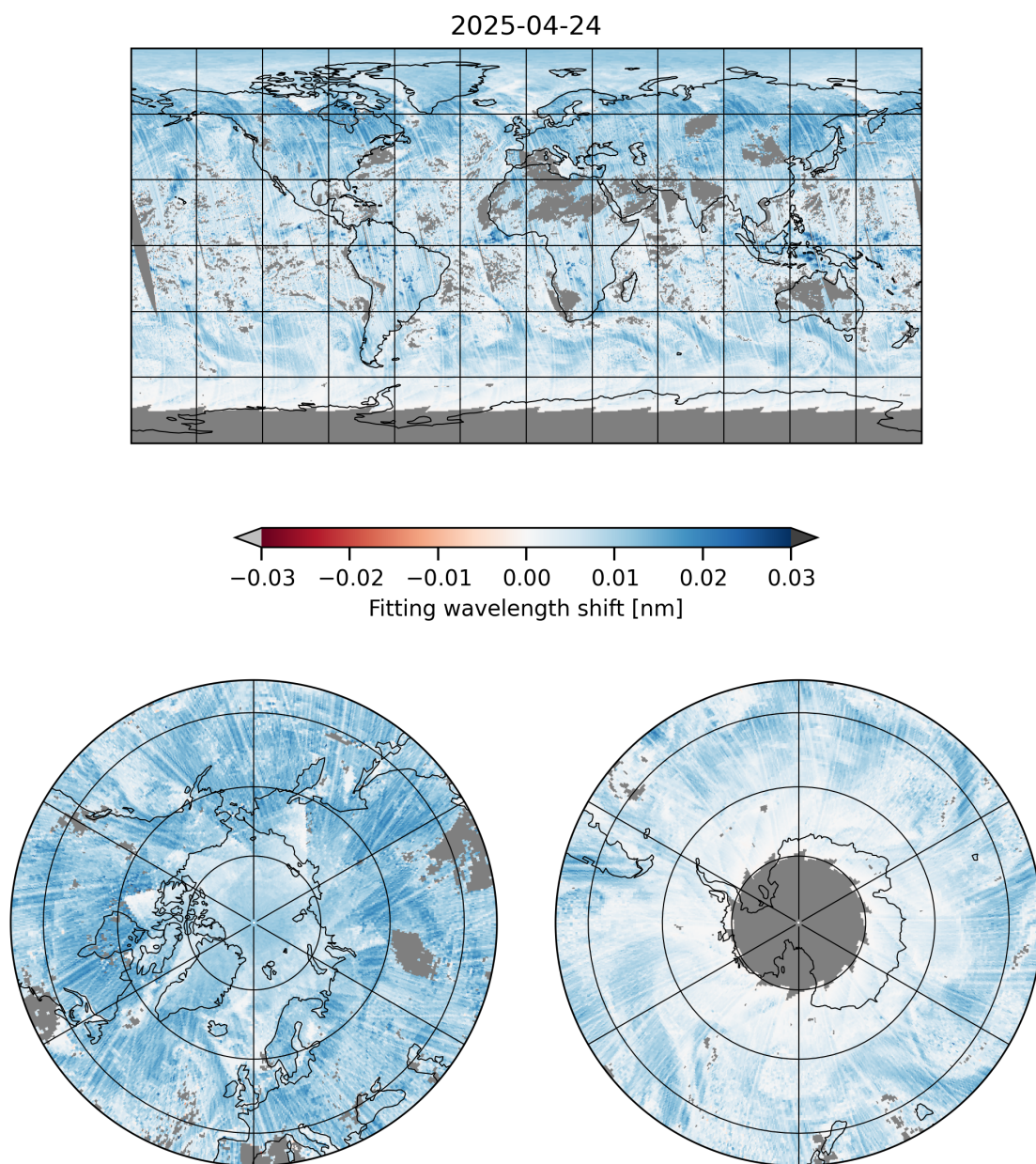


Figure 14: Map of “Fitting wavelength shift” for 2025-04-24 to 2025-04-25

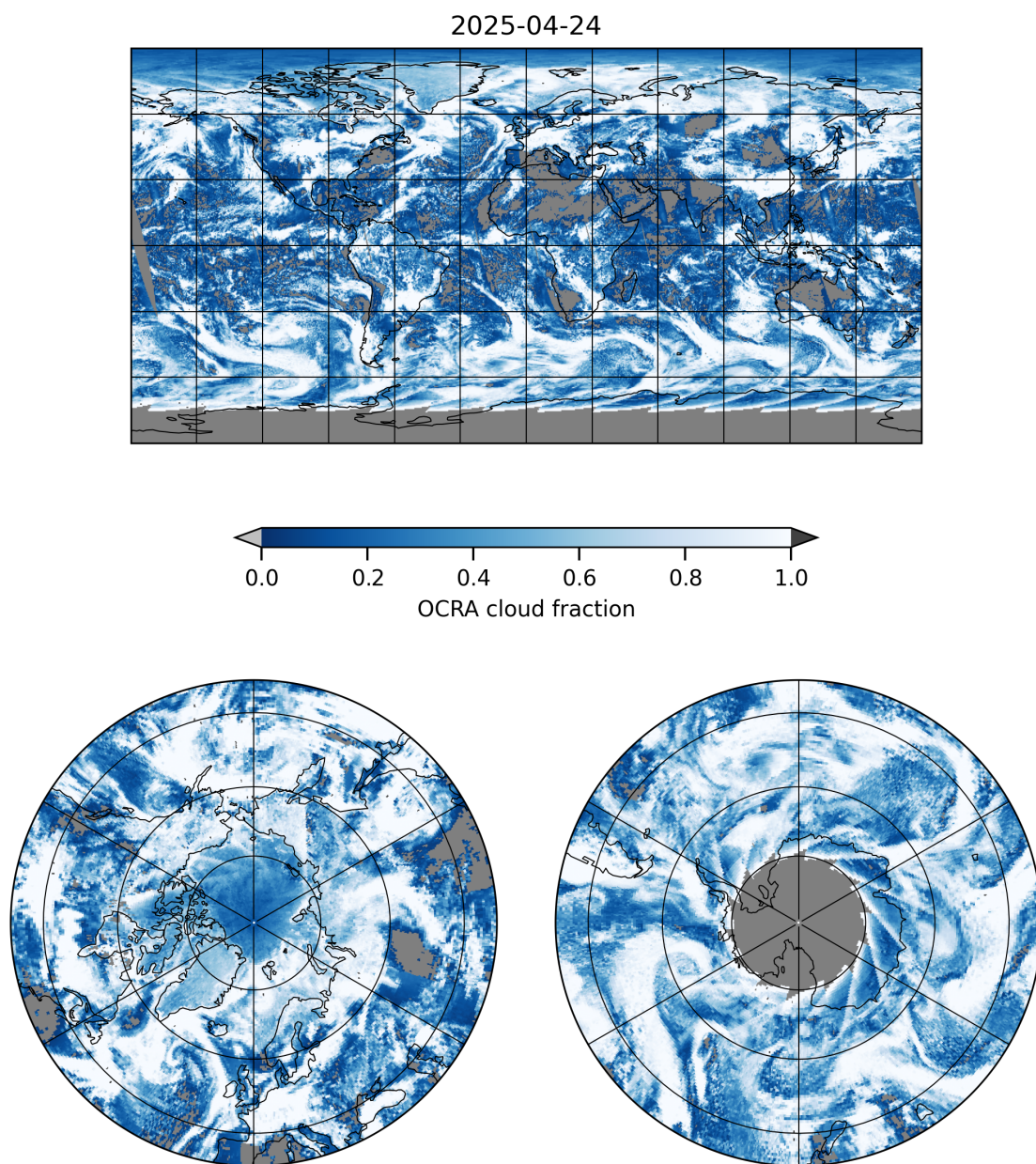


Figure 15: Map of “OCRA cloud fraction” for 2025-04-24 to 2025-04-25

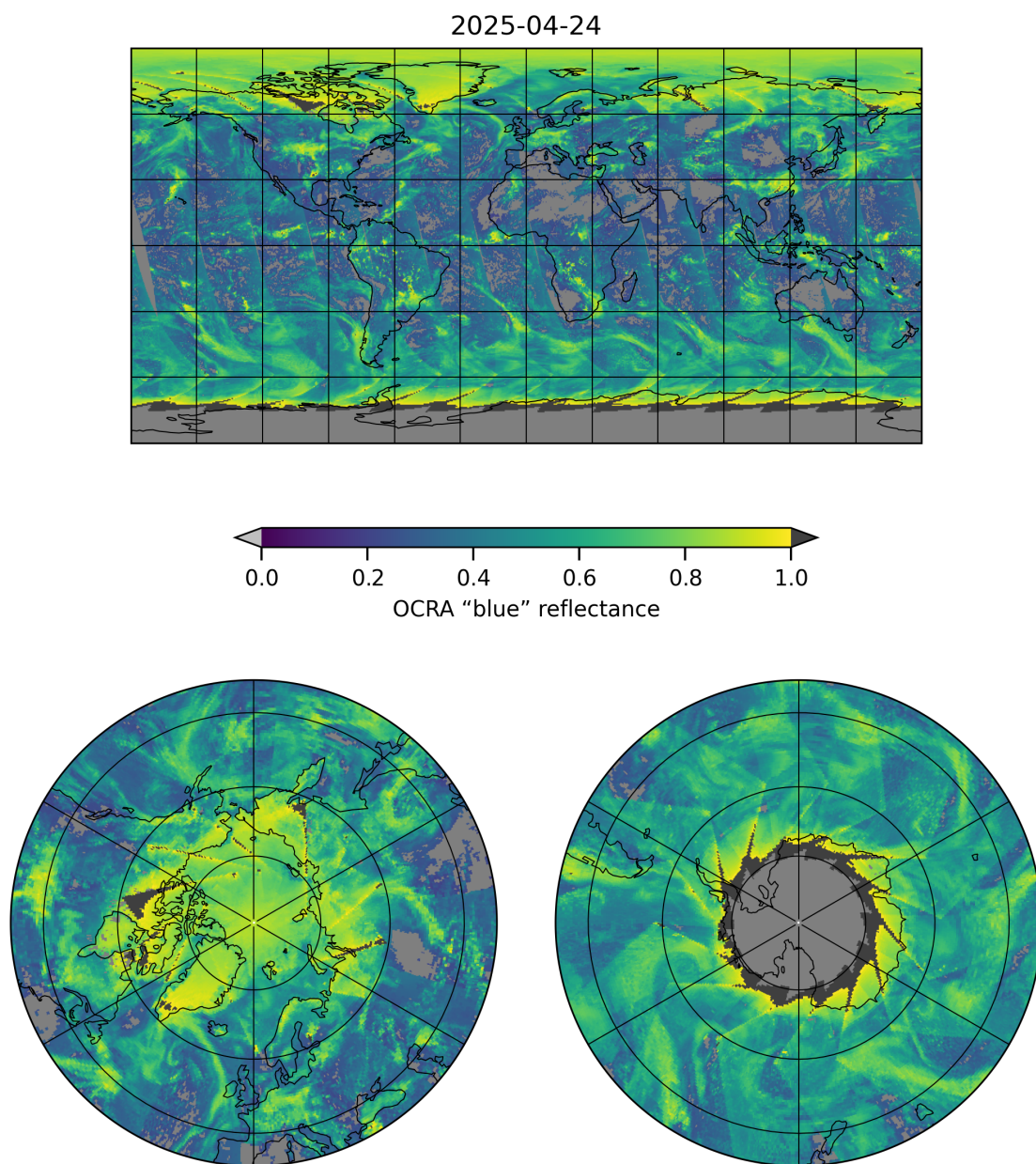


Figure 16: Map of "OCRA "blue" reflectance" for 2025-04-24 to 2025-04-25

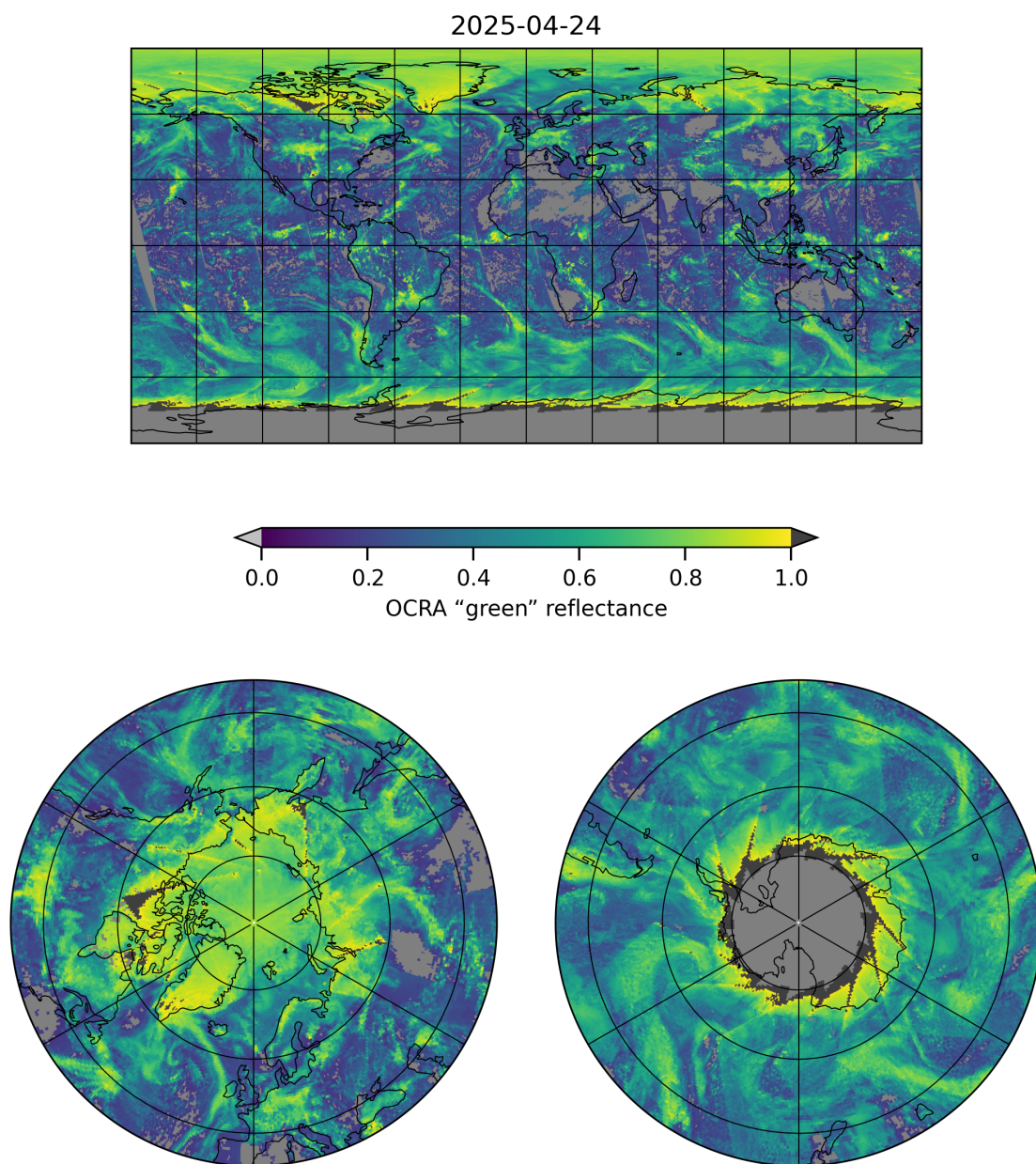


Figure 17: Map of "OCRA "green" reflectance" for 2025-04-24 to 2025-04-25

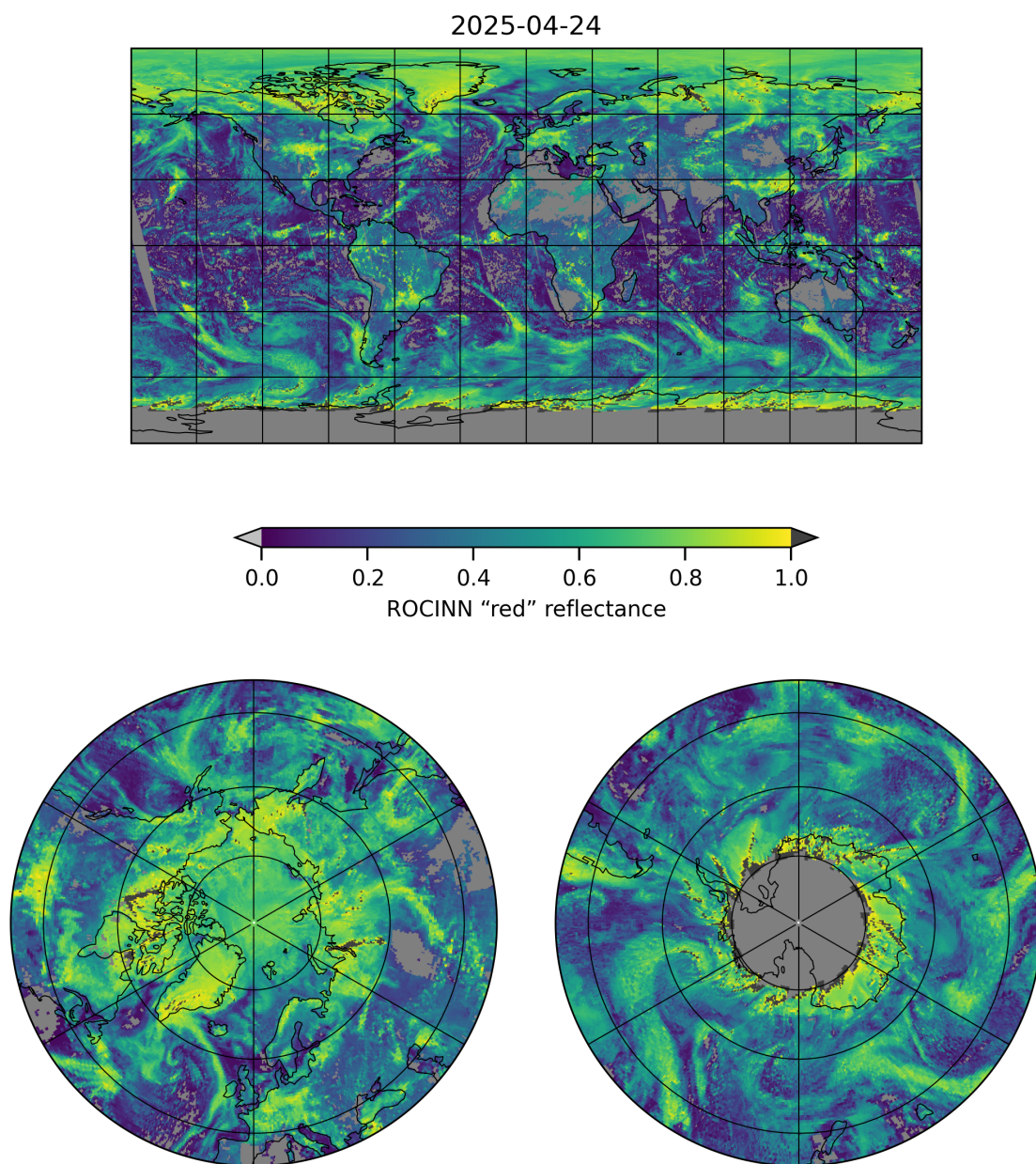


Figure 18: Map of "ROCINN "red" reflectance" for 2025-04-24 to 2025-04-25

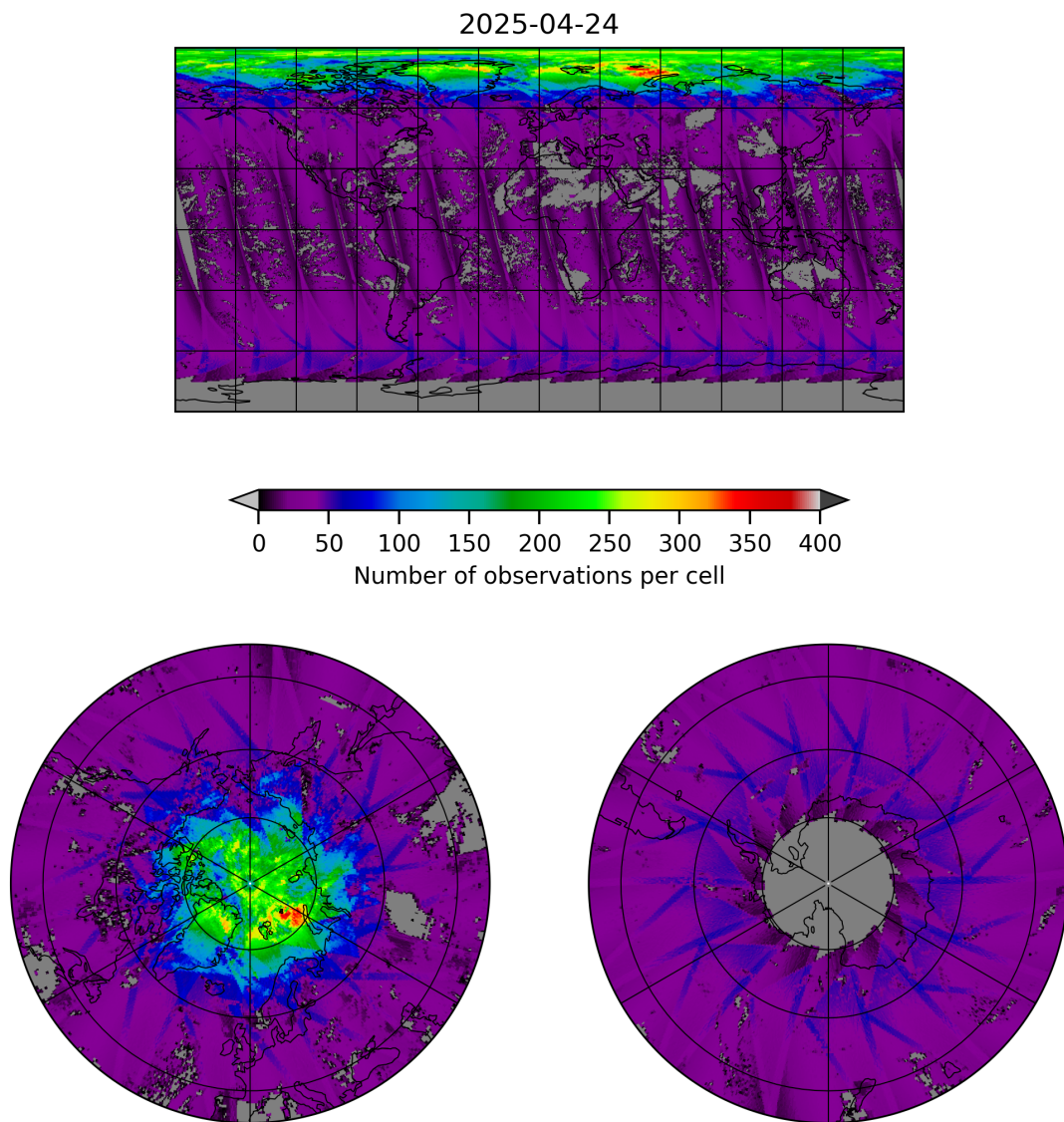


Figure 19: Map of the number of observations for 2025-04-24 to 2025-04-25

7 Zonal average

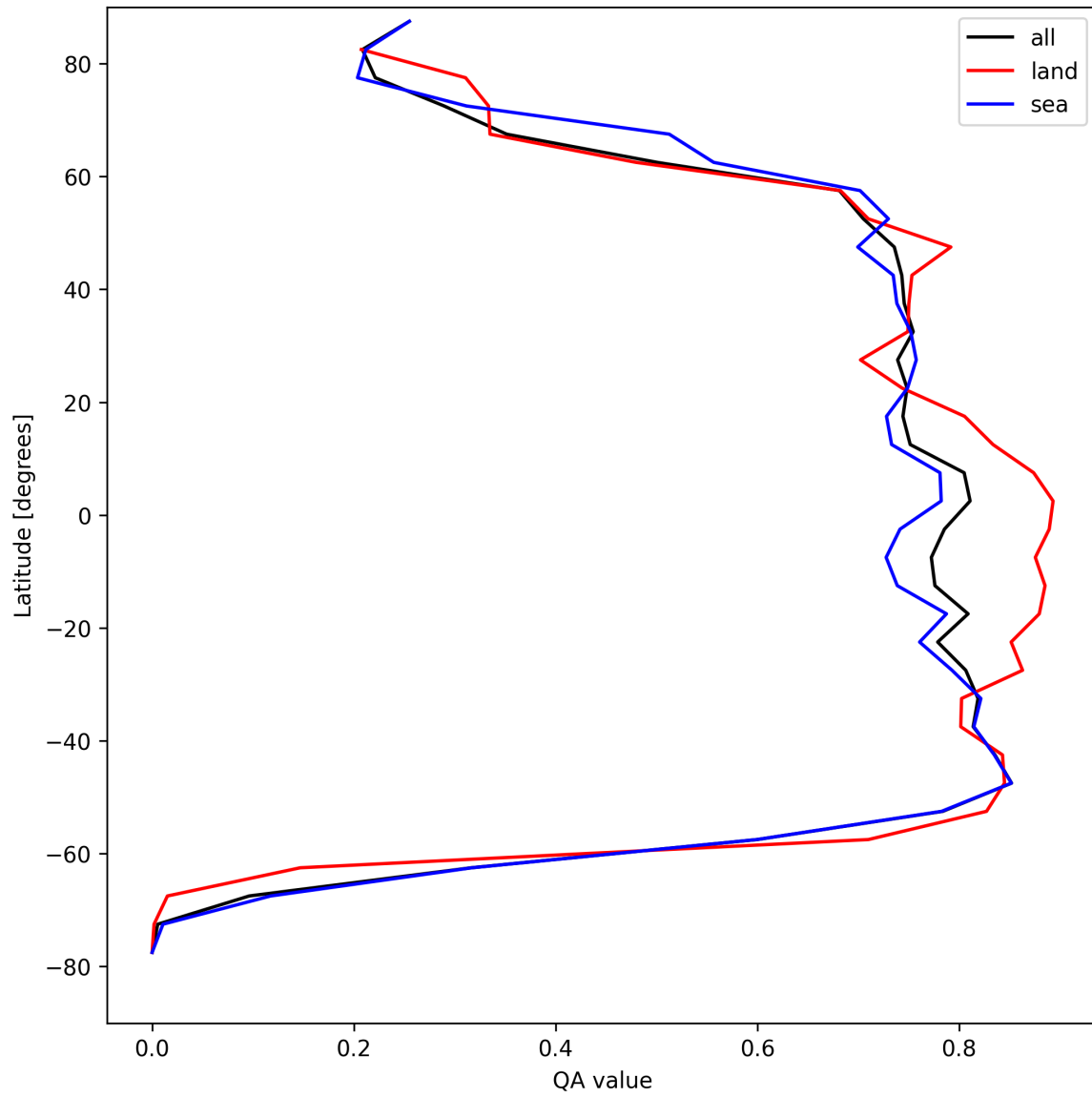


Figure 20: Zonal average of “QA value” for 2025-04-24 to 2025-04-25.

