

PyCAMA report generated by tropl2-proc

tropl2-proc

2025-05-14 (04:00)

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]	0.592 ± 0.379	18284094	5.000×10^{-3}	0.670	0.720	0.0	1.000
cloud fraction [1]	0.582 ± 0.348	18284094	0.995	0.745	0.582	6.793×10^{-3}	1.000
cloud top height [m]	$(0.380 \pm 0.263) \times 10^4$	18284094	1.575×10^3	3.532×10^3	3.221×10^3	0.0	2.000×10^4
cloud optical thickness [1]	18.8 ± 33.3	18284094	8.51	10.9	9.21	1.000	250
cloud fraction crb [1]	0.581 ± 0.348	18284094	0.995	0.746	0.581	7.960×10^{-3}	1.000
cloud height crb [m]	$(0.291 \pm 0.229) \times 10^4$	18284094	75.0	3.084×10^3	2.445×10^3	0.0	2.000×10^4
cloud albedo crb [1]	0.584 ± 0.210	18284094	0.995	0.275	0.571	0.0	1.000
surface albedo fitted [1]	0.260 ± 0.316	18284094	2.500×10^{-2}	0.405	6.679×10^{-2}	0.0	1.000
surface albedo fitted crb [1]	0.252 ± 0.312	18284094	1.500×10^{-2}	0.435	5.022×10^{-2}	0.0	1.000
fitted root mean square [1]	$(7.922 \pm 11.859) \times 10^{-4}$	18284094	5.000×10^{-5}	9.682×10^{-4}	3.791×10^{-4}	9.954×10^{-7}	0.326
fitted root mean square crb [1]	$(7.072 \pm 9.299) \times 10^{-4}$	18284094	5.000×10^{-5}	9.306×10^{-4}	3.070×10^{-4}	1.180×10^{-6}	0.115
wavelength shift [nm]	$(7.339 \pm 6.899) \times 10^{-3}$	18284094	-3.000×10^{-4}	1.012×10^{-2}	6.681×10^{-3}	-5.605×10^{-2}	6.918×10^{-2}
cloud fraction apriori [1]	0.595 ± 0.353	18284094	0.995	0.752	0.614	0.0	1.000
reflectance blue ocra [1]	0.558 ± 0.220	18284094	0.265	0.376	0.536	0.135	1.93
reflectance green ocra [1]	0.507 ± 0.248	18284094	0.185	0.443	0.487	7.742×10^{-2}	1.91
reflectance continuum aband [1]	0.460 ± 0.273	18284094	4.500×10^{-2}	0.453	0.450	1.344×10^{-2}	4.46

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	0.240	0.910	1.000	1.000	1.000	1.000
cloud fraction [1]	2.684×10^{-2}	6.957×10^{-2}	0.107	0.157	0.245	0.990	1.000	1.000	1.000	1.000
cloud top height [m]	200	624	980	1.298×10^3	1.726×10^3	5.258×10^3	6.528×10^3	7.676×10^3	9.048×10^3	1.130×10^4
cloud optical thickness [1]	1.000	2.77	3.86	4.70	5.73	16.6	25.0	37.0	63.7	231
cloud fraction crb [1]	2.624×10^{-2}	6.854×10^