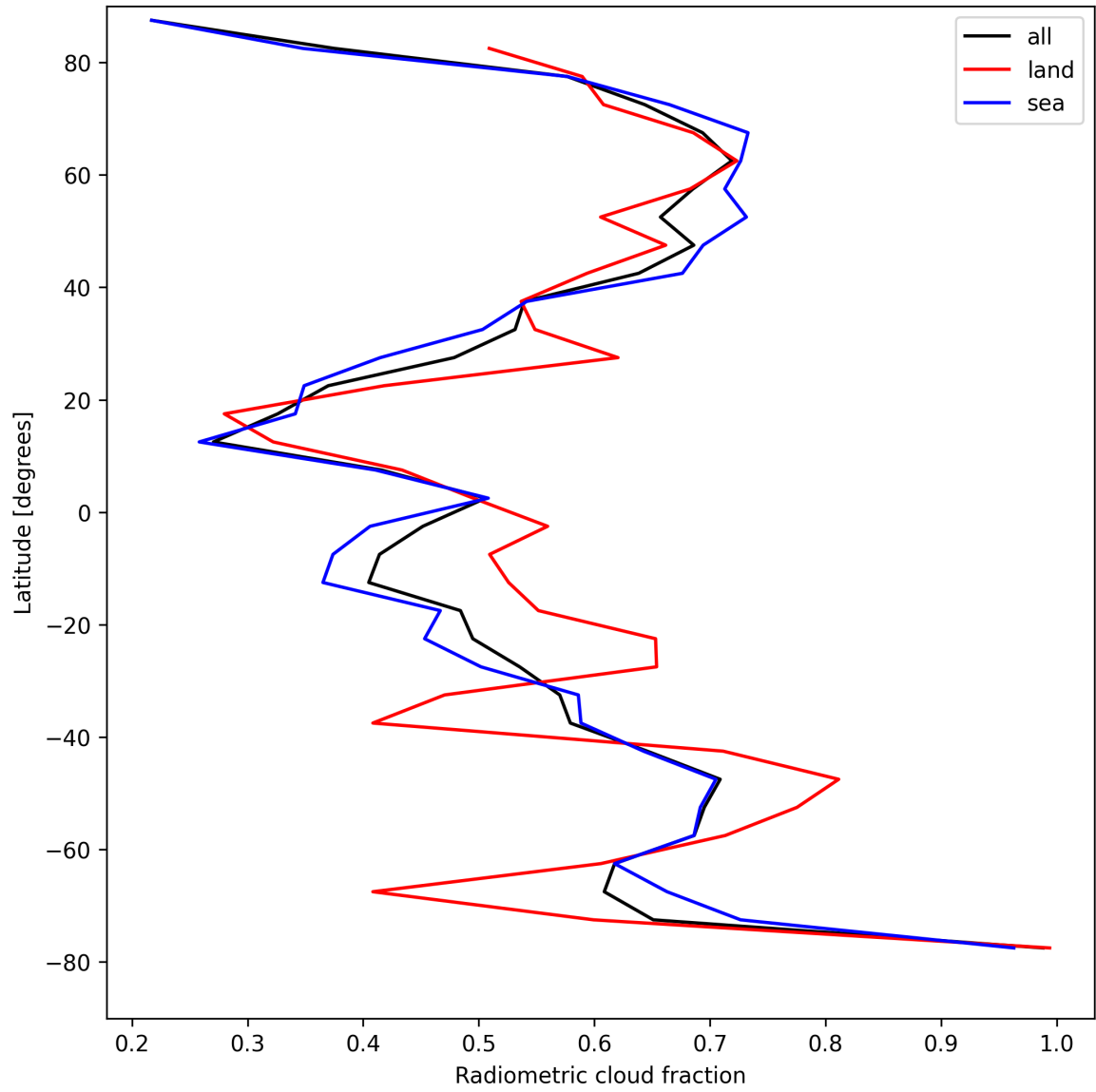


Figure 21: Zonal average of “Radiometric cloud fraction” for 2025-04-24 to 2025-04-25.

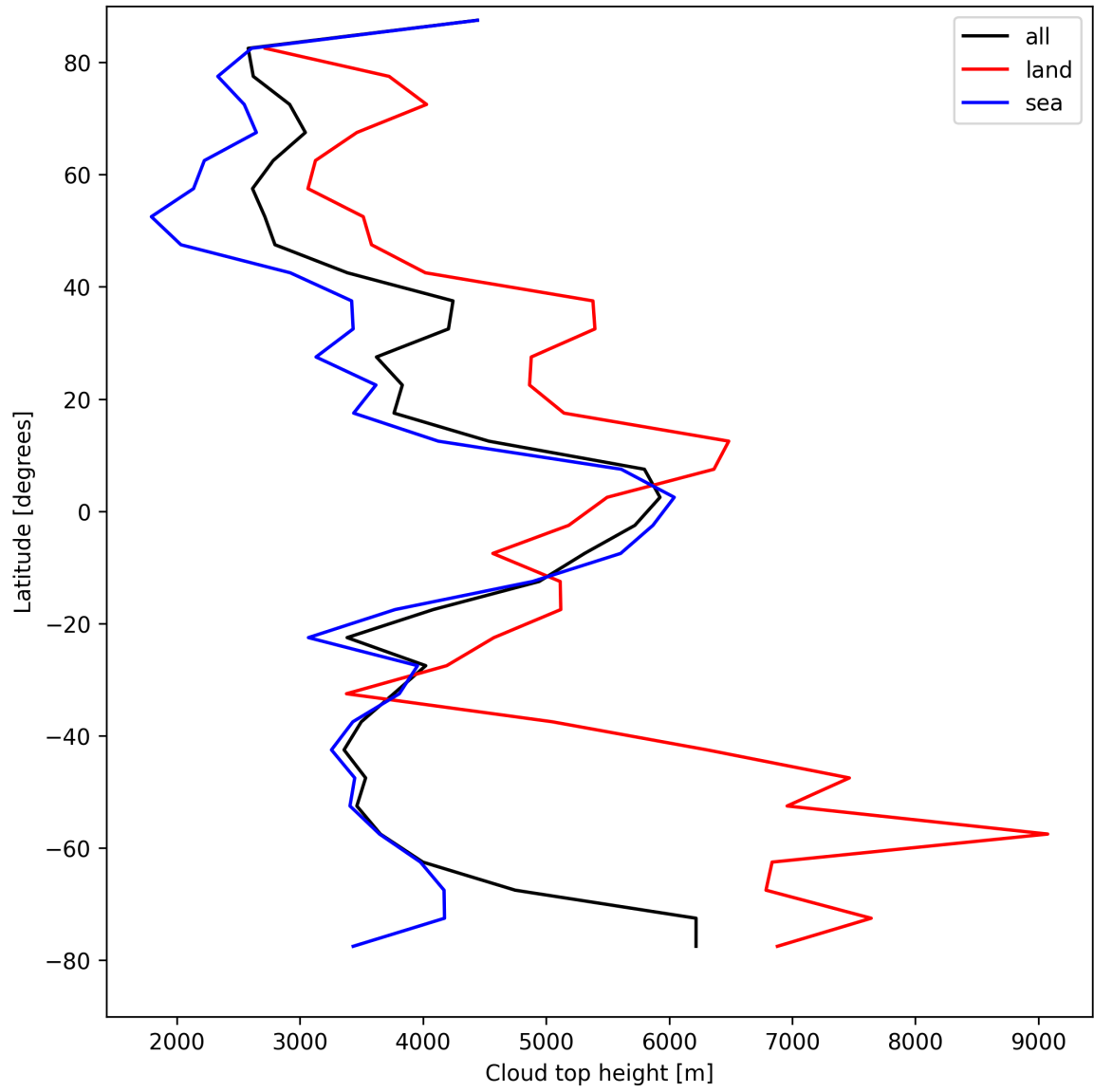


Figure 22: Zonal average of “Cloud top height” for 2025-04-24 to 2025-04-25.

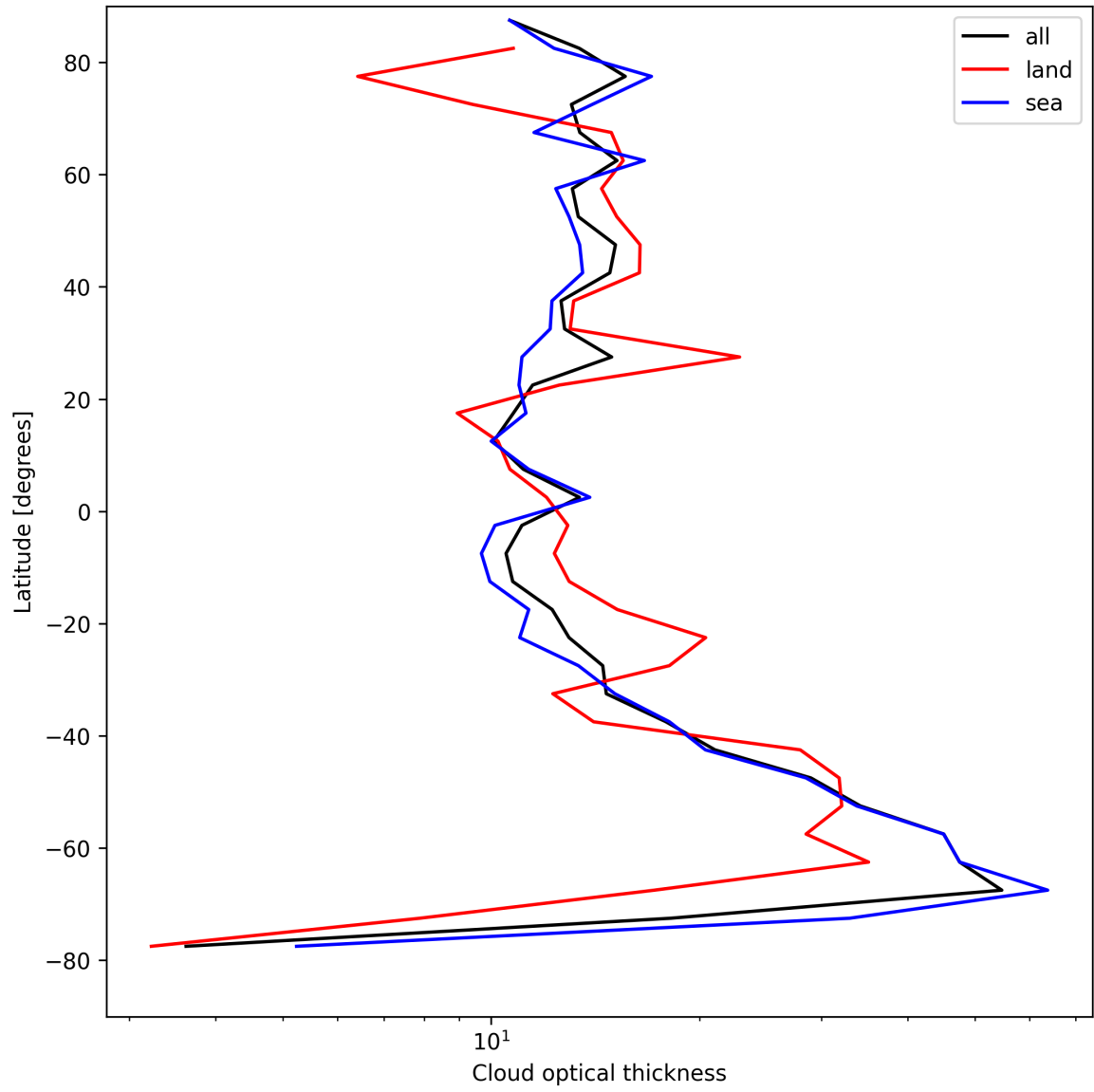


Figure 23: Zonal average of “Cloud optical thickness” for 2025-04-24 to 2025-04-25.

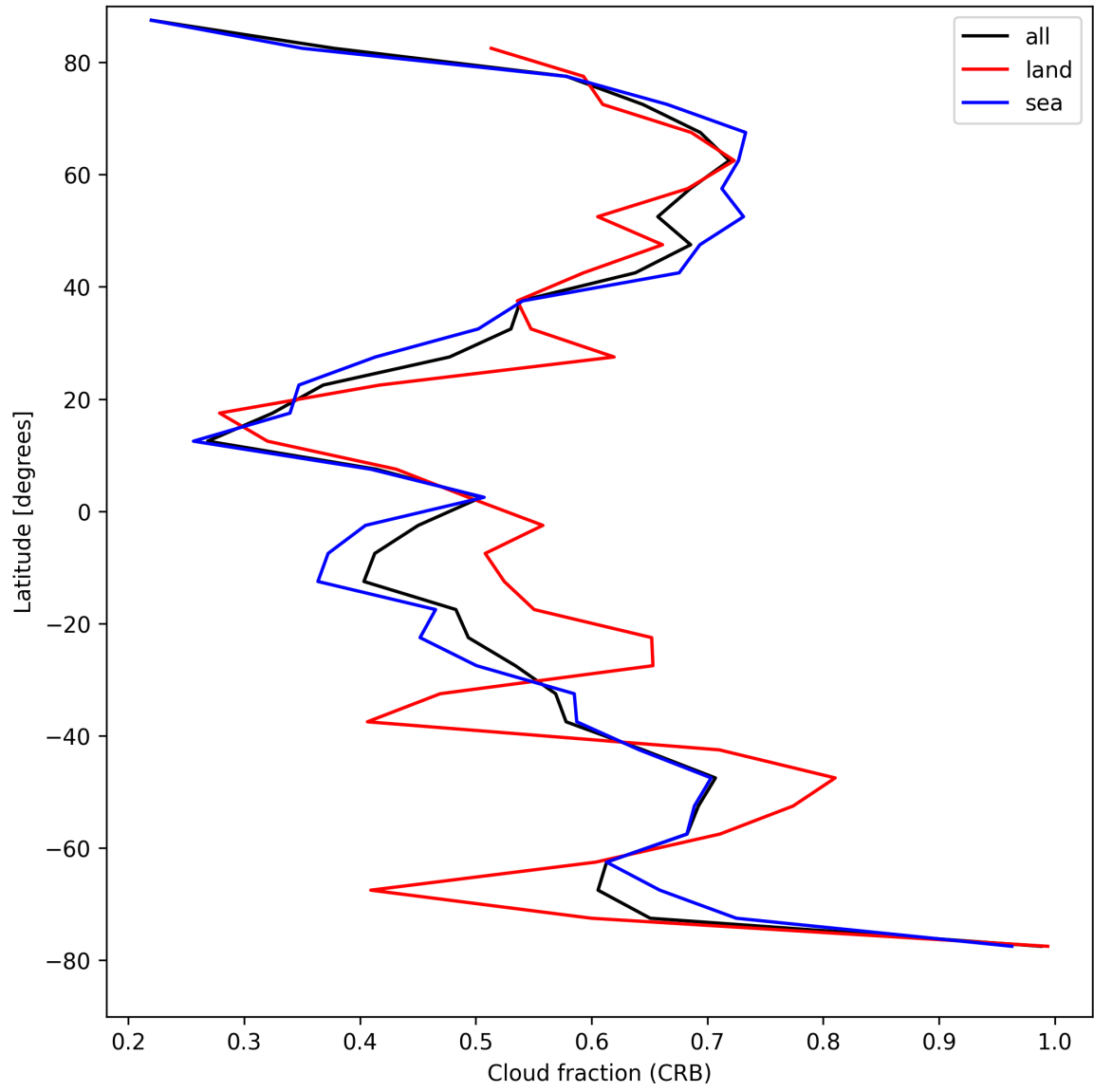


Figure 24: Zonal average of “Cloud fraction (CRB)” for 2025-04-24 to 2025-04-25.

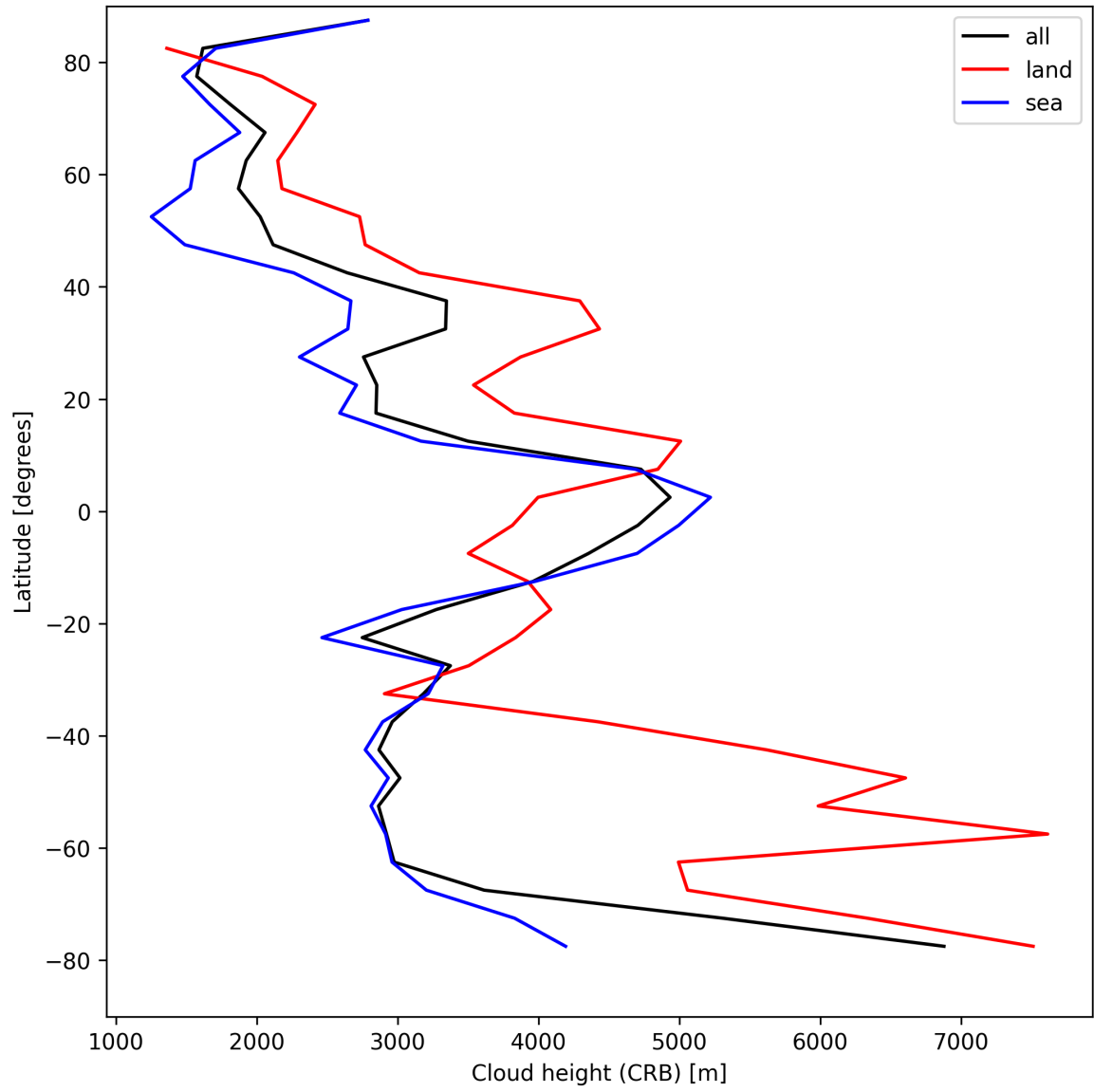


Figure 25: Zonal average of “Cloud height (CRB)” for 2025-04-24 to 2025-04-25.

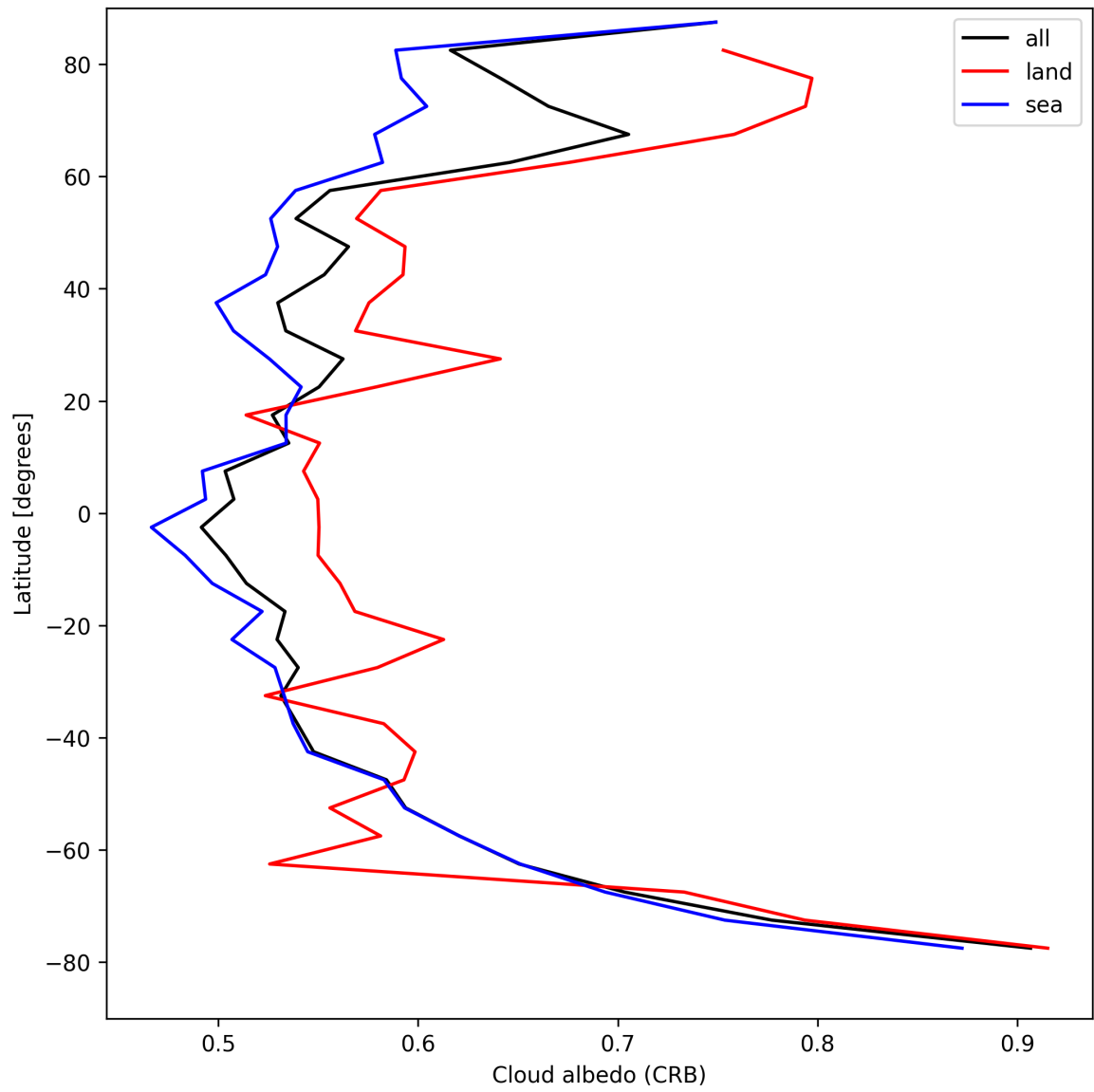


Figure 26: Zonal average of “Cloud albedo (CRB)” for 2025-04-24 to 2025-04-25.

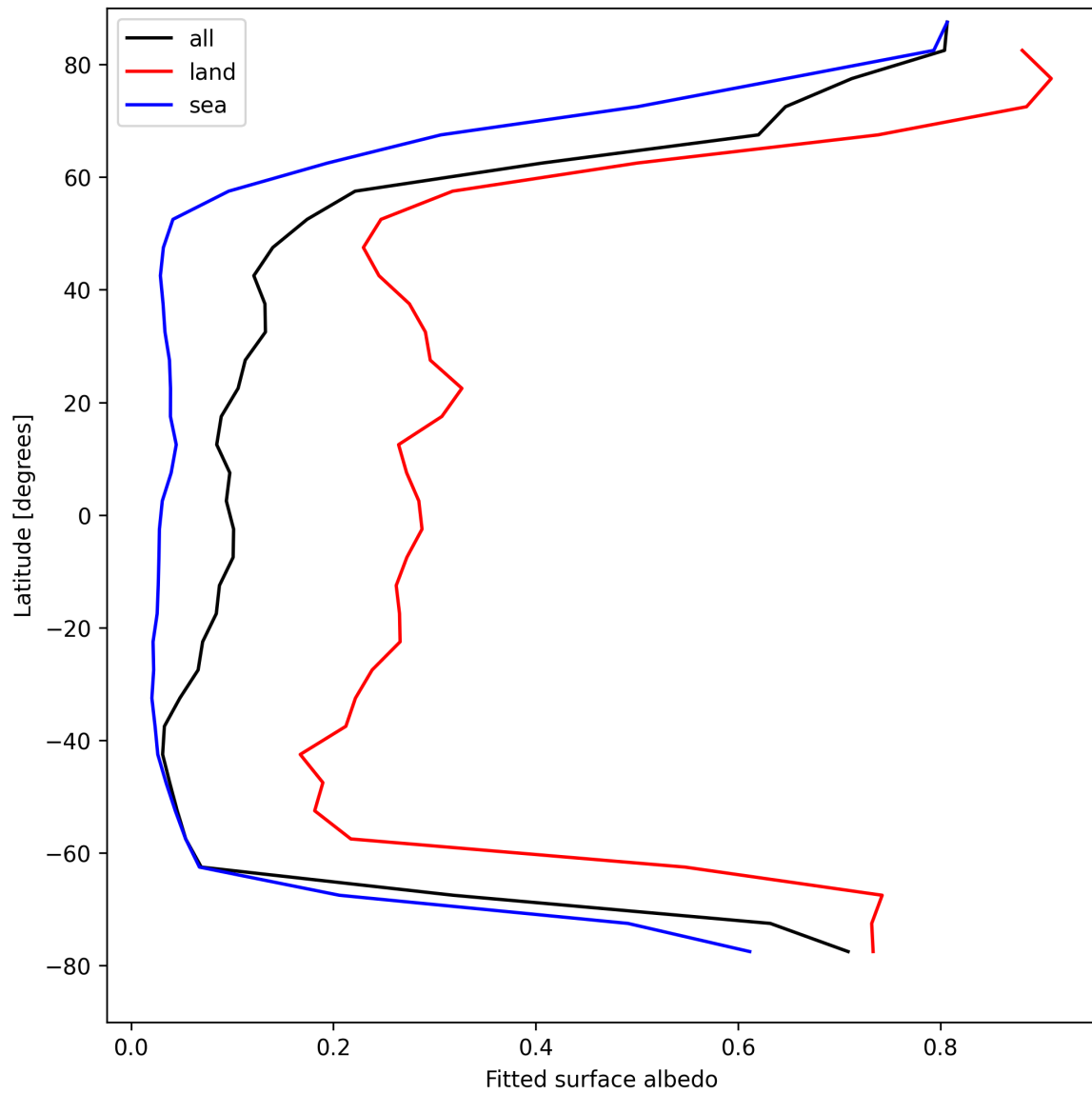


Figure 27: Zonal average of “Fitted surface albedo” for 2025-04-24 to 2025-04-25.

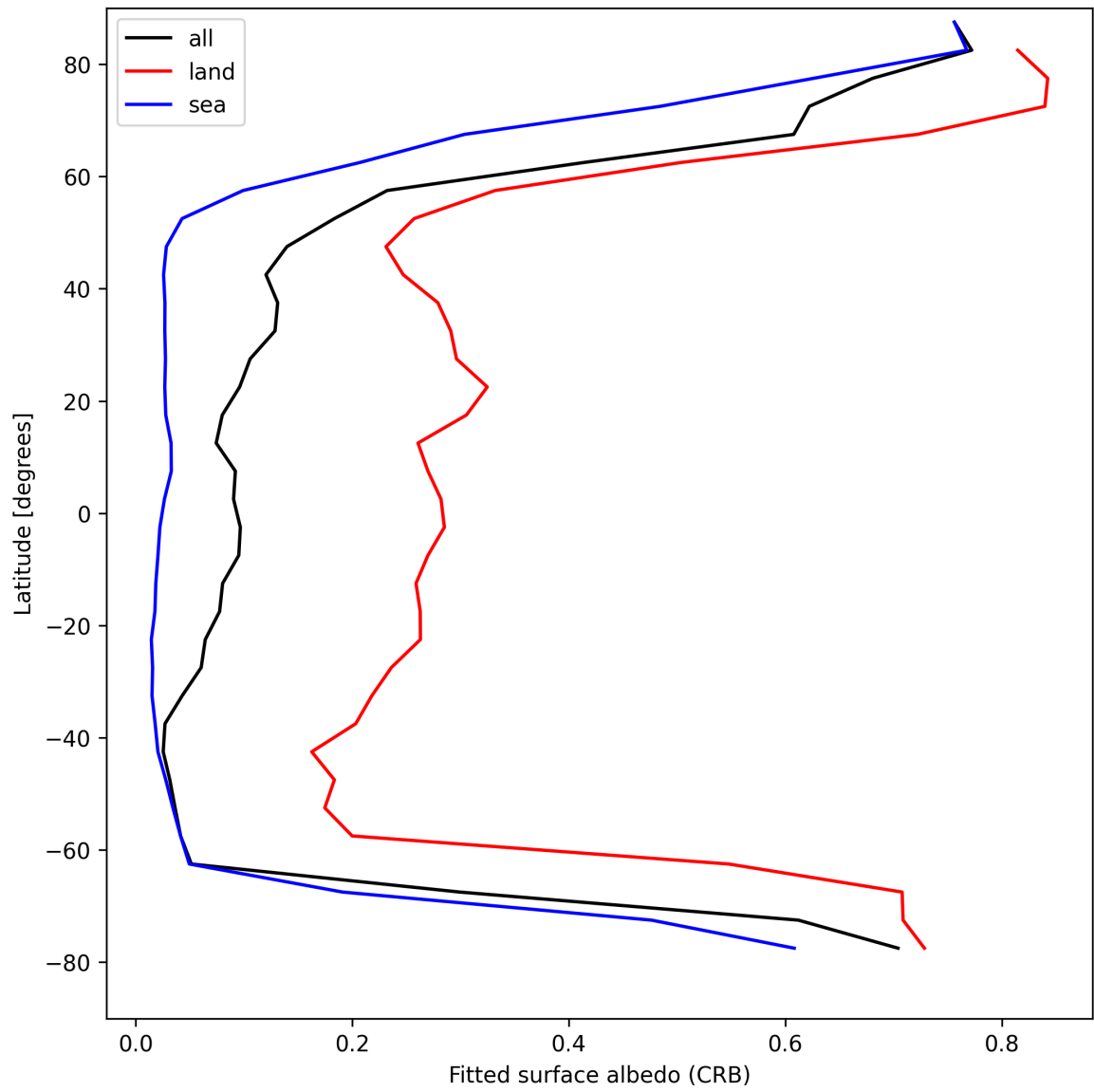


Figure 28: Zonal average of “Fitted surface albedo (CRB)” for 2025-04-24 to 2025-04-25.

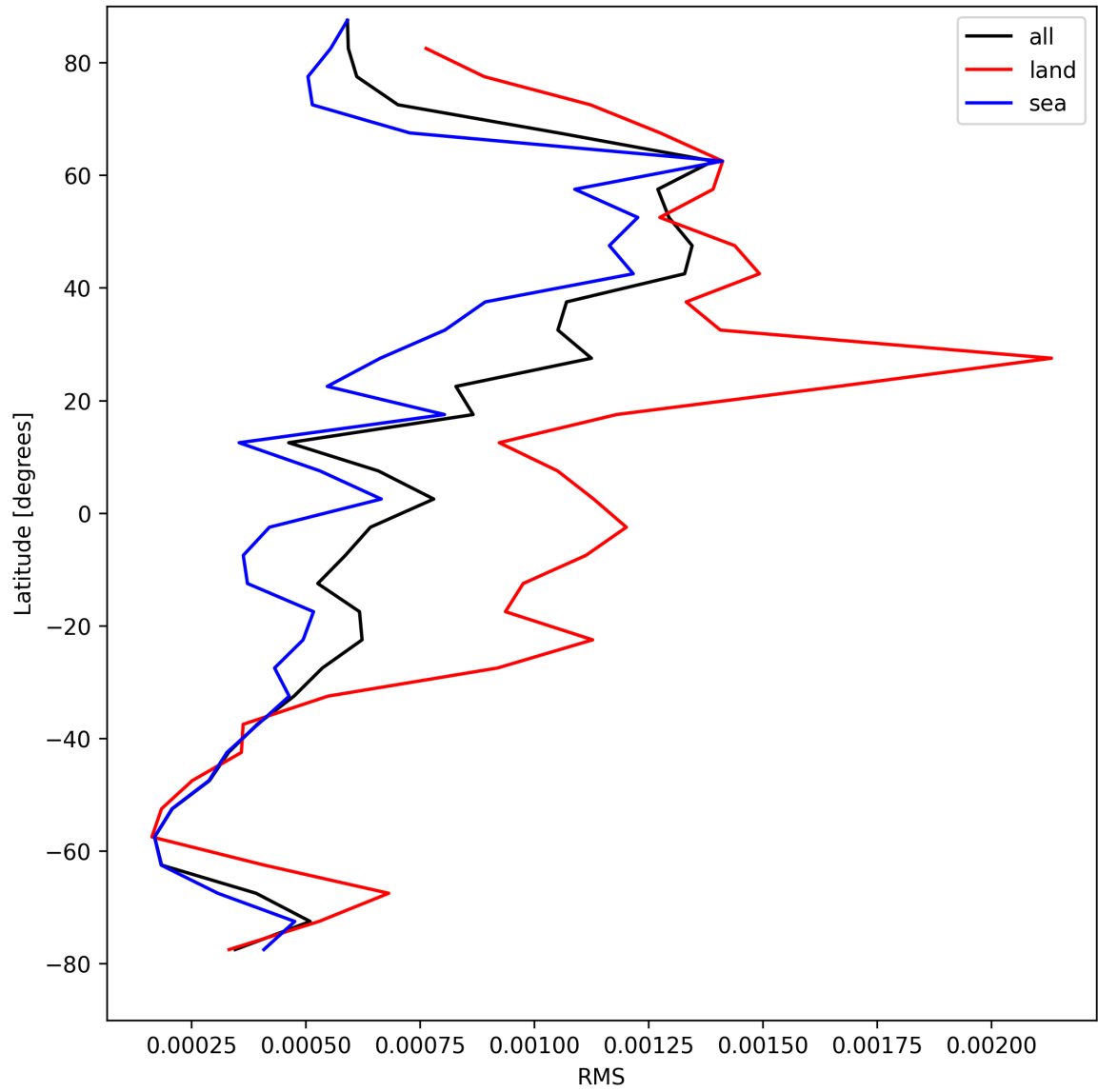


Figure 29: Zonal average of “RMS” for 2025-04-24 to 2025-04-25.

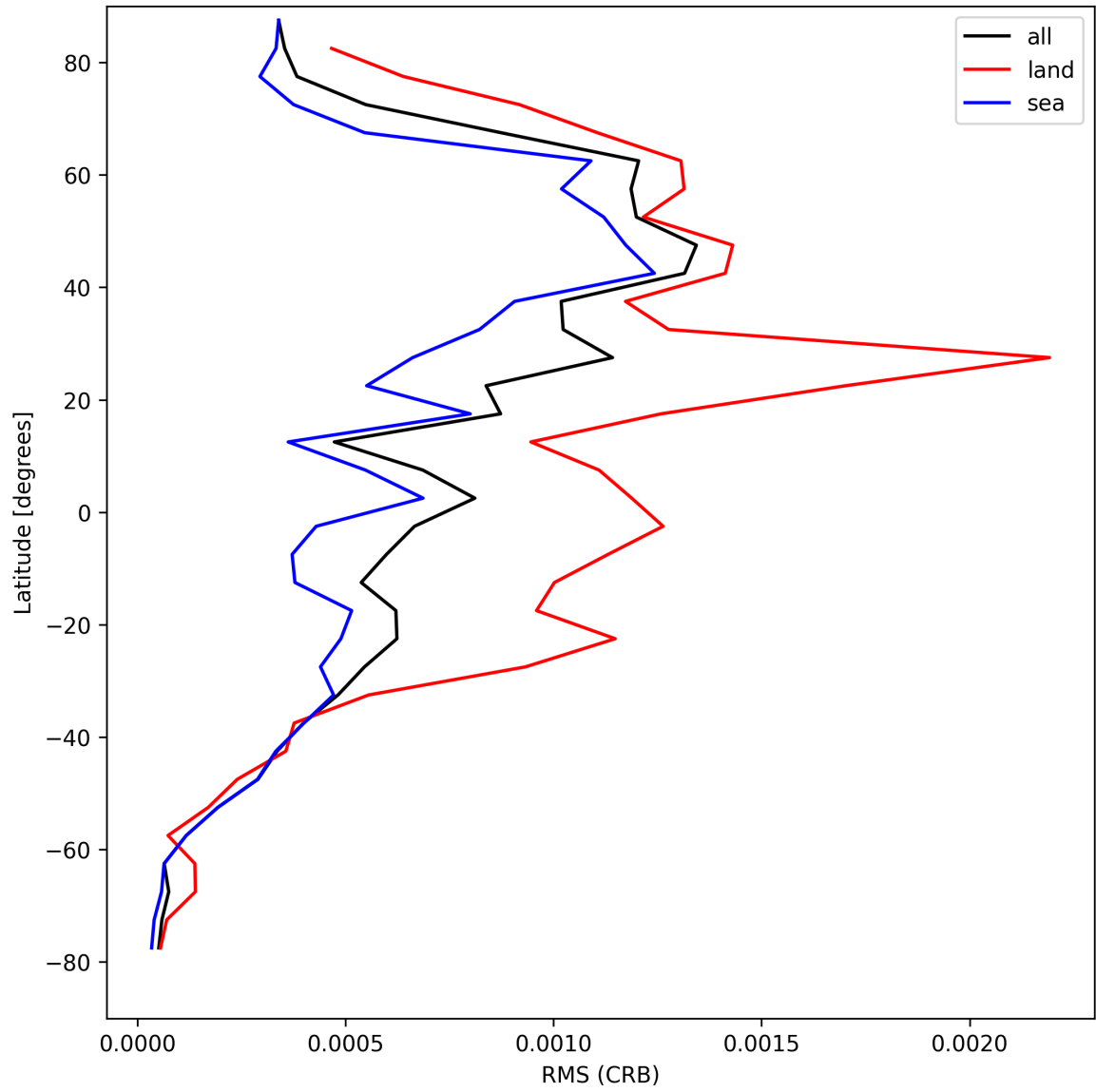


Figure 30: Zonal average of “RMS (CRB)” for 2025-04-24 to 2025-04-25.

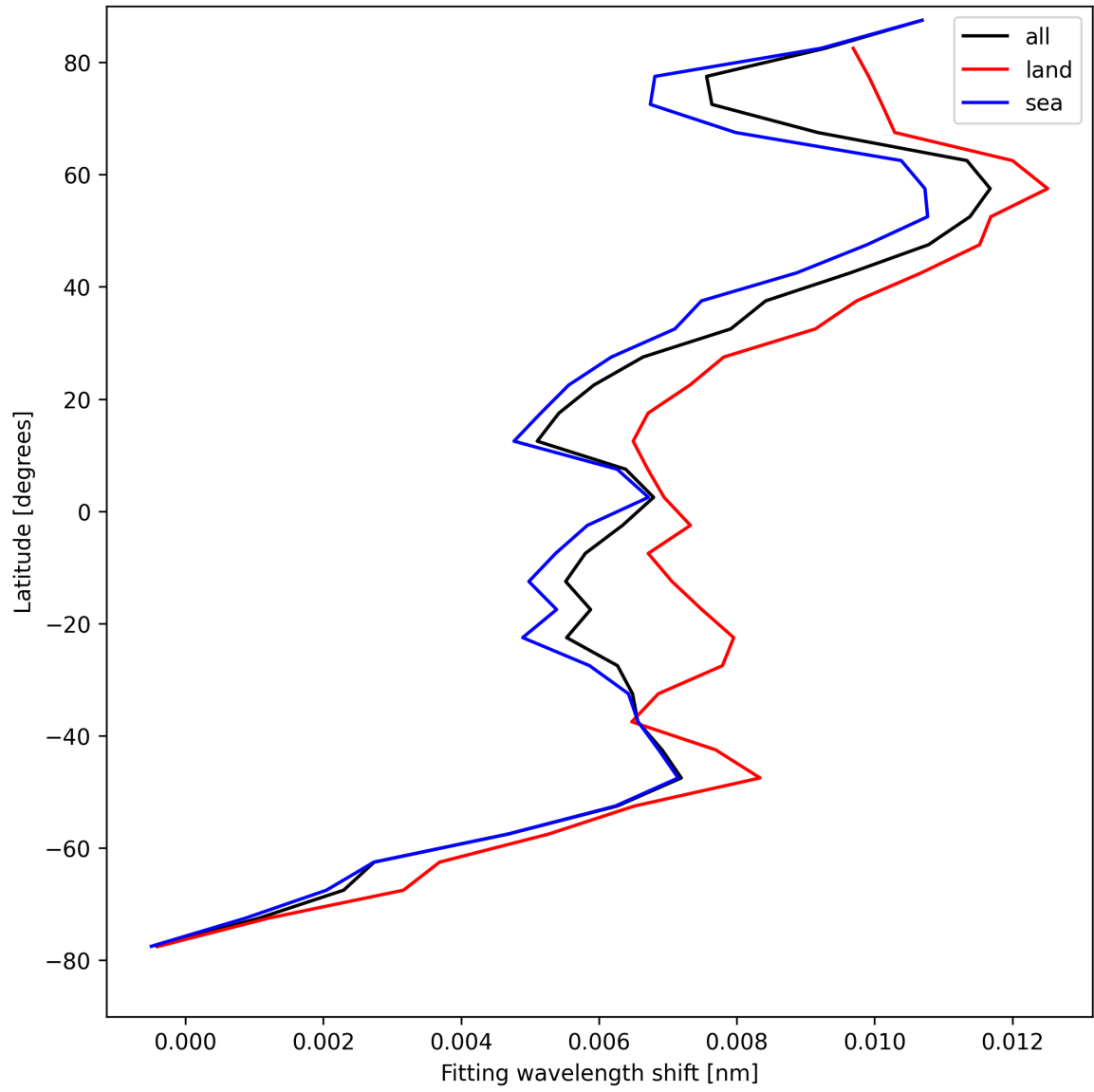


Figure 31: Zonal average of “Fitting wavelength shift” for 2025-04-24 to 2025-04-25.

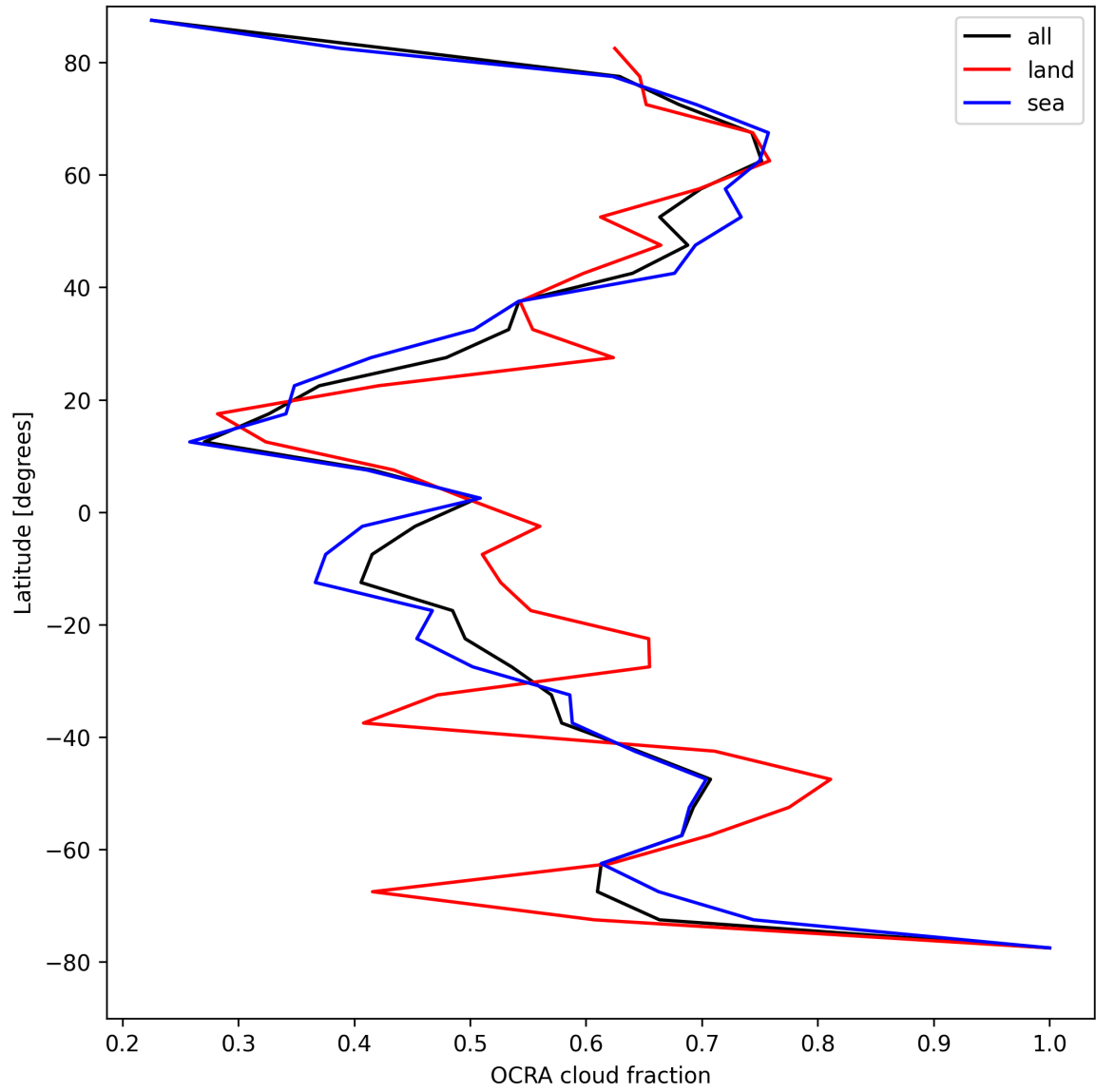


Figure 32: Zonal average of “OCRA cloud fraction” for 2025-04-24 to 2025-04-25.

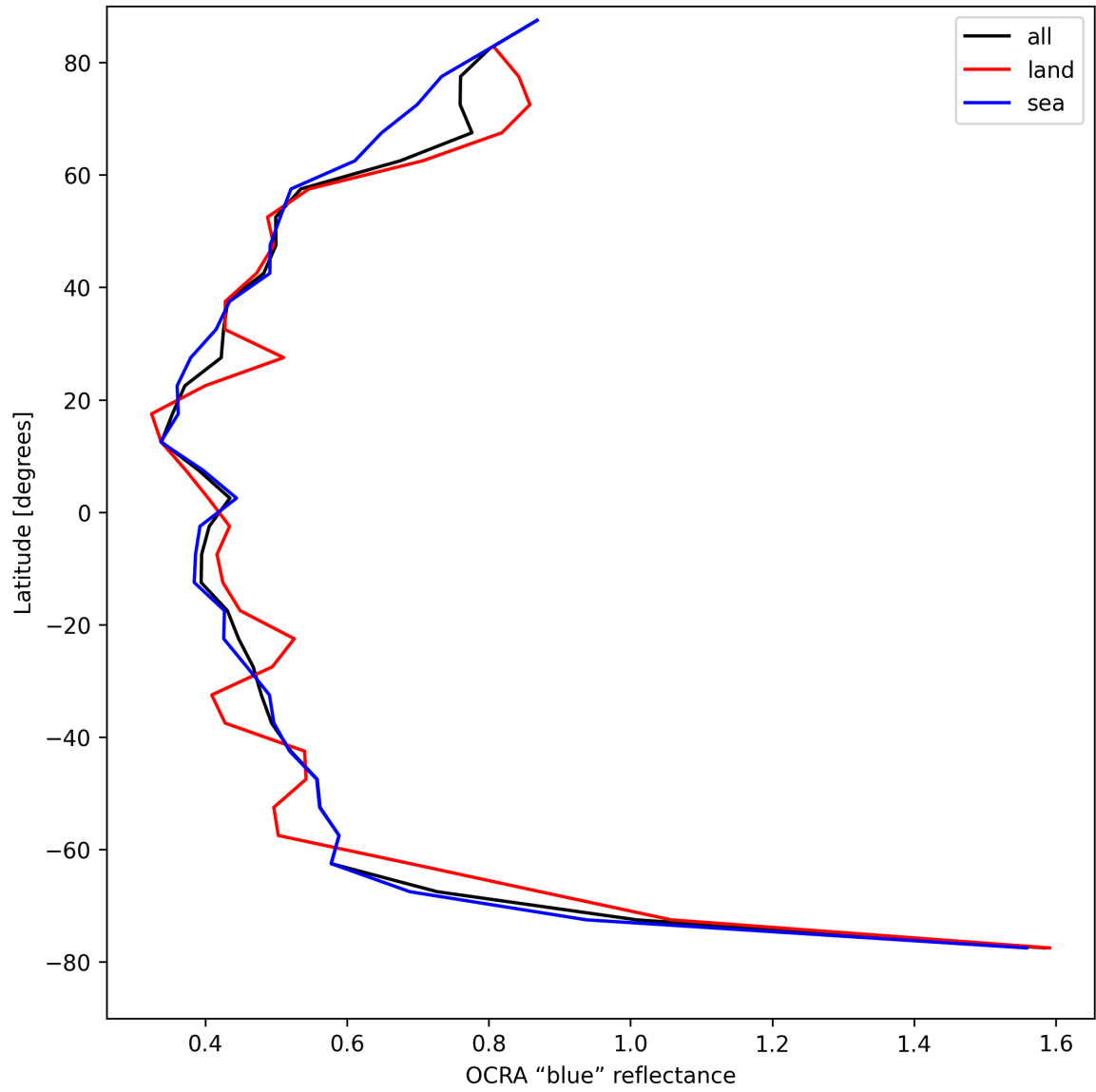


Figure 33: Zonal average of “OCRA “blue” reflectance” for 2025-04-24 to 2025-04-25.

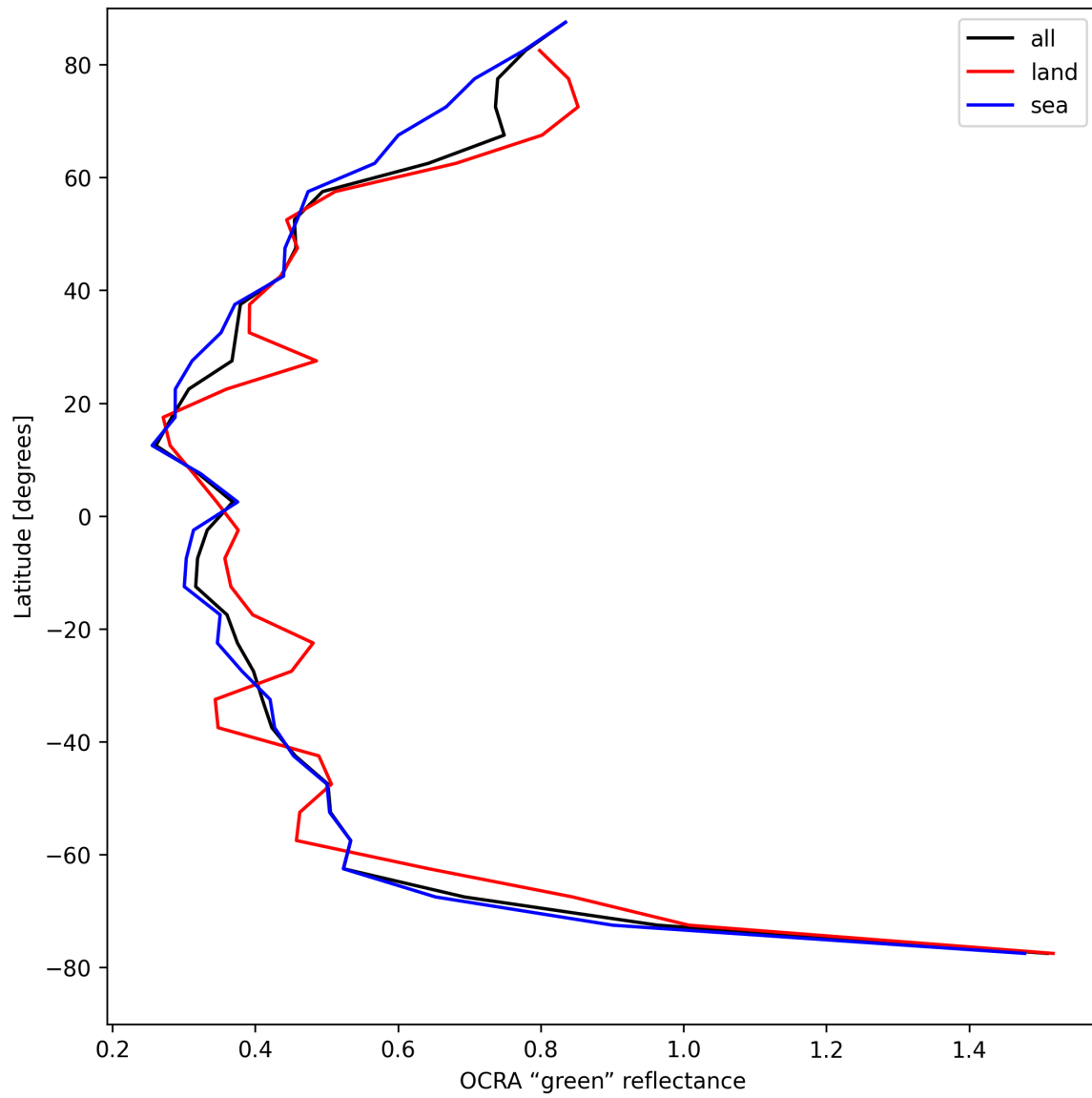


Figure 34: Zonal average of “OCRA “green” reflectance” for 2025-04-24 to 2025-04-25.

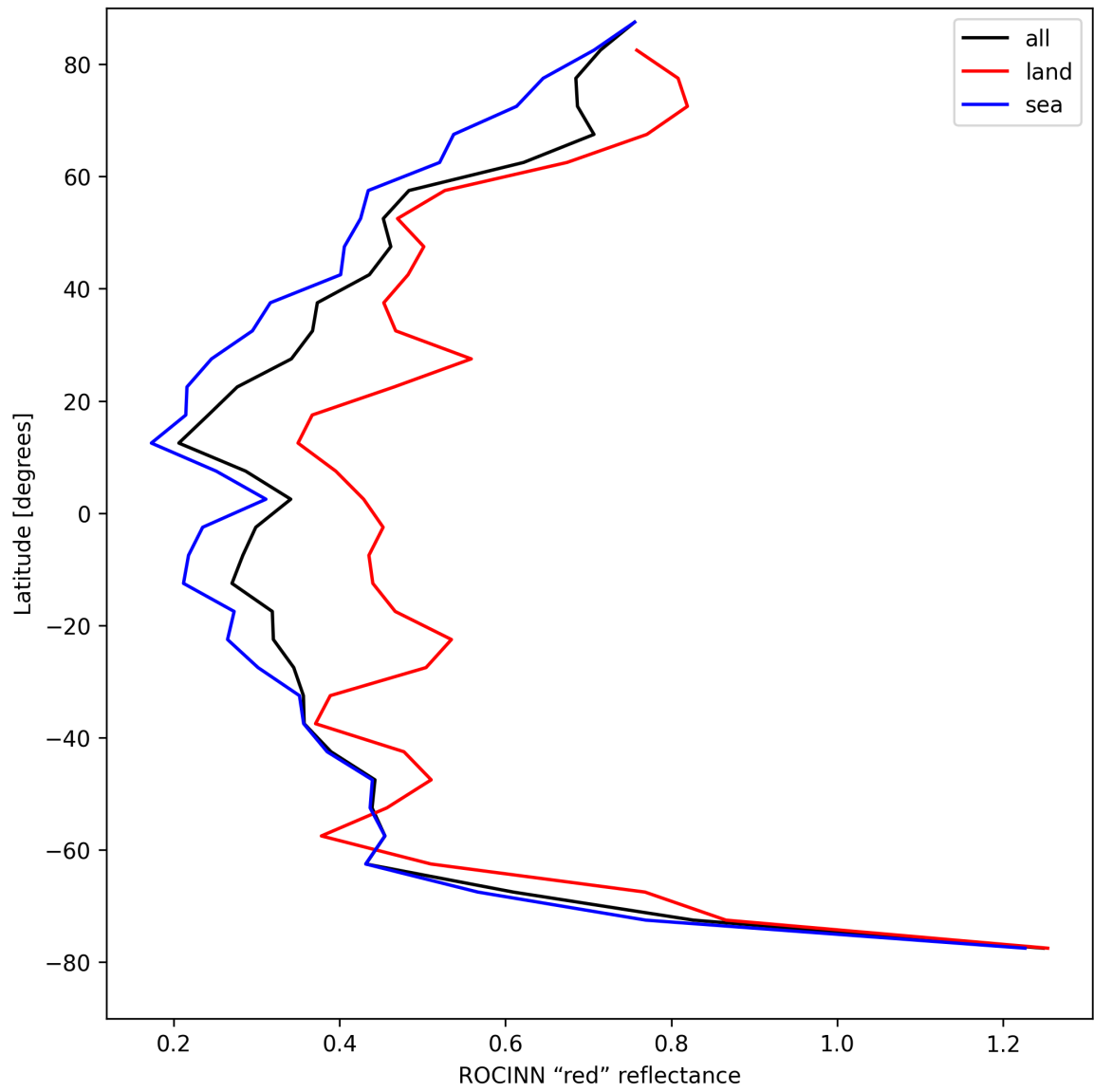


Figure 35: Zonal average of “ROCINN “red” reflectance” for 2025-04-24 to 2025-04-25.

8 Histograms

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

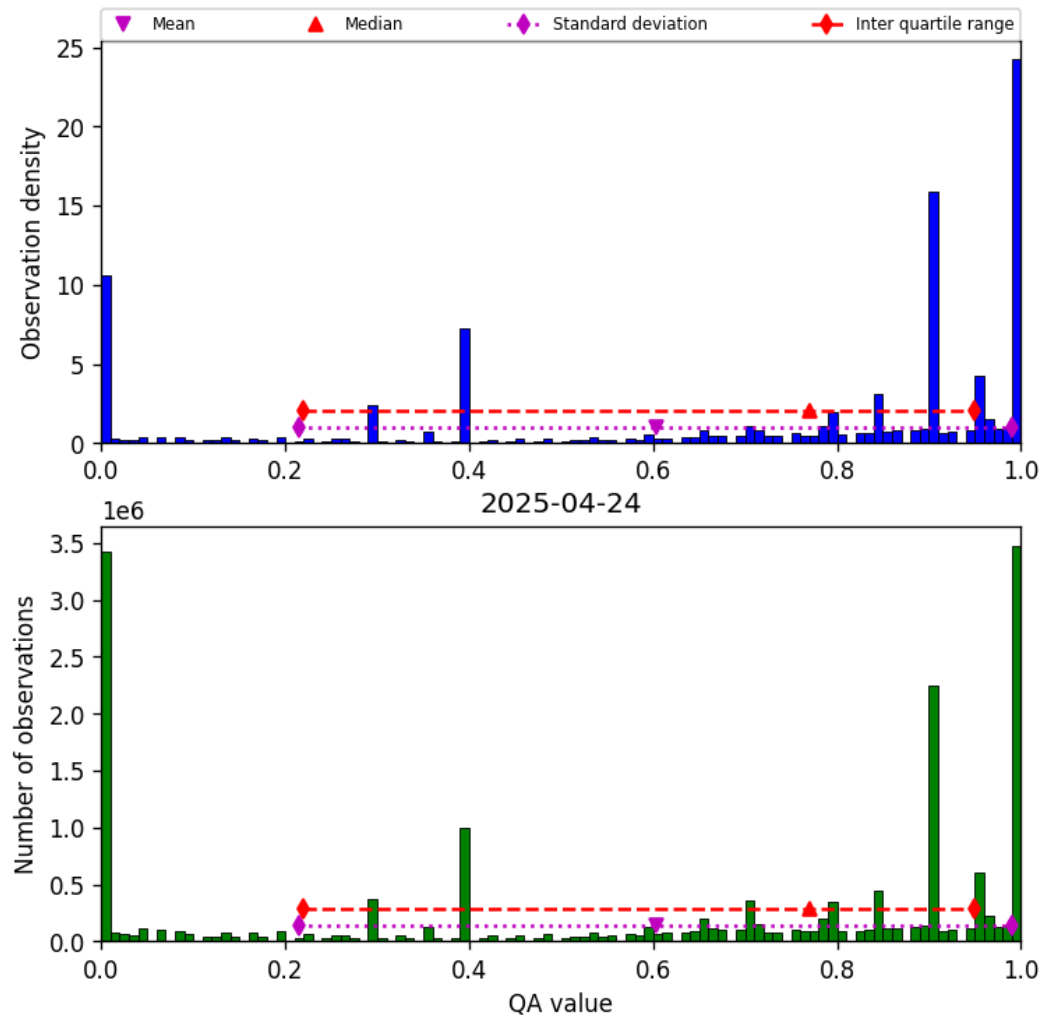


Figure 36: Histogram of “QA value” for 2025-04-24 to 2025-04-25

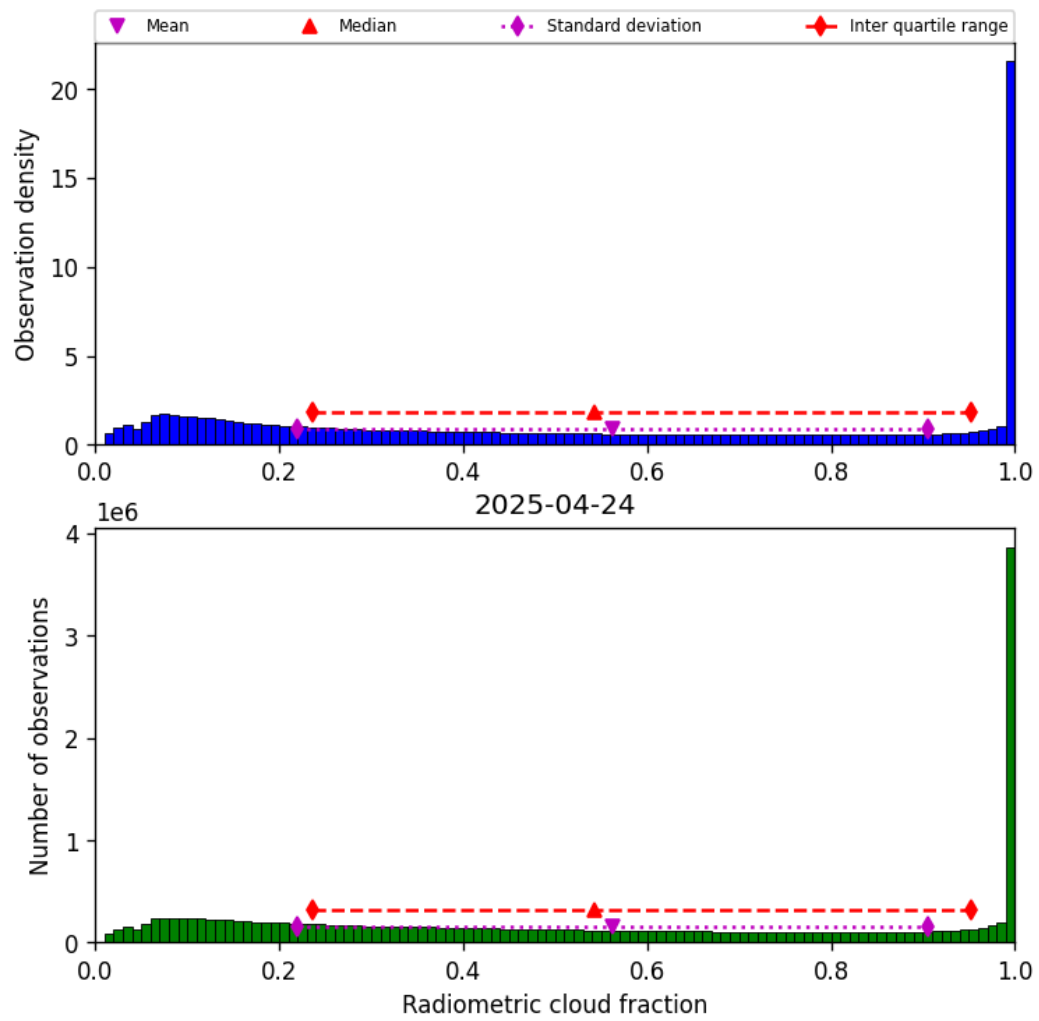


Figure 37: Histogram of “Radiometric cloud fraction” for 2025-04-24 to 2025-04-25

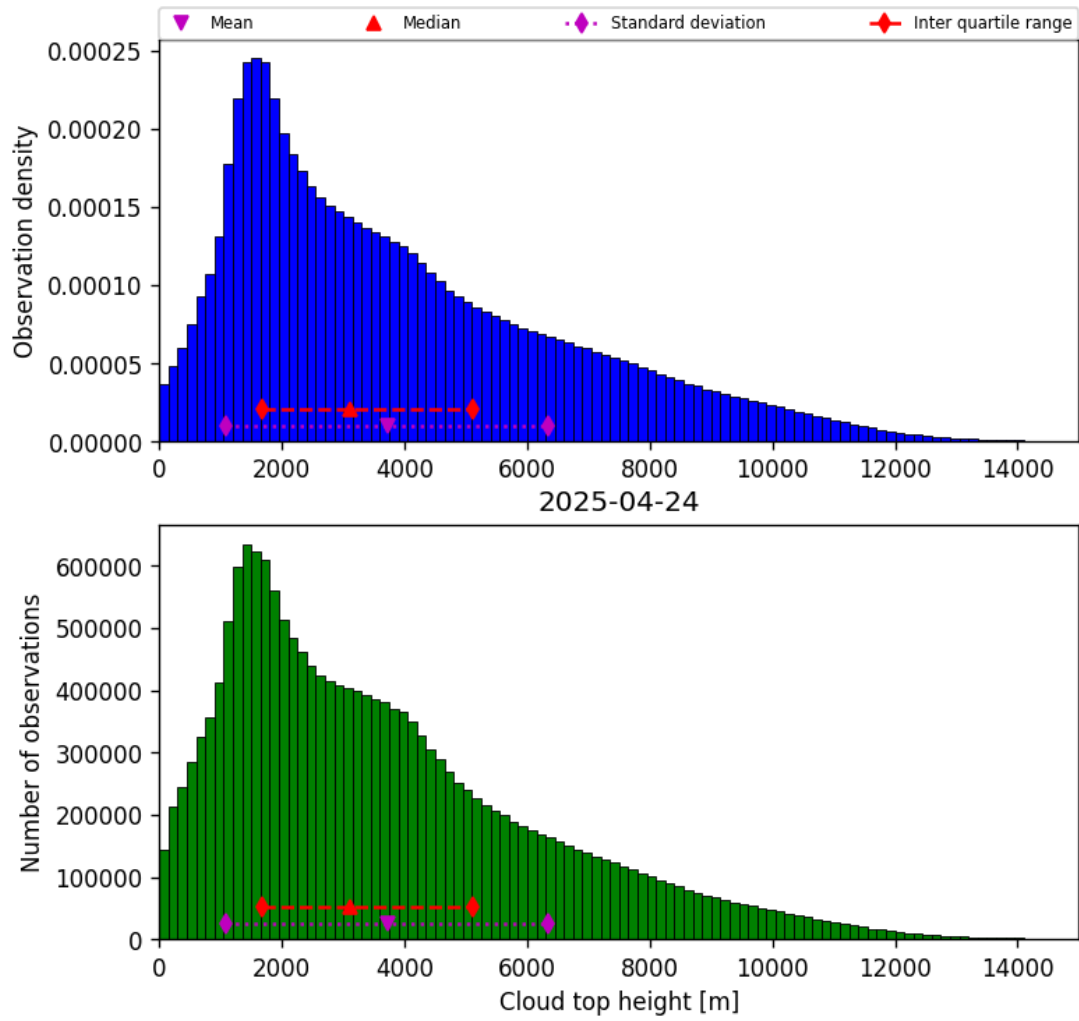


Figure 38: Histogram of “Cloud top height” for 2025-04-24 to 2025-04-25

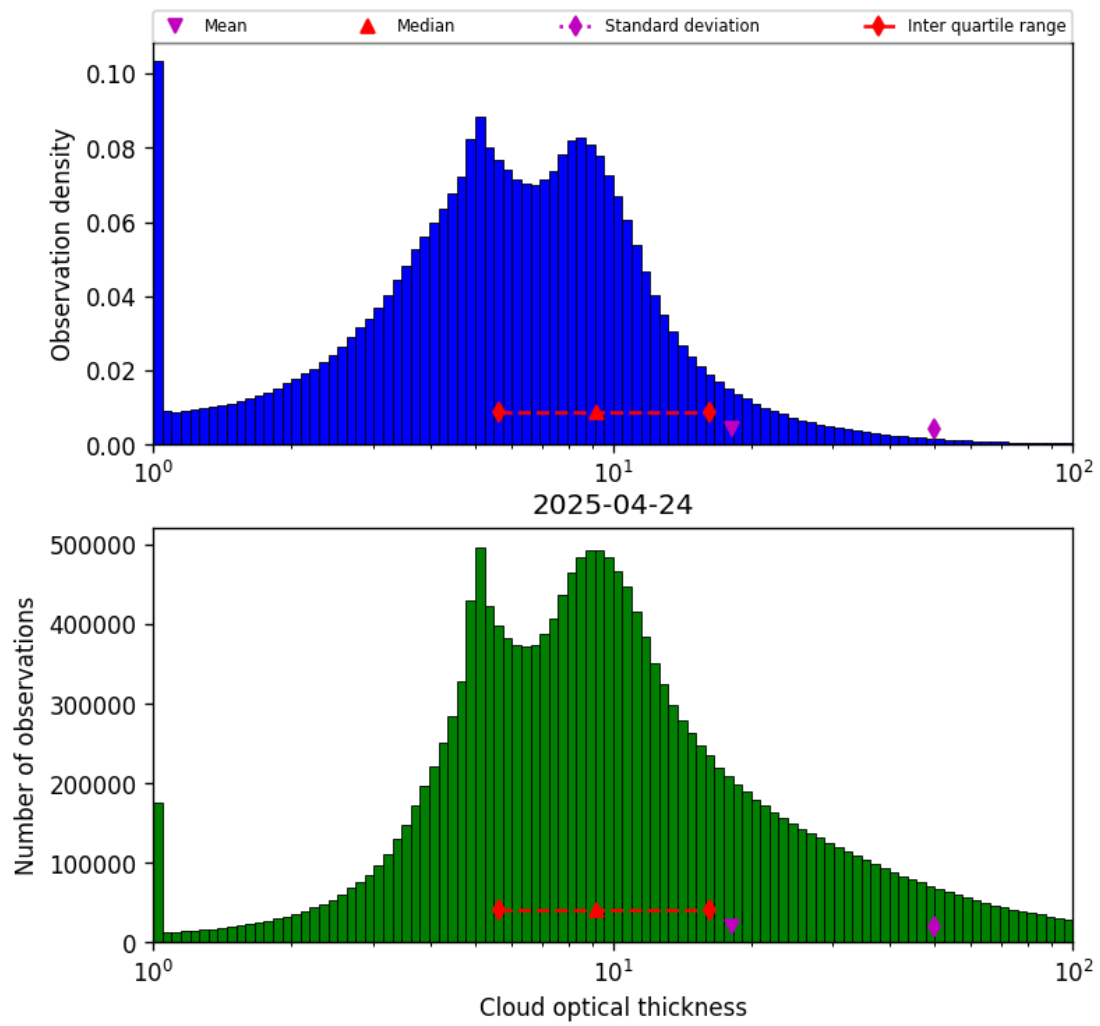


Figure 39: Histogram of “Cloud optical thickness” for 2025-04-24 to 2025-04-25

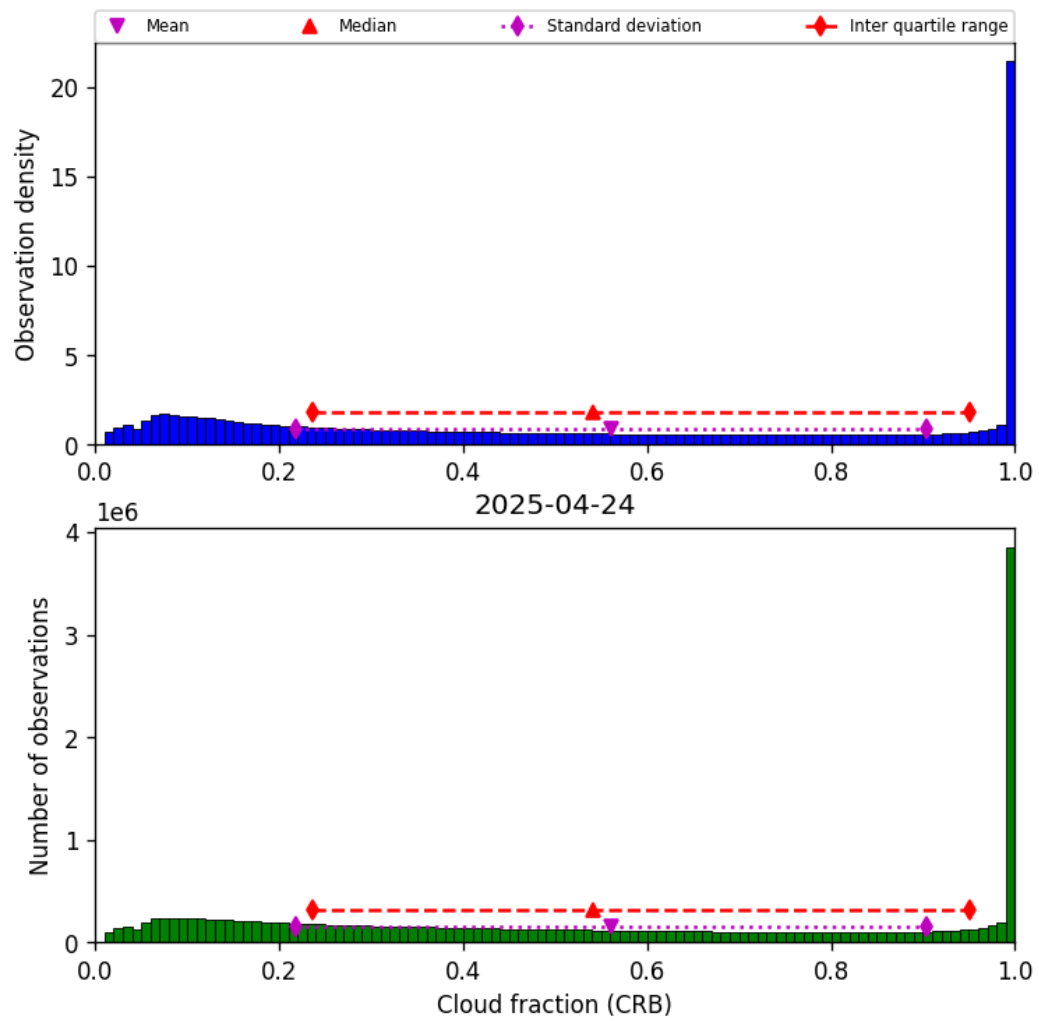


Figure 40: Histogram of “Cloud fraction (CRB)” for 2025-04-24 to 2025-04-25

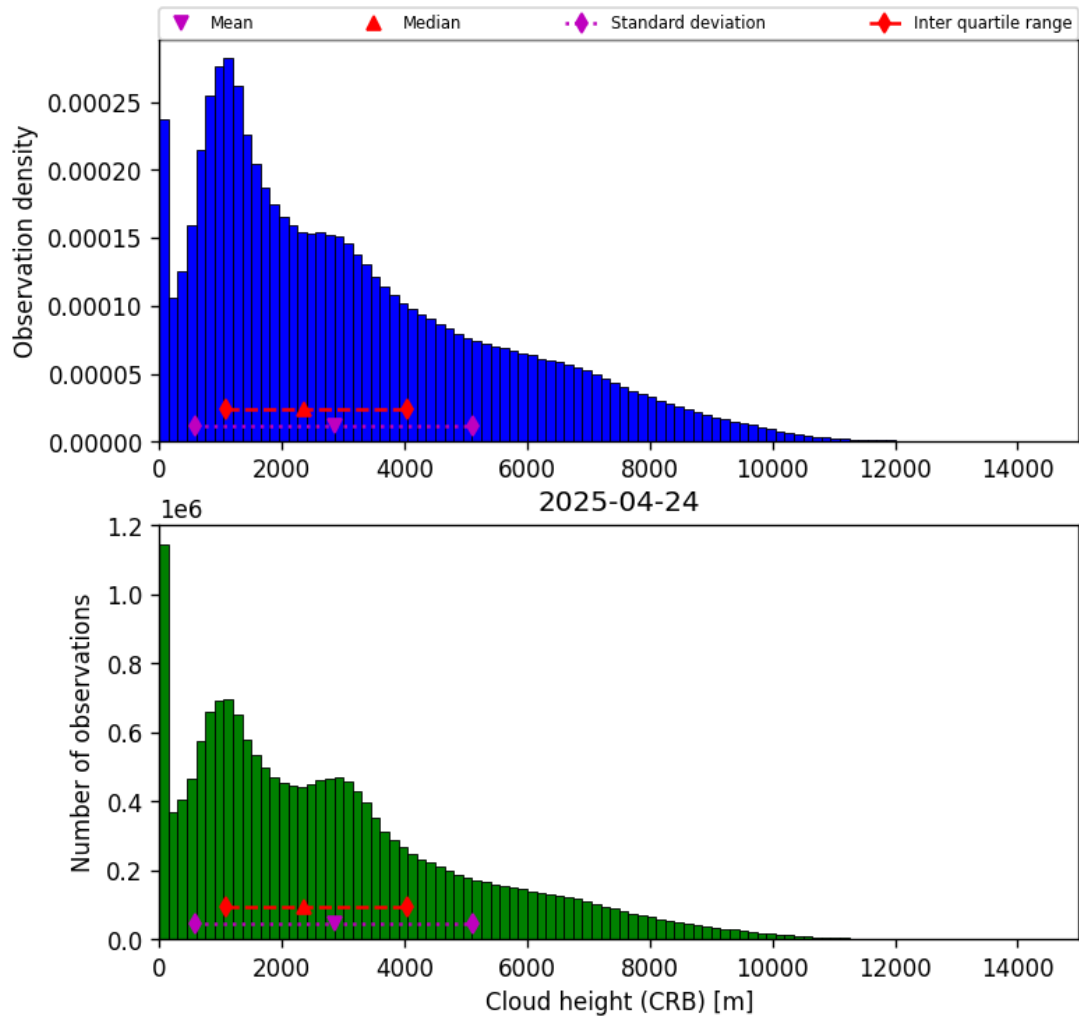


Figure 41: Histogram of “Cloud height (CRB)” for 2025-04-24 to 2025-04-25

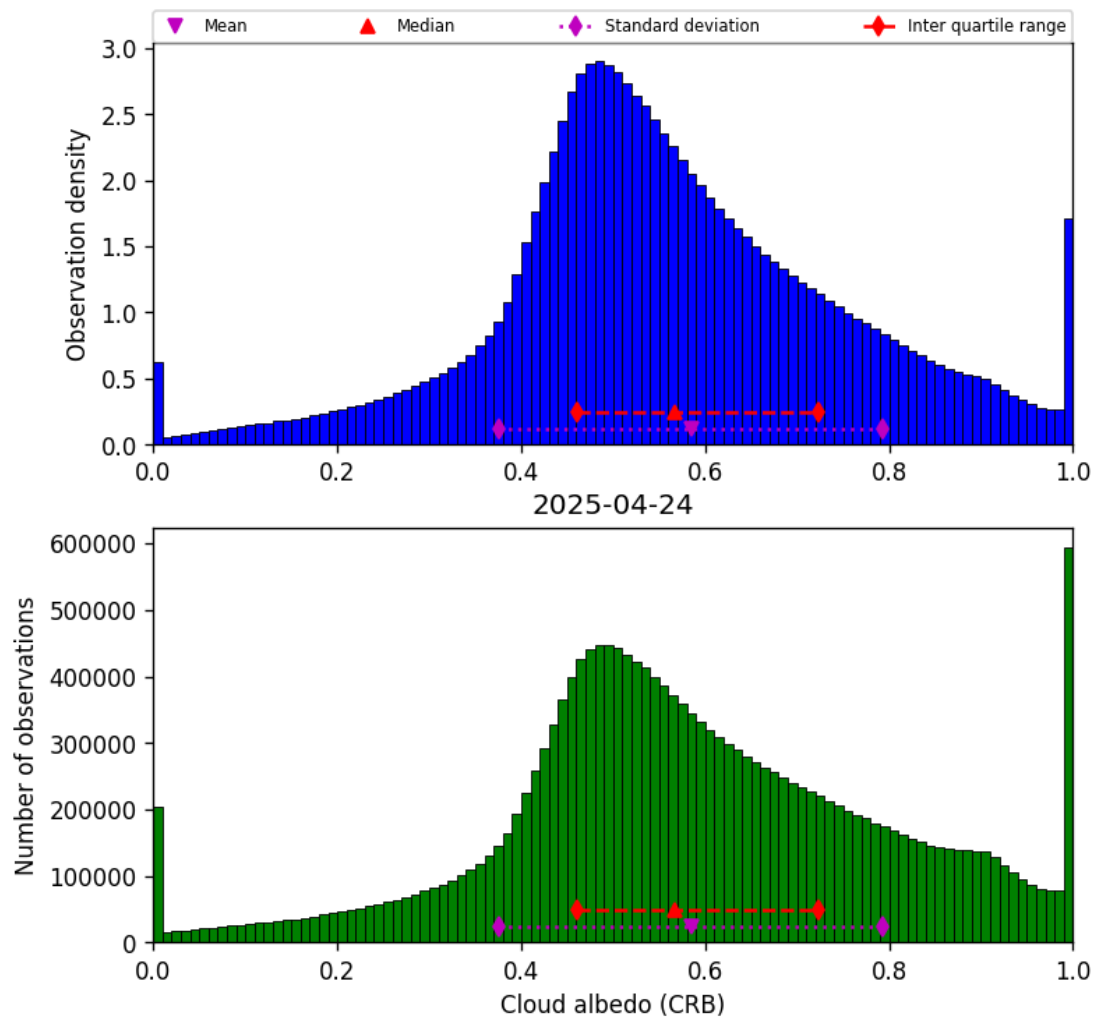


Figure 42: Histogram of “Cloud albedo (CRB)” for 2025-04-24 to 2025-04-25

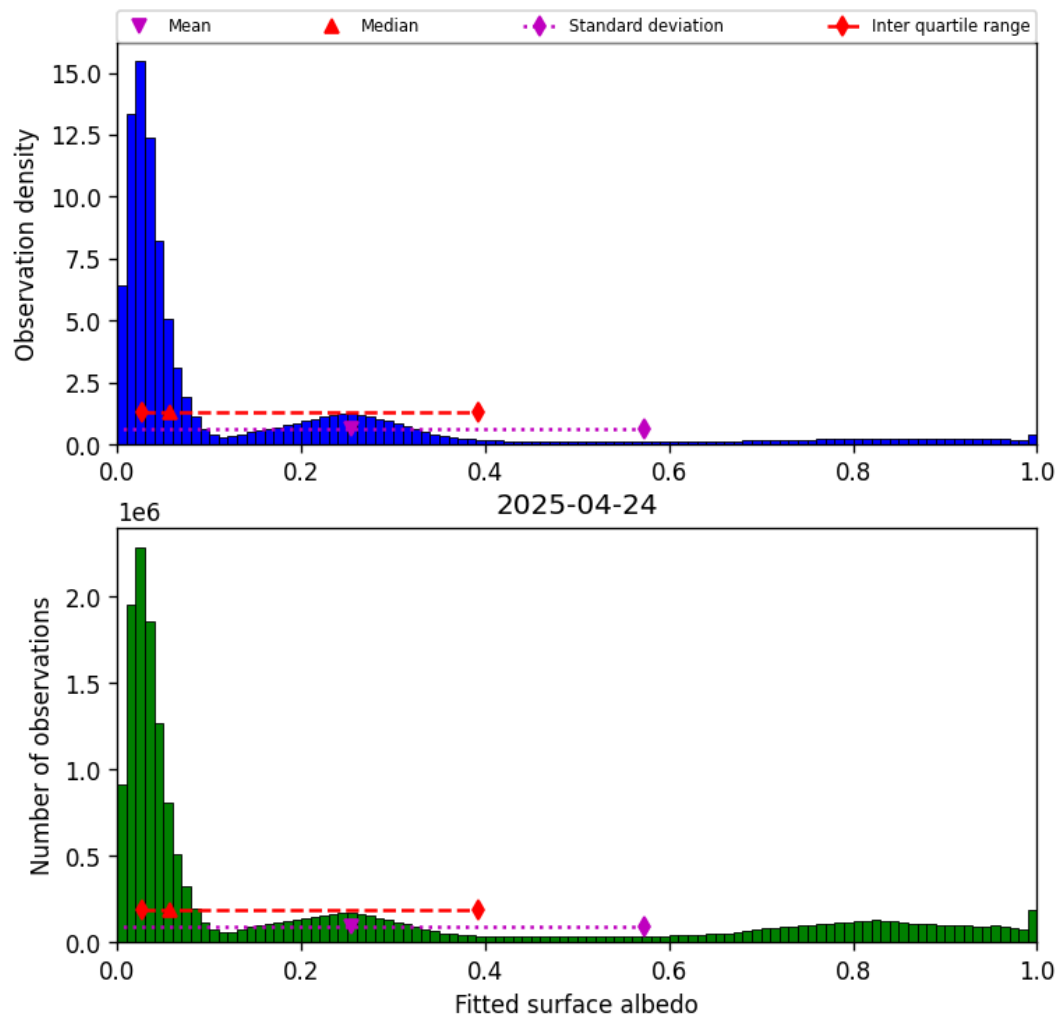


Figure 43: Histogram of “Fitted surface albedo” for 2025-04-24 to 2025-04-25

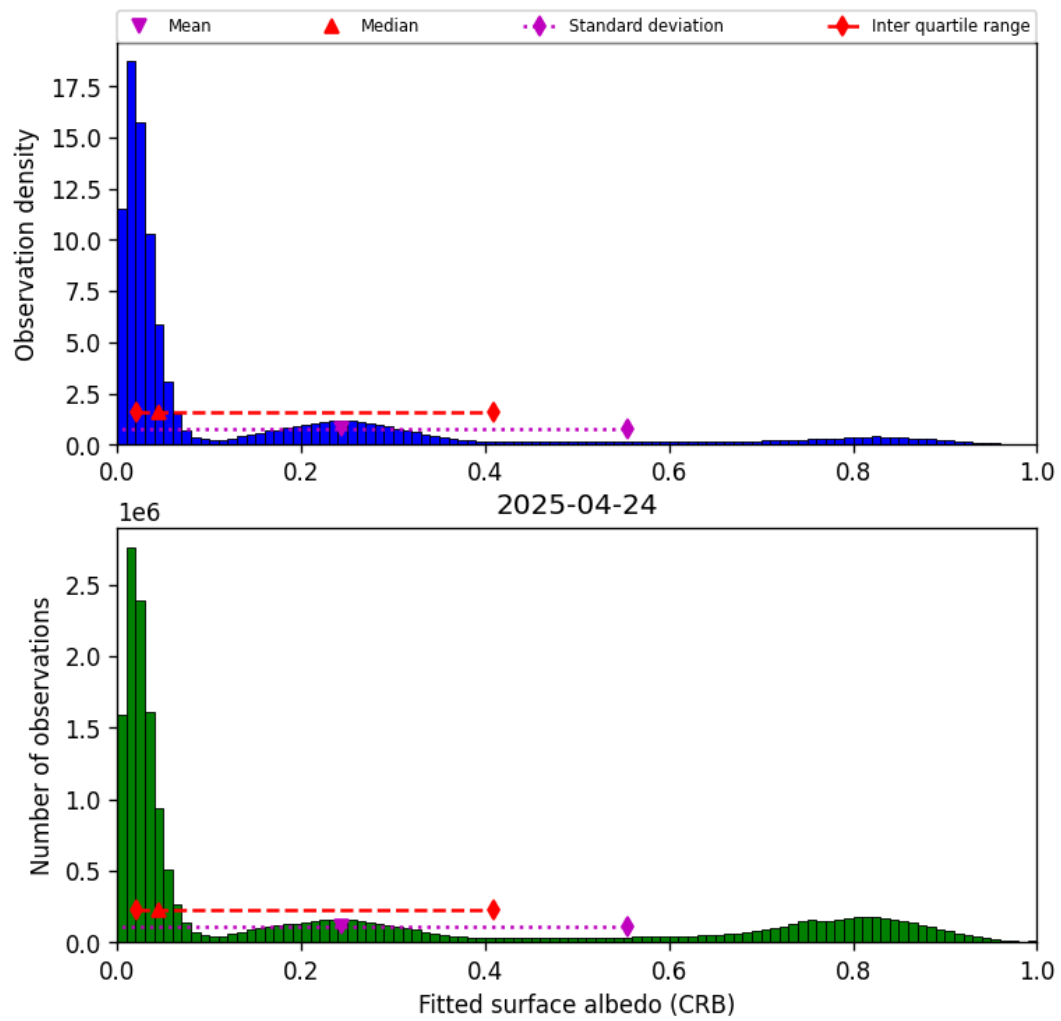


Figure 44: Histogram of “Fitted surface albedo (CRB)” for 2025-04-24 to 2025-04-25

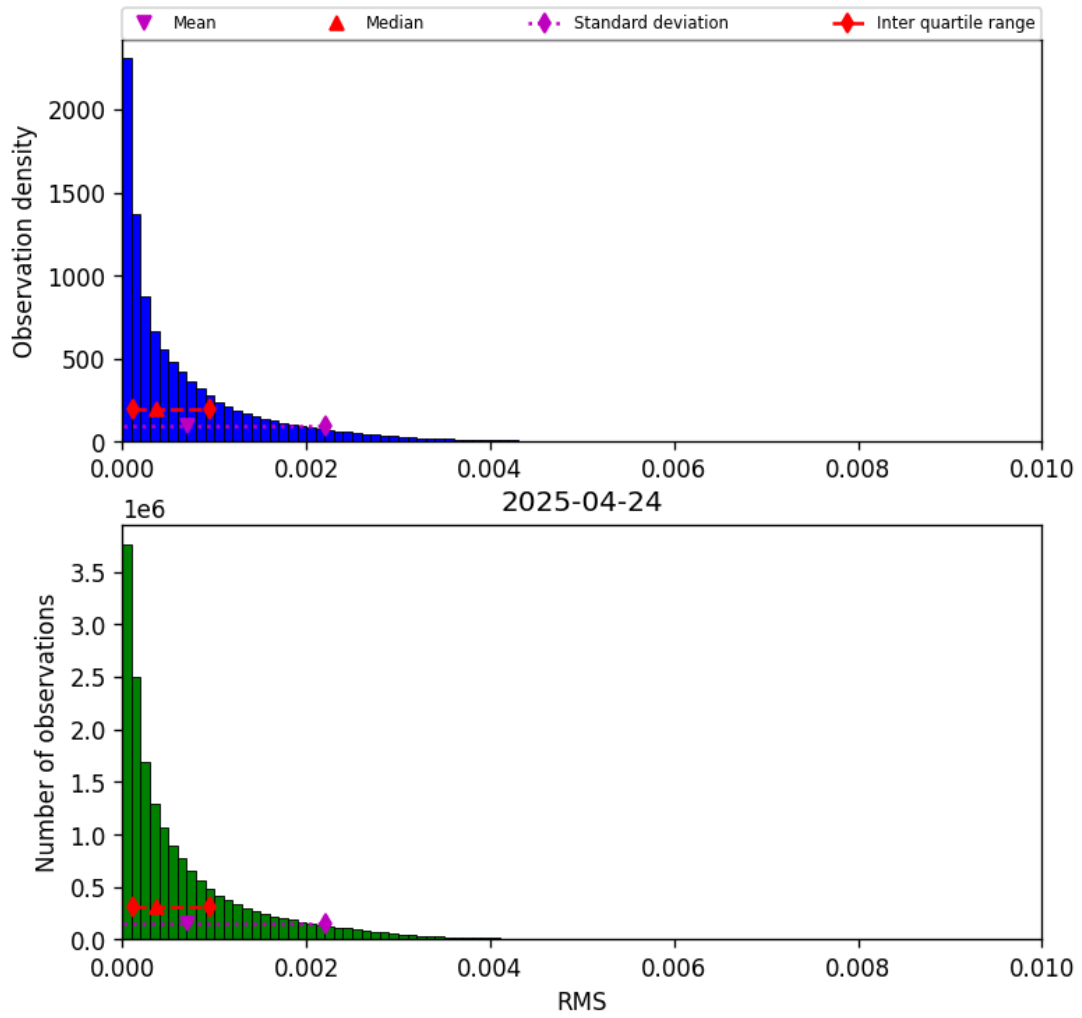


Figure 45: Histogram of “RMS” for 2025-04-24 to 2025-04-25

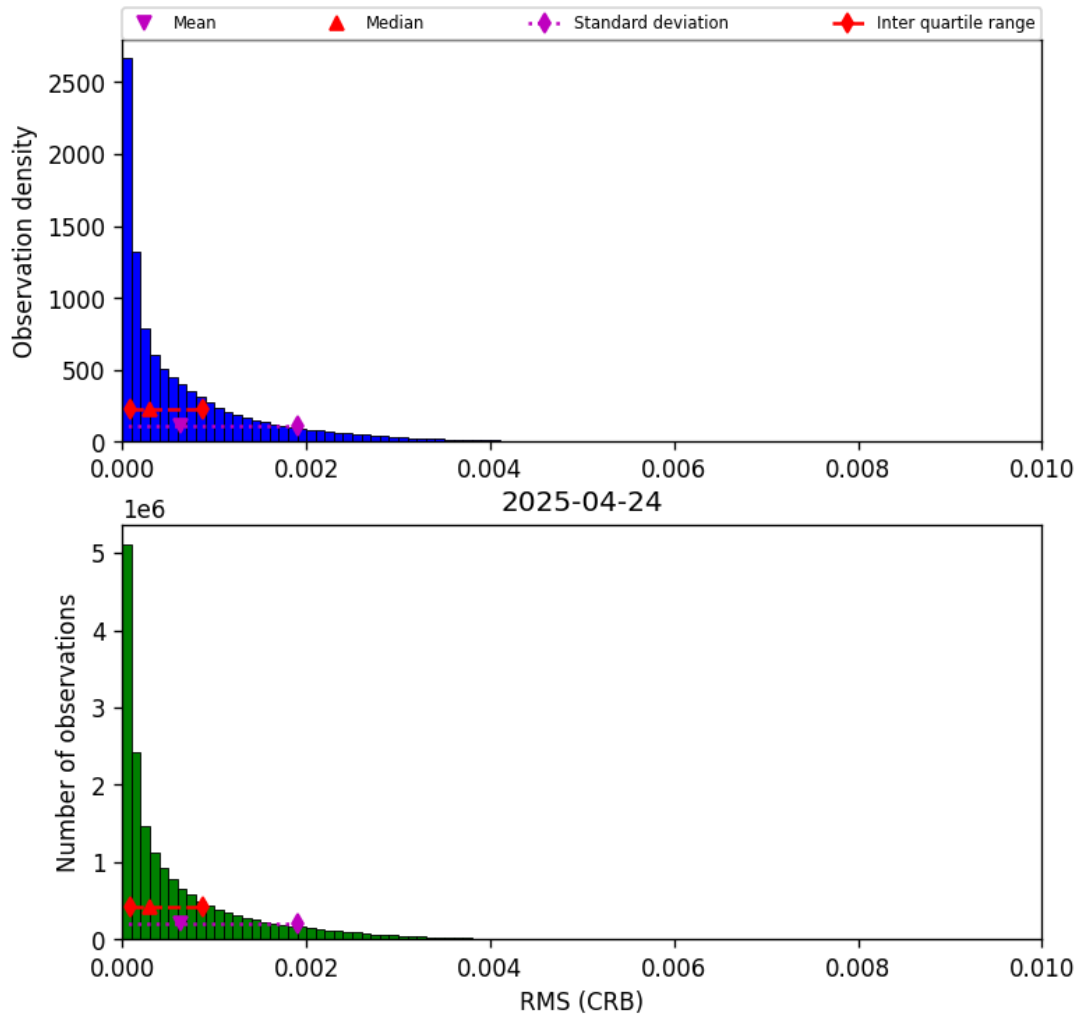


Figure 46: Histogram of “RMS (CRB)” for 2025-04-24 to 2025-04-25

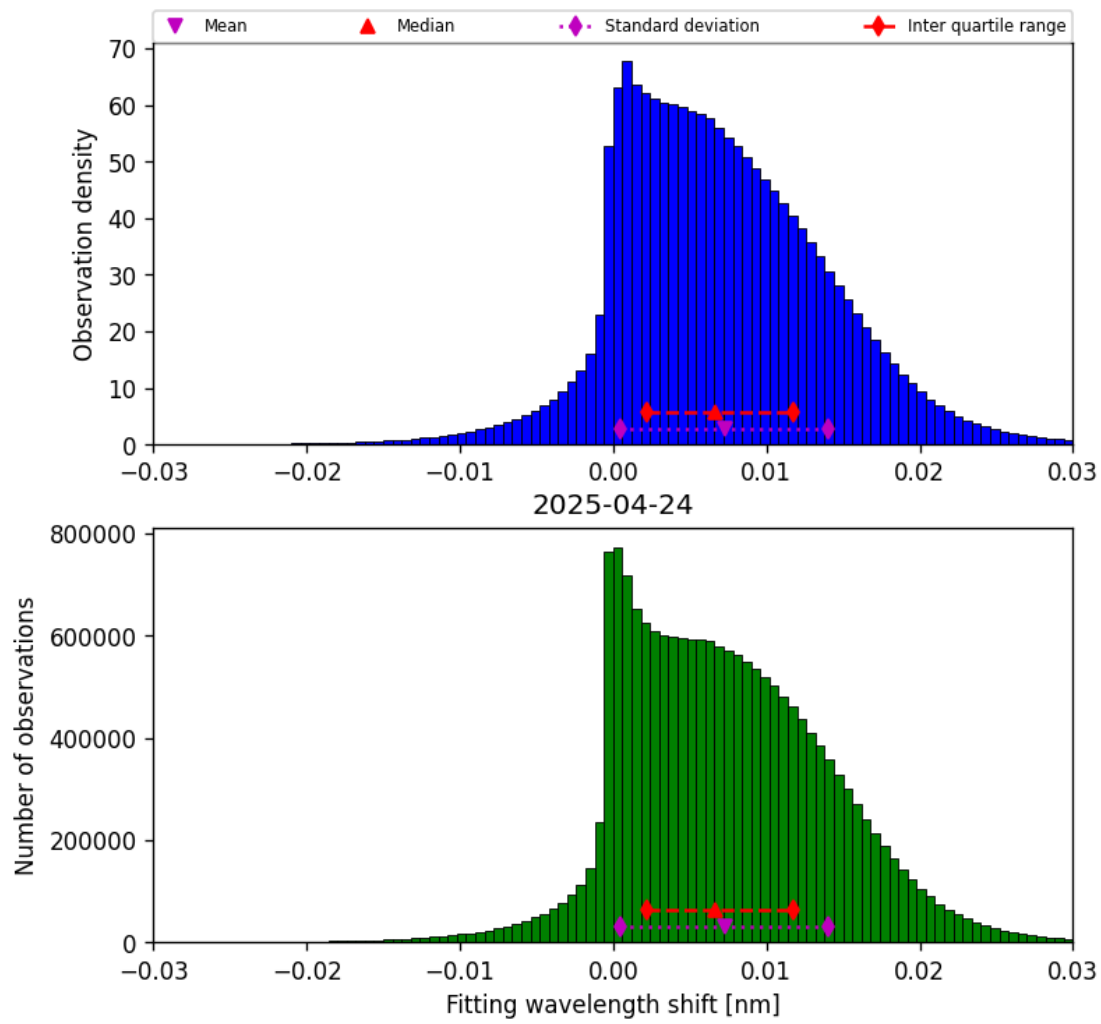


Figure 47: Histogram of “Fitting wavelength shift” for 2025-04-24 to 2025-04-25

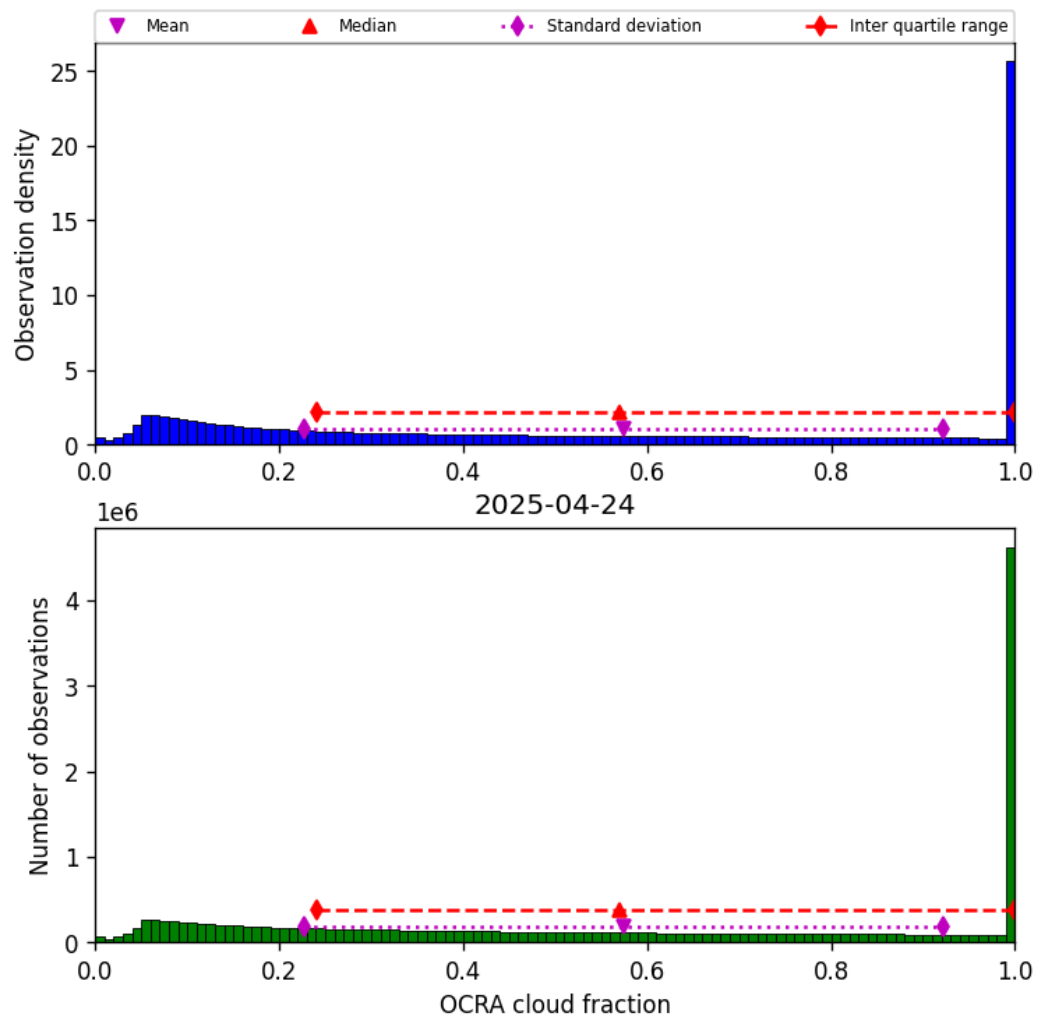


Figure 48: Histogram of “OCRA cloud fraction” for 2025-04-24 to 2025-04-25

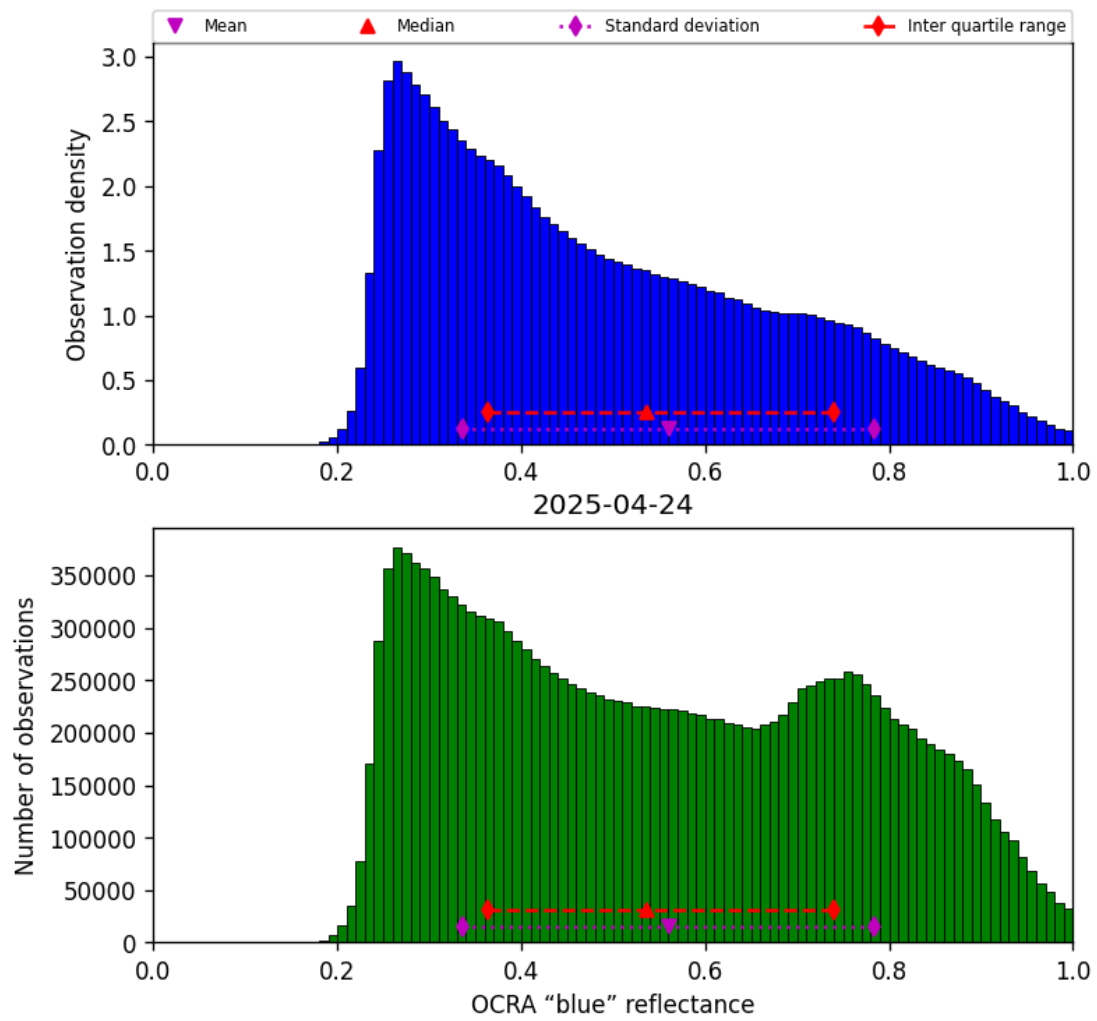


Figure 49: Histogram of “OCRA “blue” reflectance” for 2025-04-24 to 2025-04-25

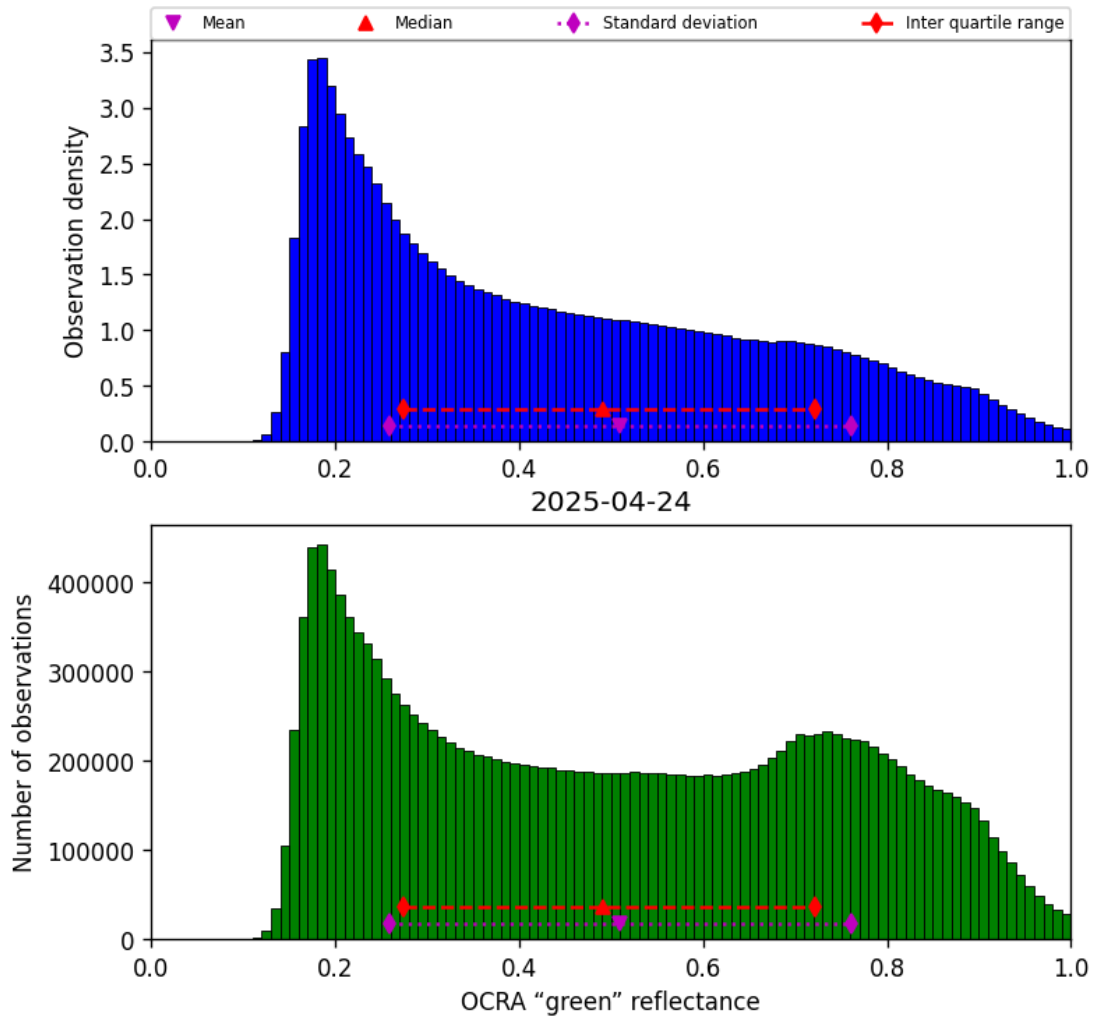


Figure 50: Histogram of “OCRA “green” reflectance” for 2025-04-24 to 2025-04-25

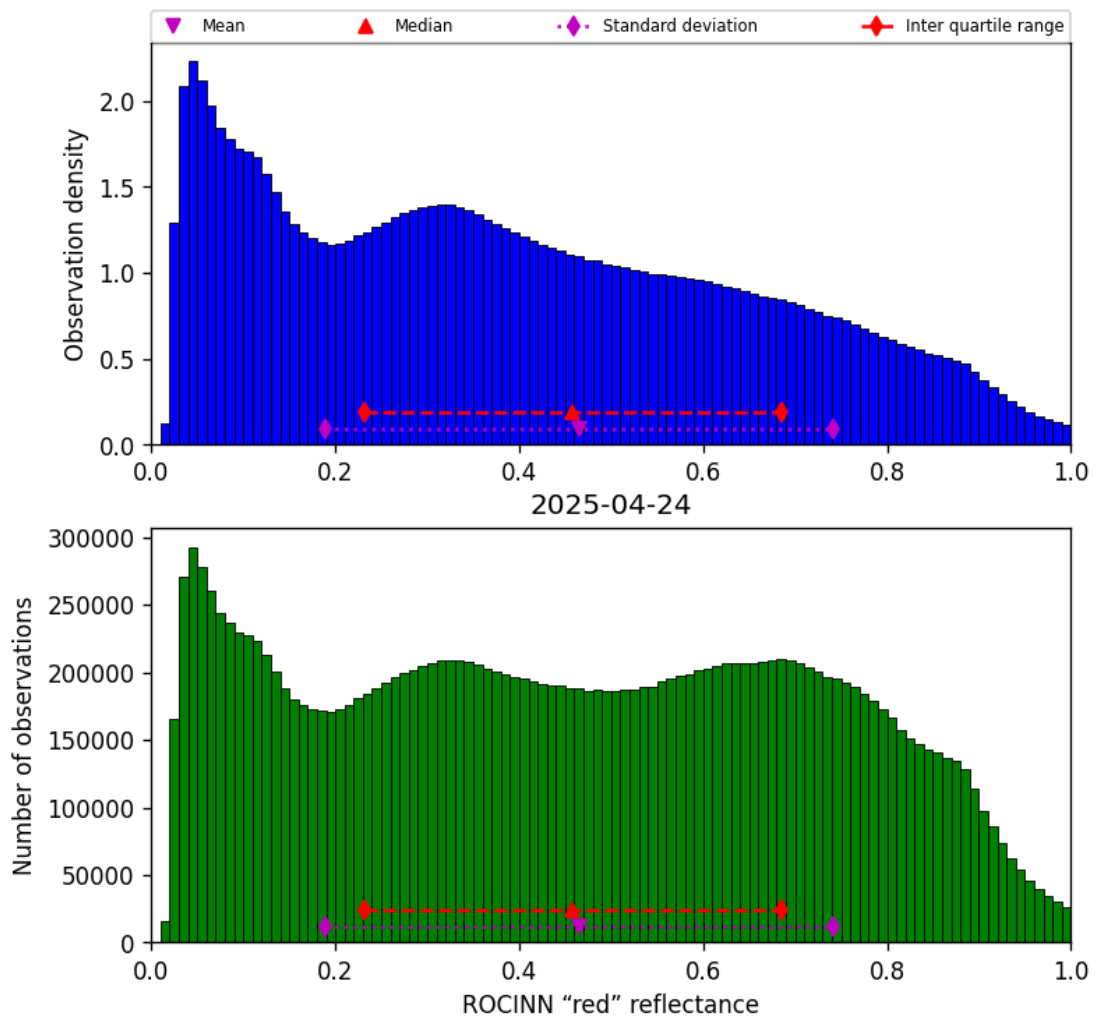


Figure 51: Histogram of “ROCINN “red” reflectance” for 2025-04-24 to 2025-04-25

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.

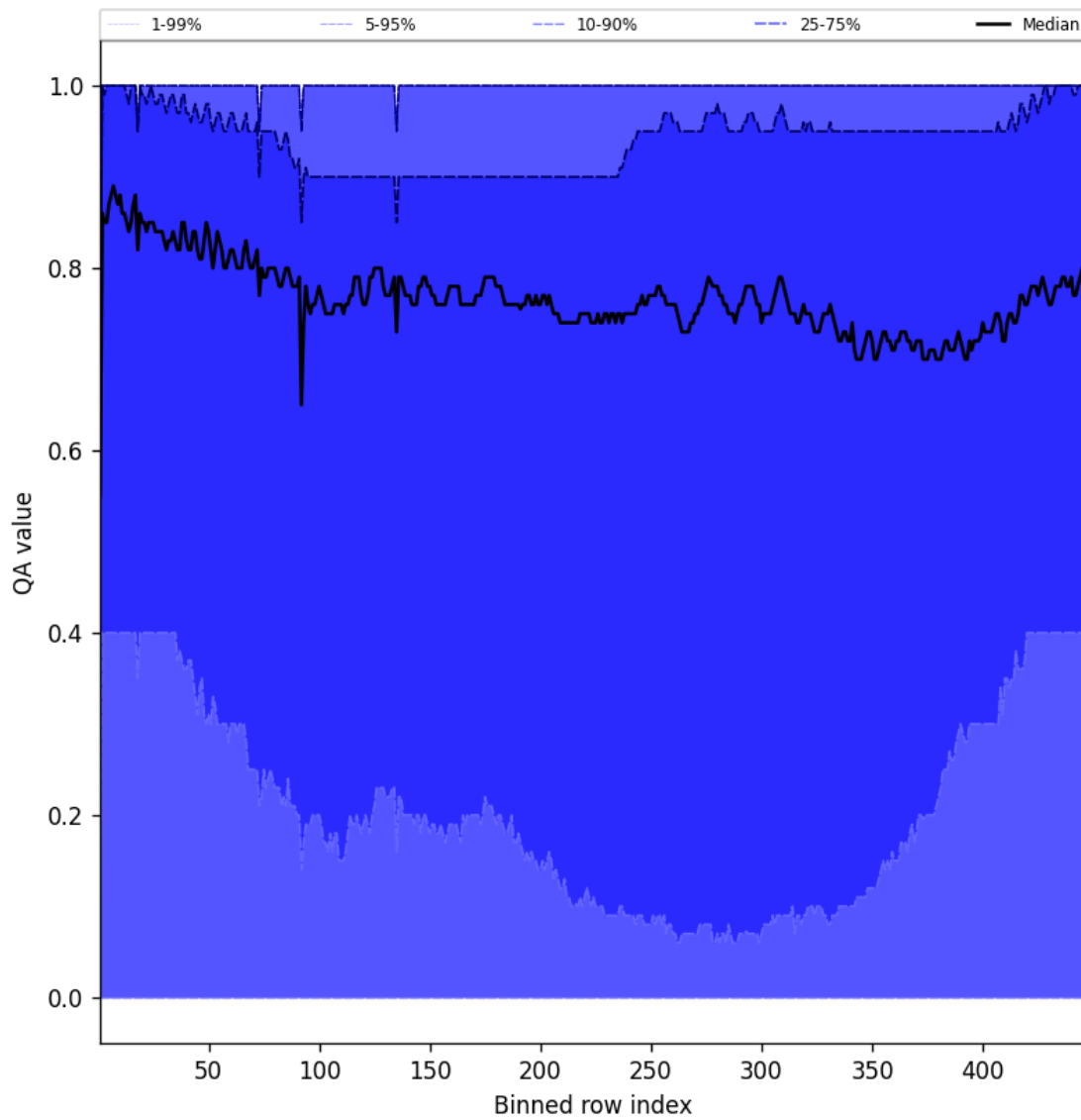


Figure 52: Along track statistics of “QA value” for 2025-04-24 to 2025-04-25

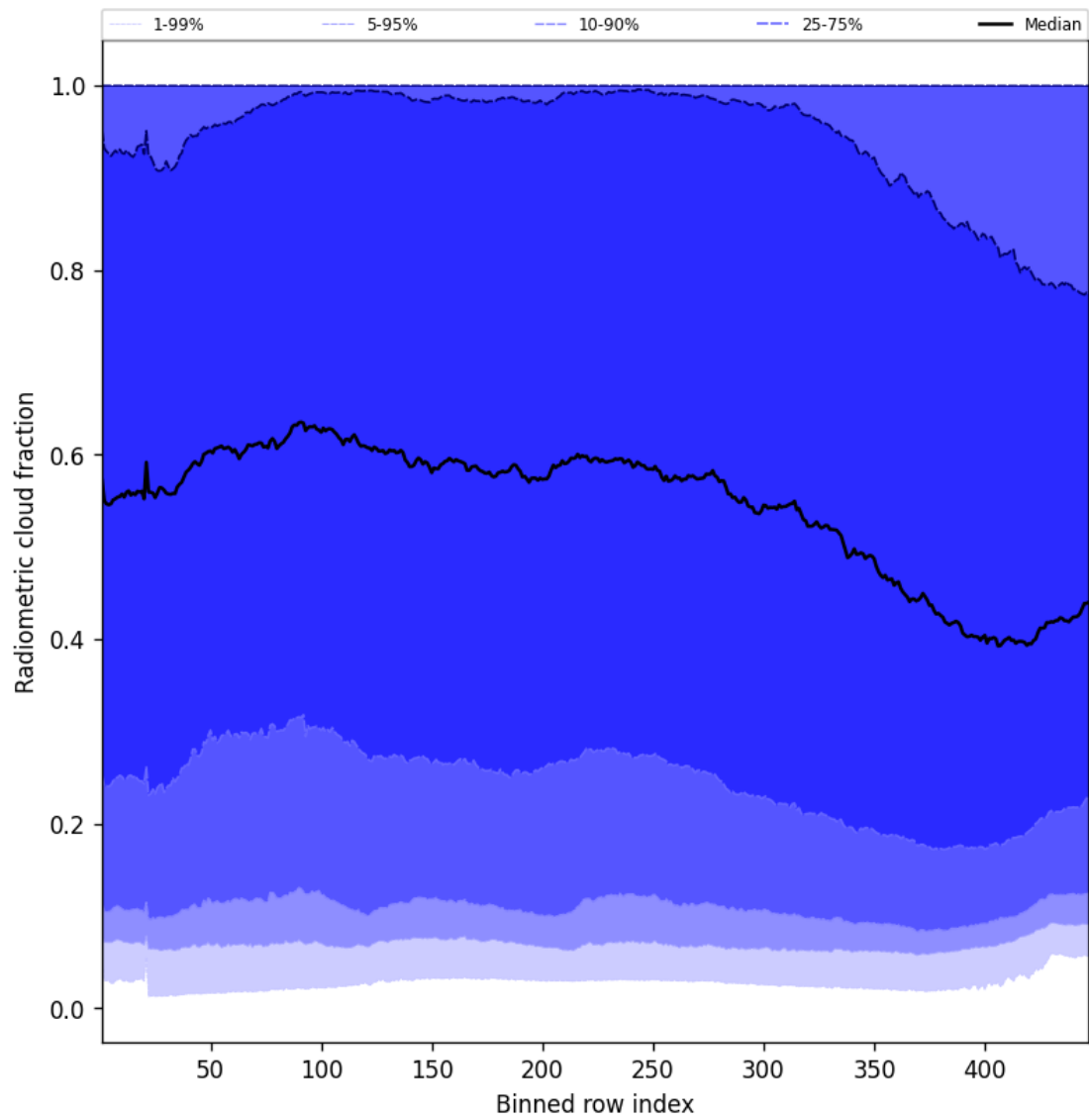


Figure 53: Along track statistics of “Radiometric cloud fraction” for 2025-04-24 to 2025-04-25

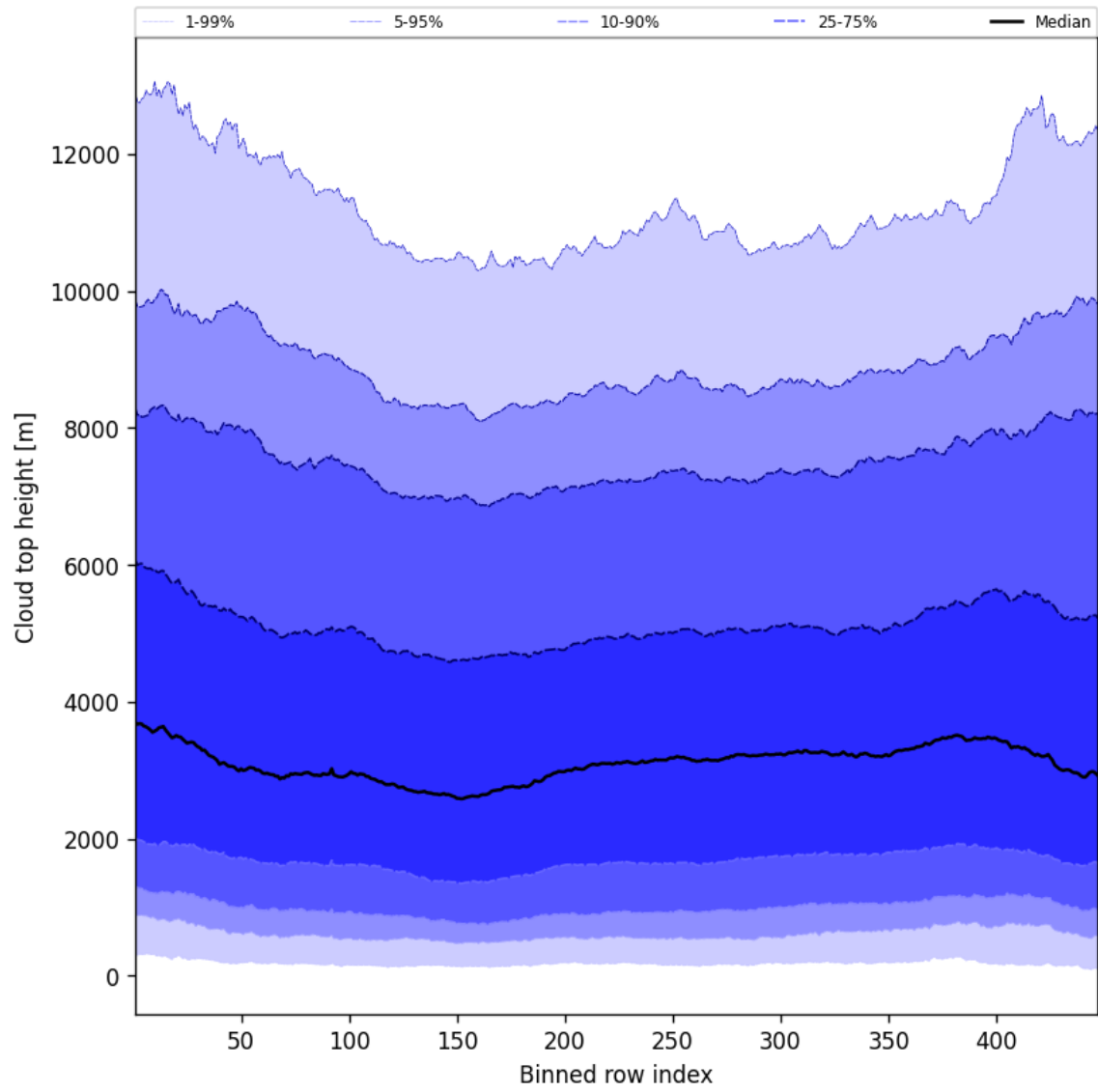


Figure 54: Along track statistics of “Cloud top height” for 2025-04-24 to 2025-04-25

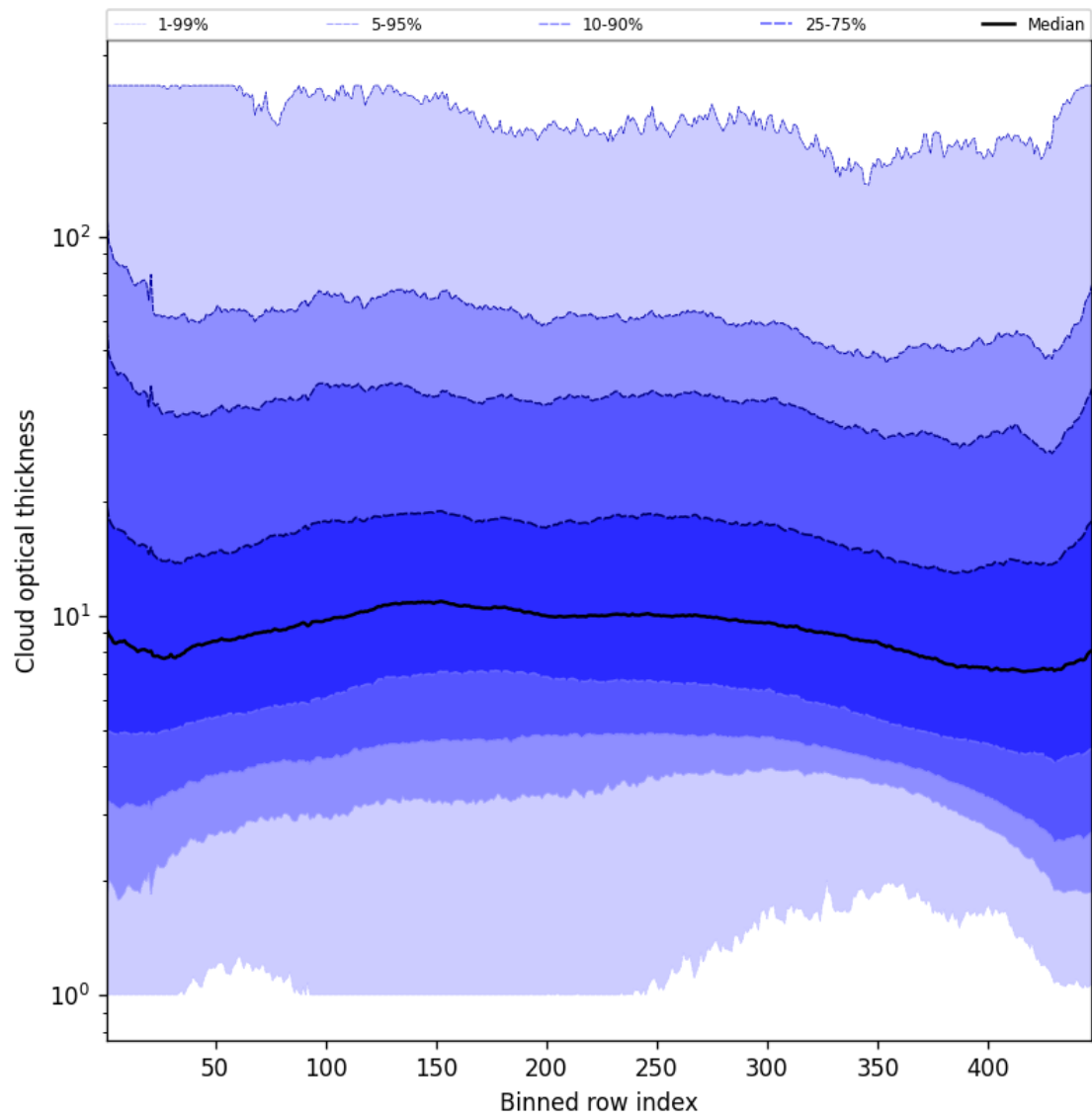


Figure 55: Along track statistics of “Cloud optical thickness” for 2025-04-24 to 2025-04-25

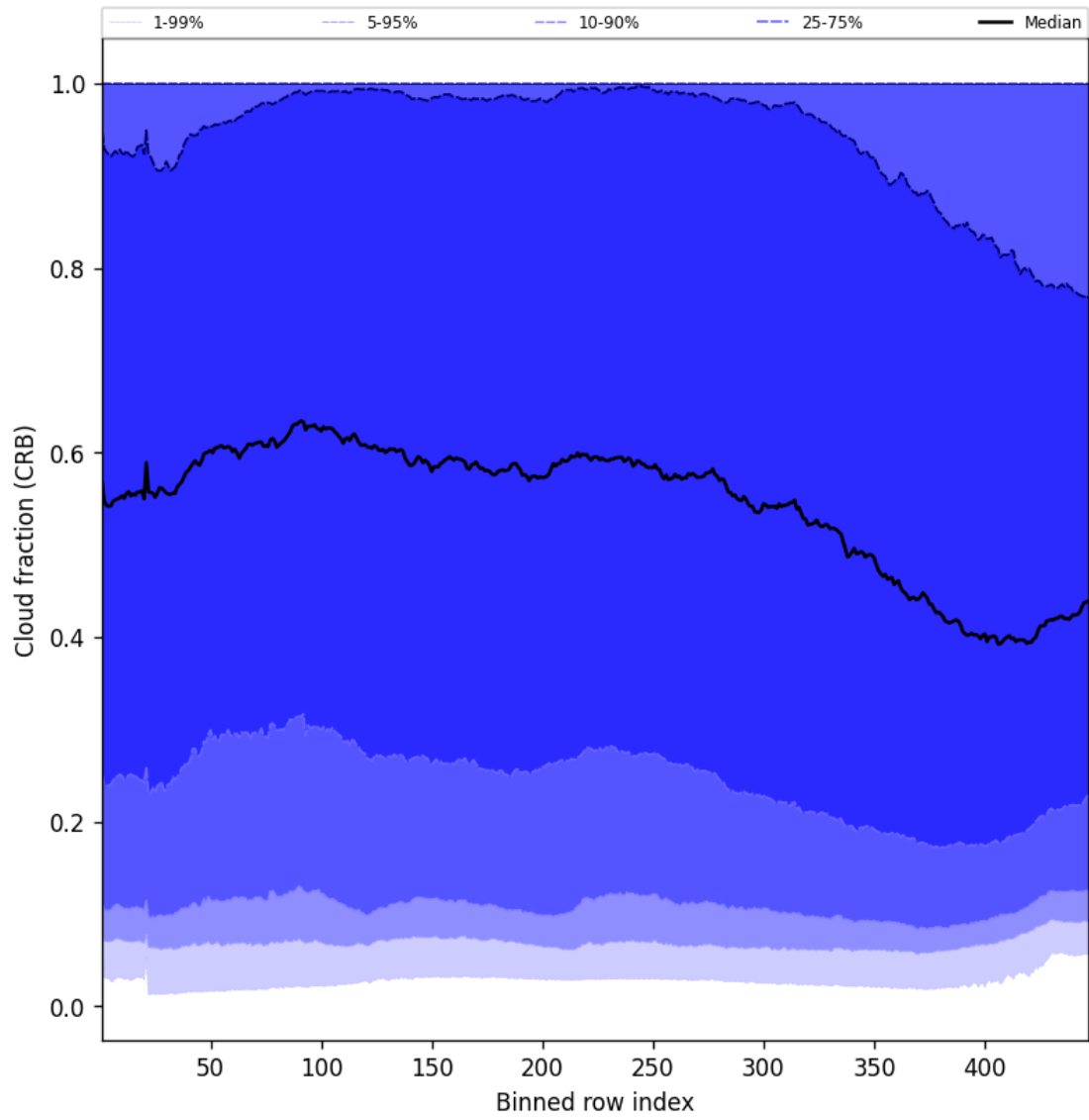


Figure 56: Along track statistics of “Cloud fraction (CRB)” for 2025-04-24 to 2025-04-25

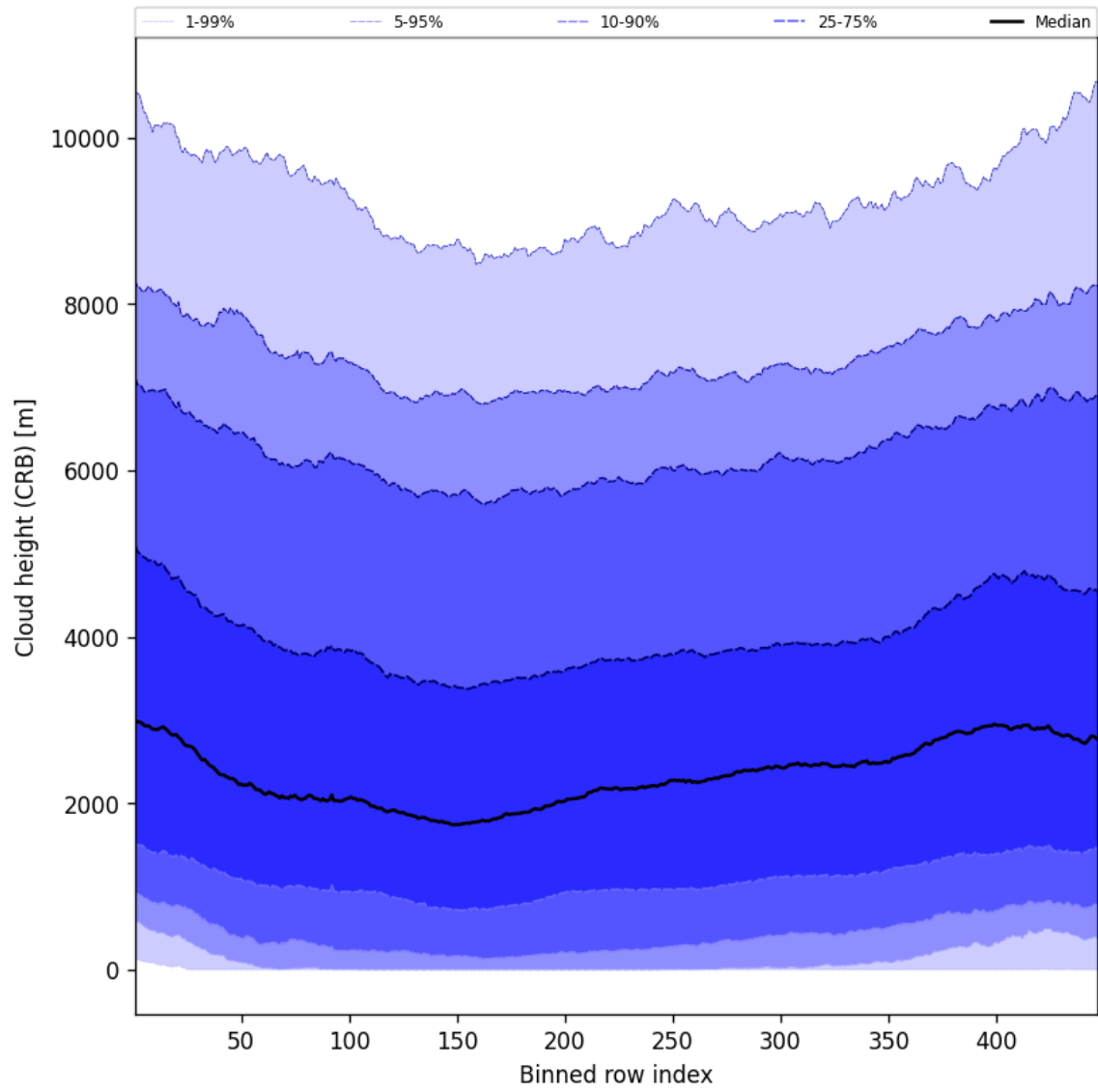


Figure 57: Along track statistics of “Cloud height (CRB)” for 2025-04-24 to 2025-04-25

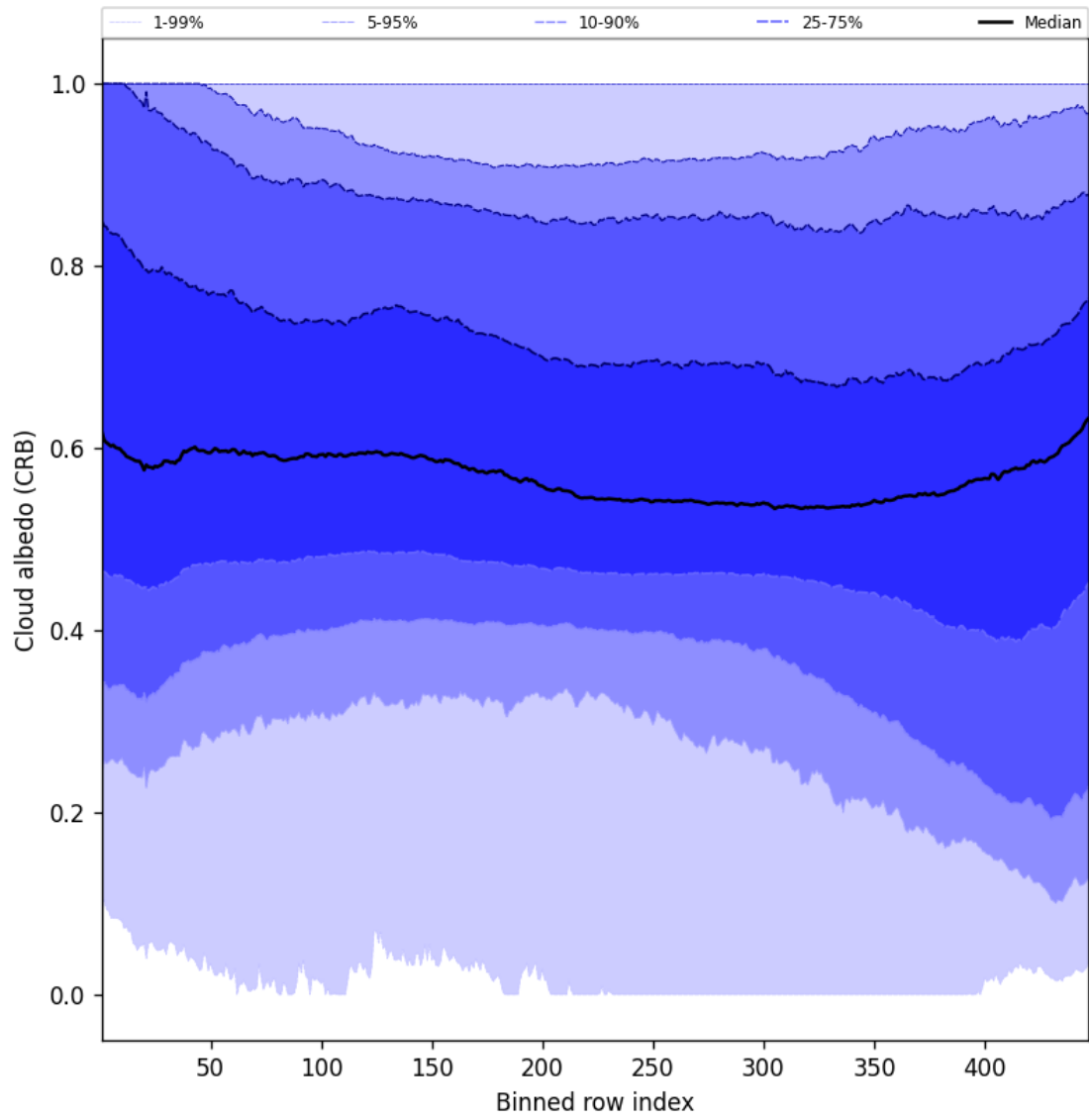


Figure 58: Along track statistics of “Cloud albedo (CRB)” for 2025-04-24 to 2025-04-25

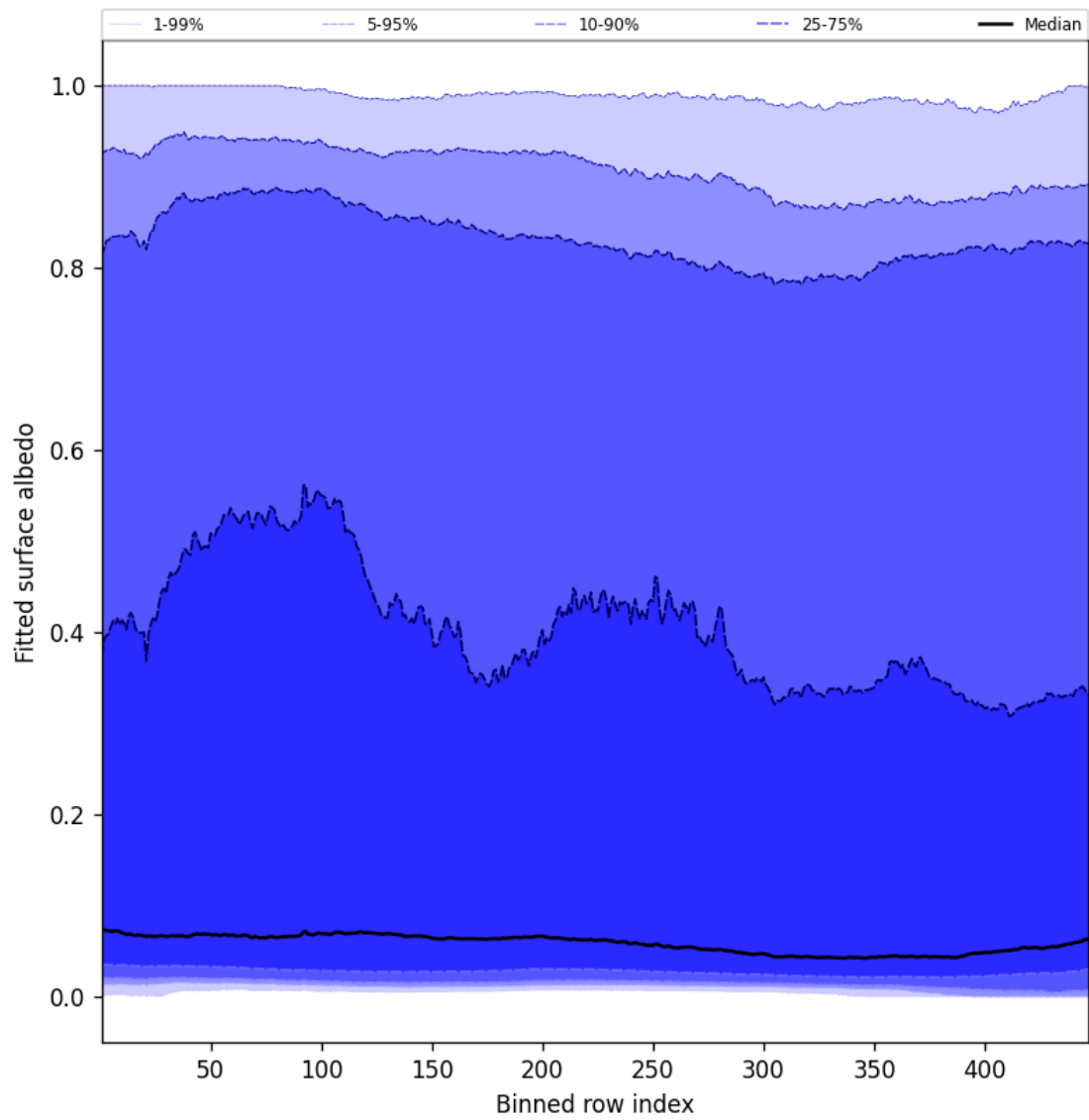


Figure 59: Along track statistics of “Fitted surface albedo” for 2025-04-24 to 2025-04-25

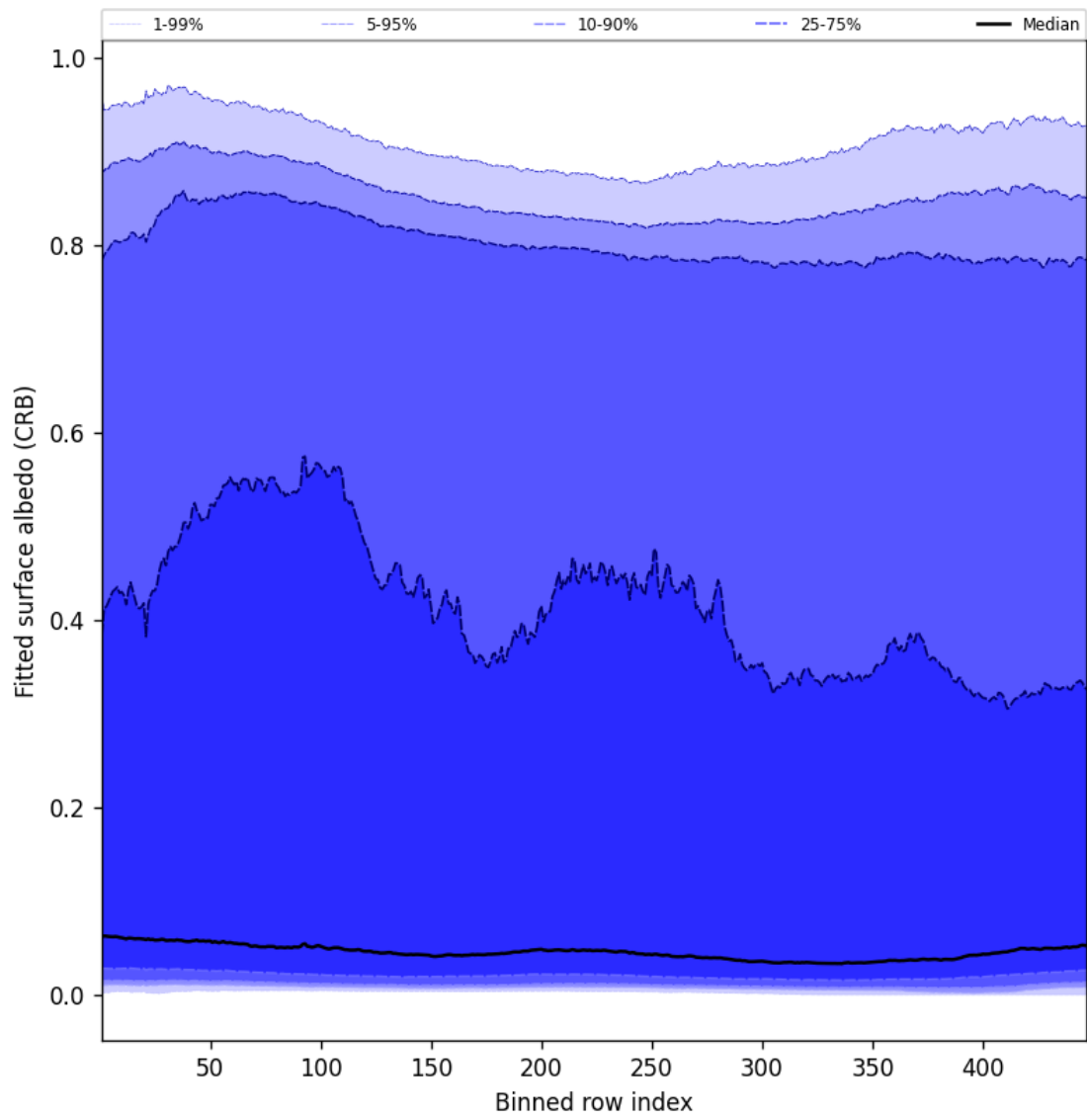


Figure 60: Along track statistics of “Fitted surface albedo (CRB)” for 2025-04-24 to 2025-04-25

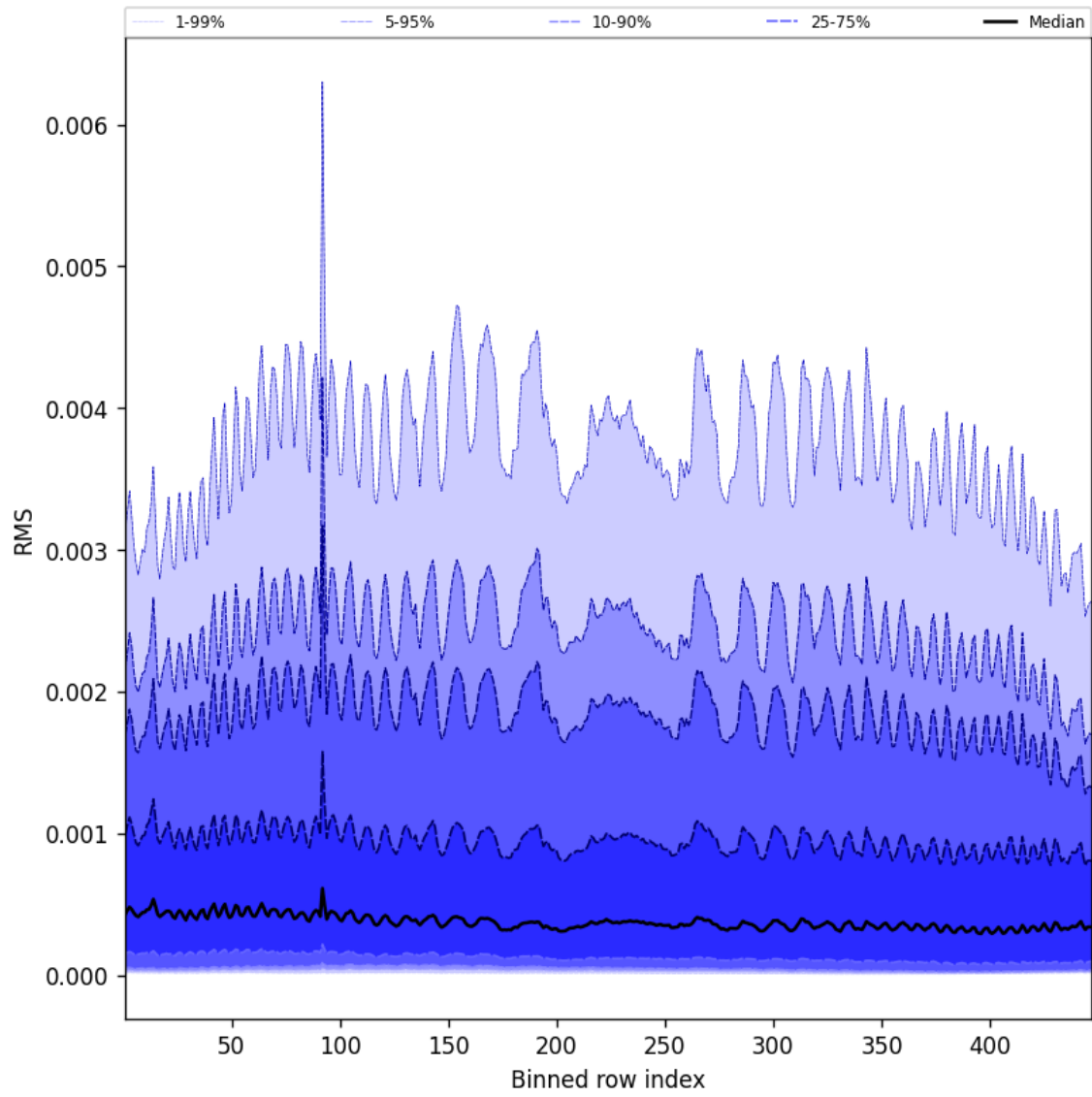


Figure 61: Along track statistics of “RMS” for 2025-04-24 to 2025-04-25

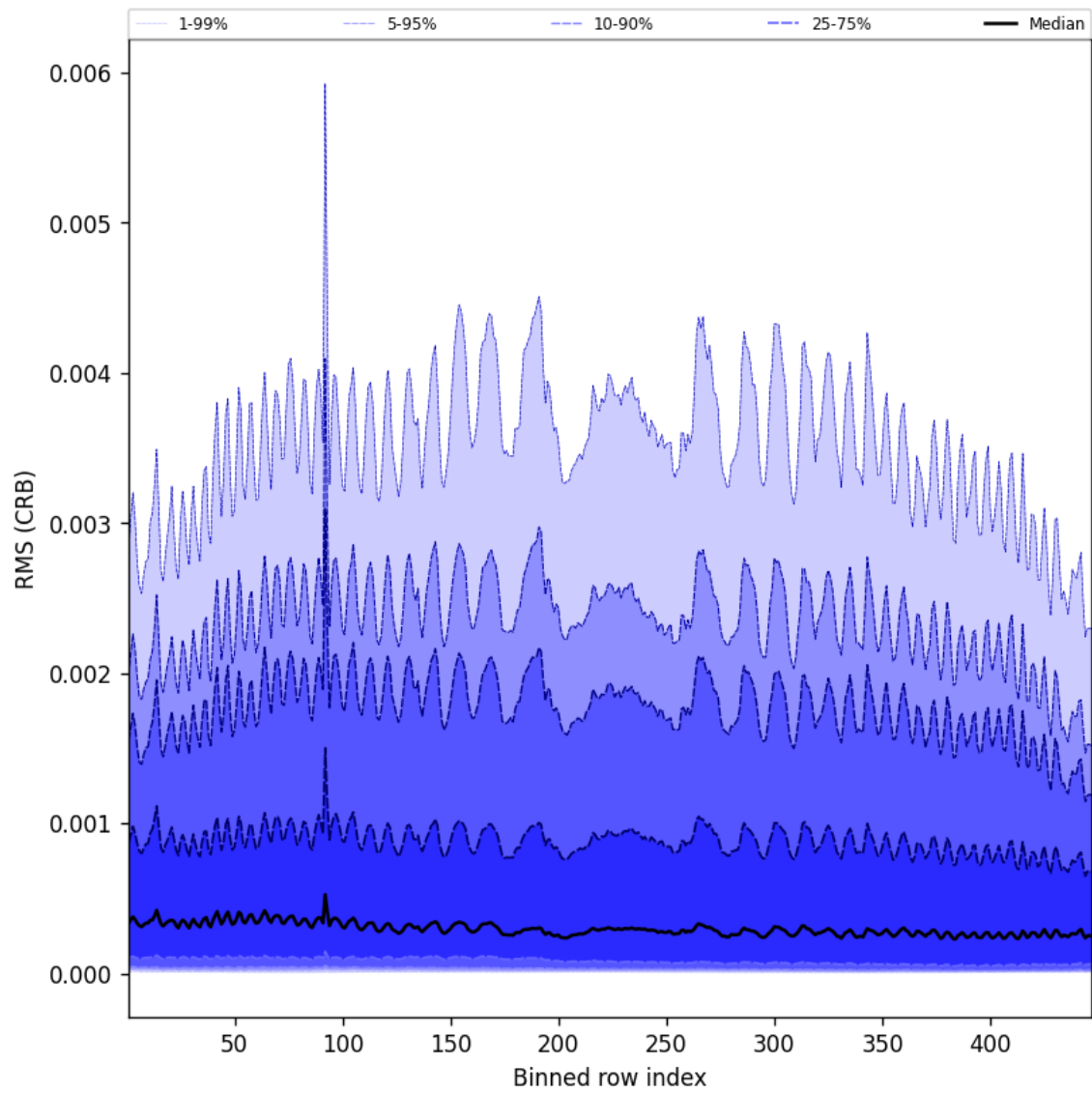


Figure 62: Along track statistics of “RMS (CRB)” for 2025-04-24 to 2025-04-25

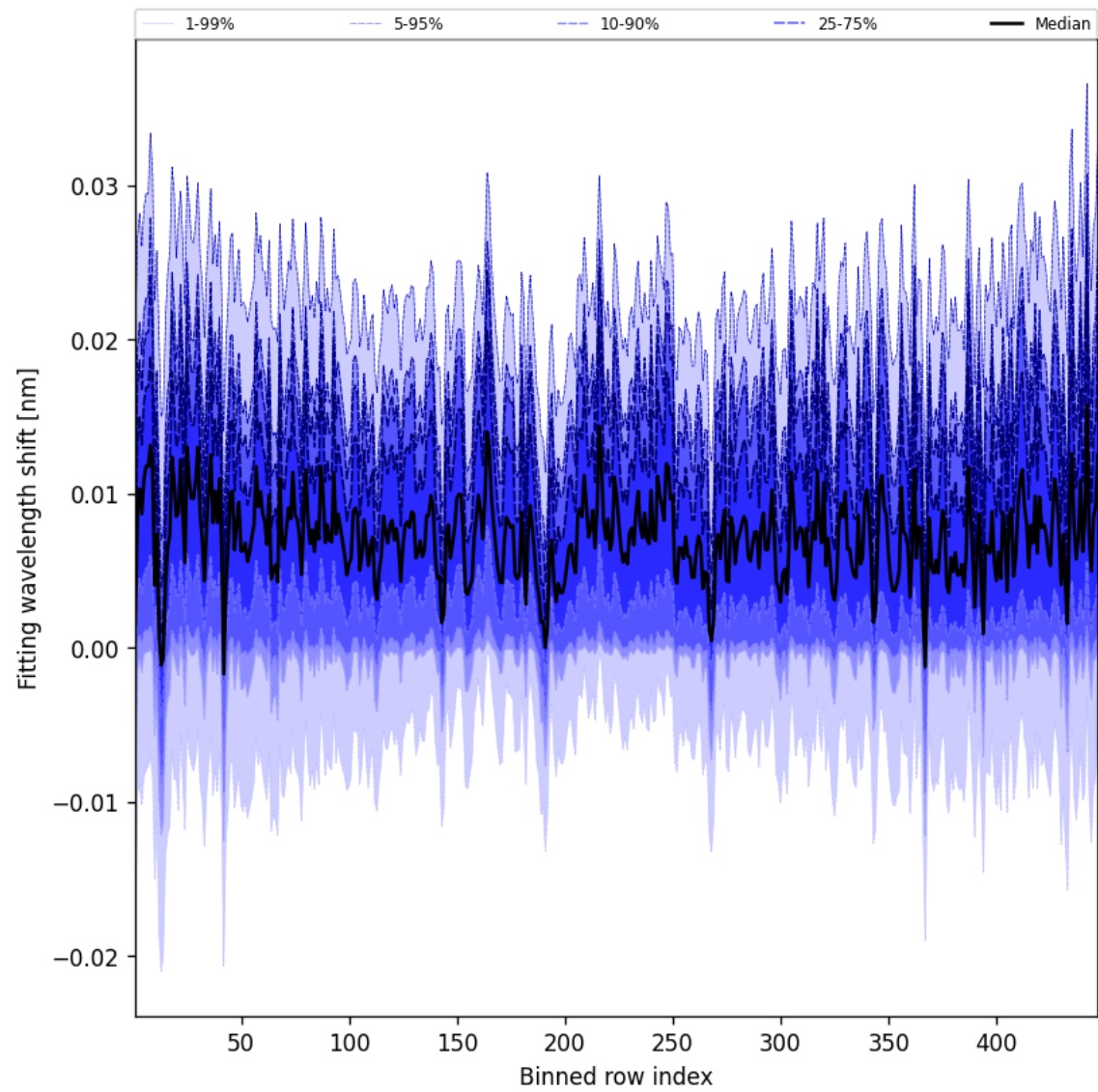


Figure 63: Along track statistics of “Fitting wavelength shift” for 2025-04-24 to 2025-04-25

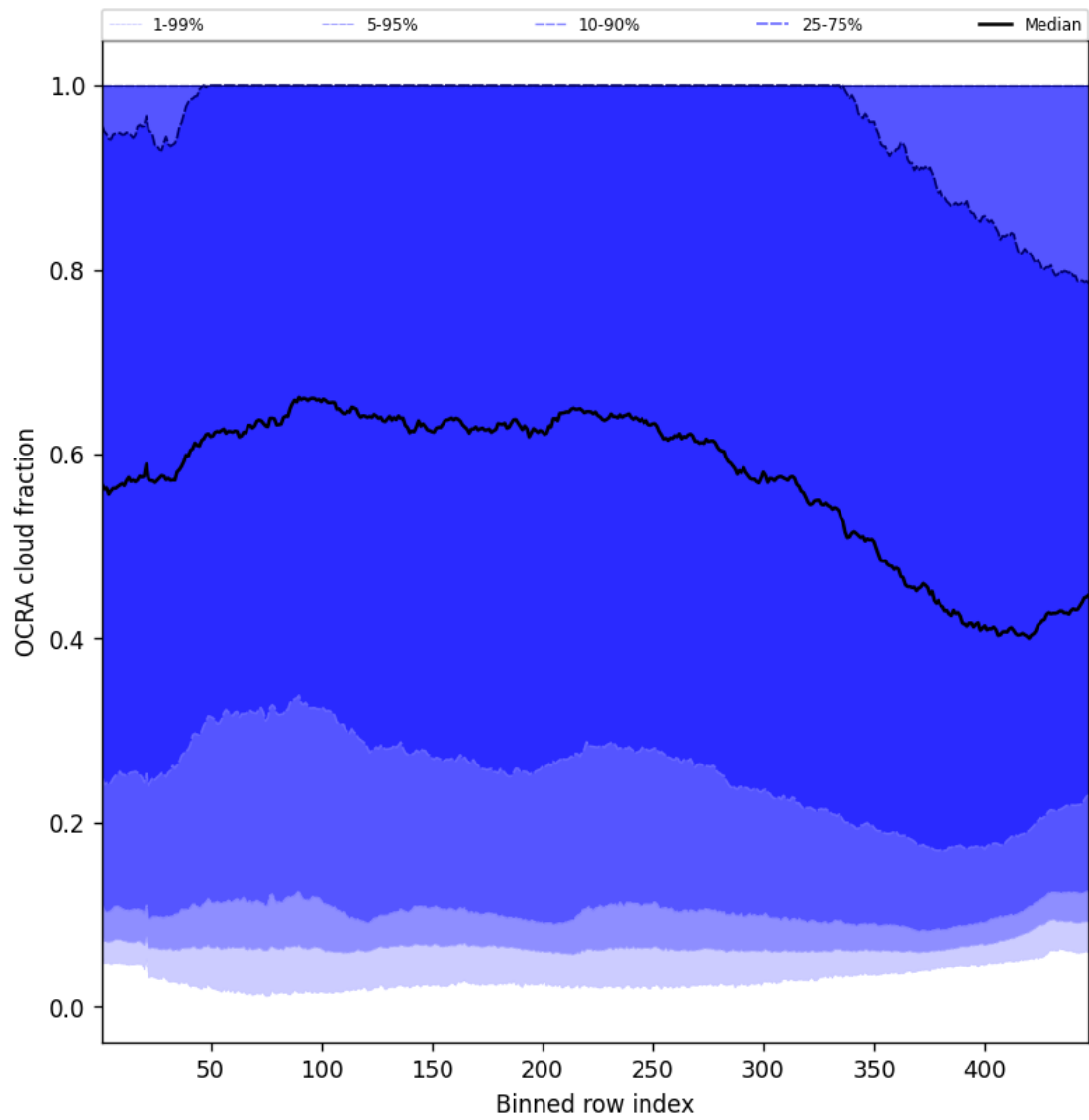


Figure 64: Along track statistics of “OCRA cloud fraction” for 2025-04-24 to 2025-04-25

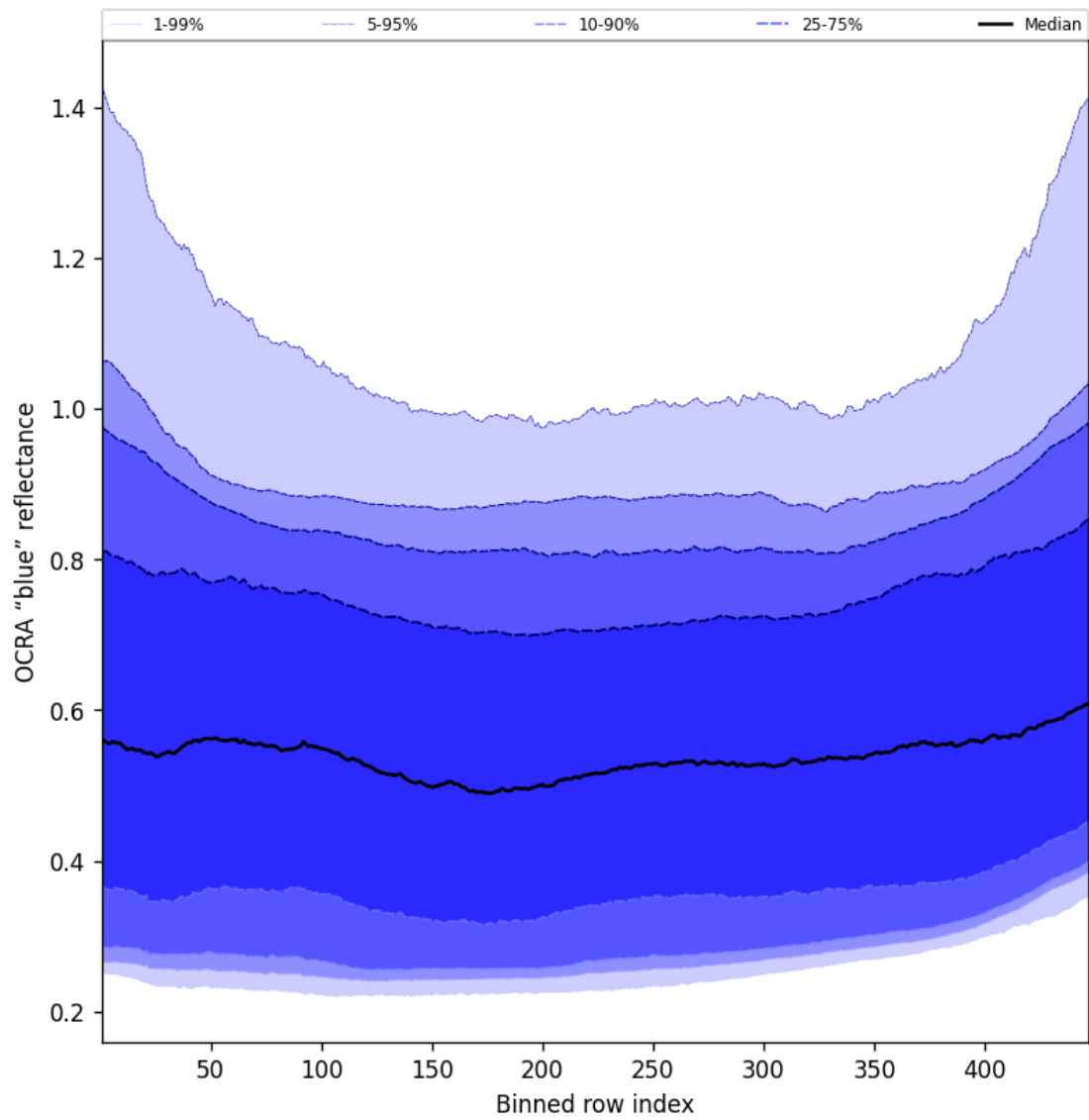


Figure 65: Along track statistics of “OCRA “blue” reflectance” for 2025-04-24 to 2025-04-25

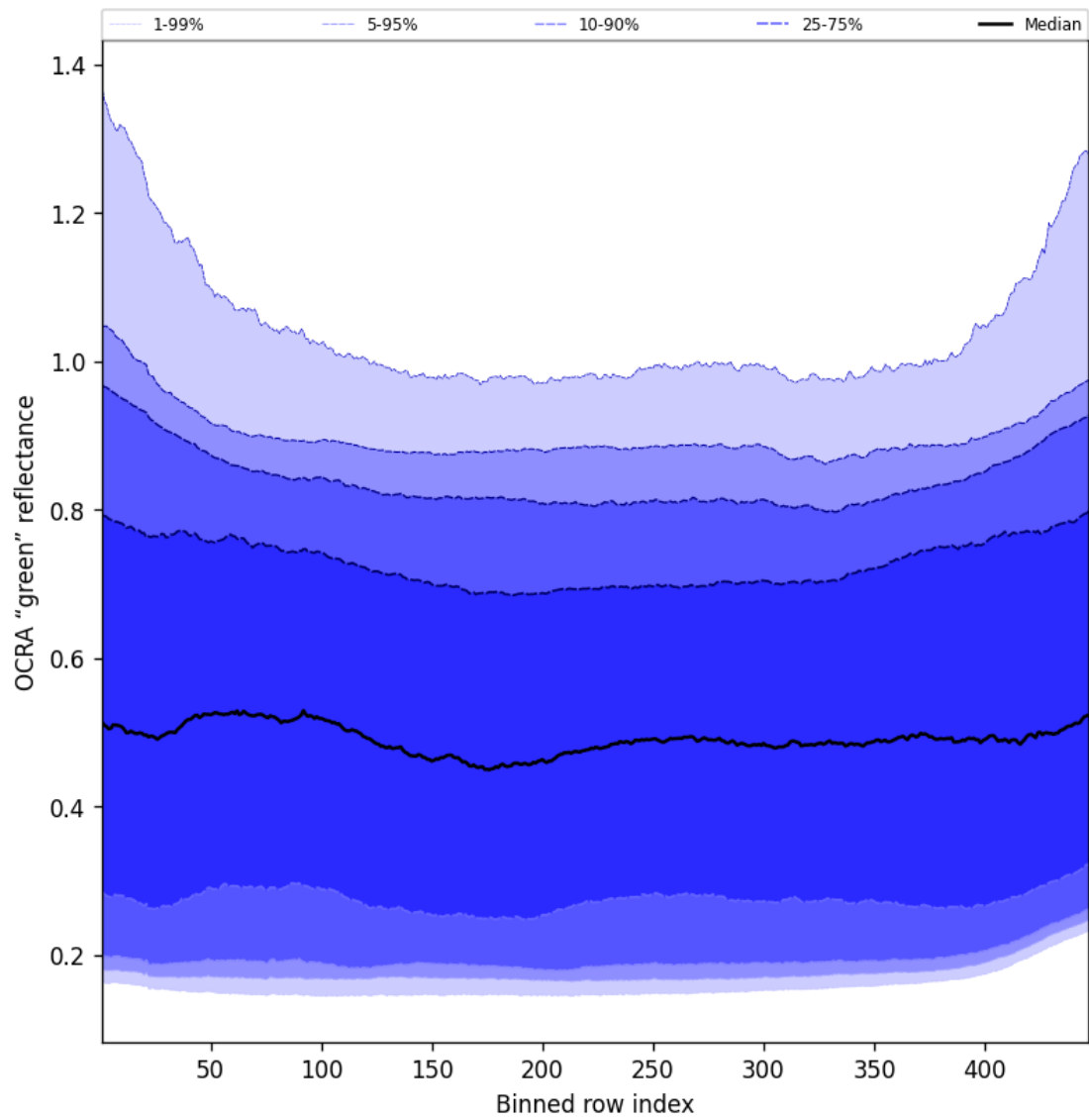


Figure 66: Along track statistics of “OCRA “green” reflectance” for 2025-04-24 to 2025-04-25

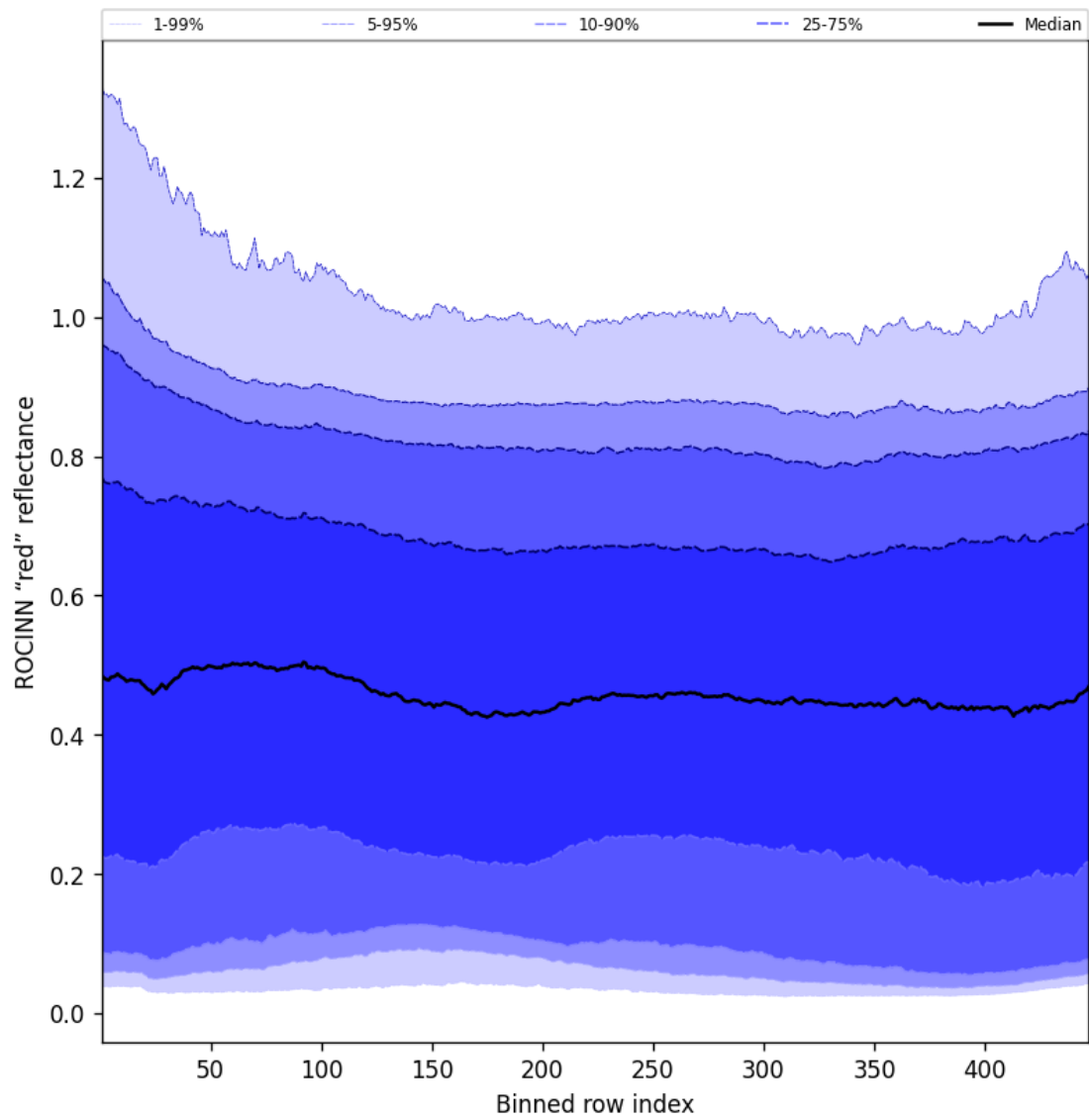


Figure 67: Along track statistics of “ROCINN “red” reflectance” for 2025-04-24 to 2025-04-25

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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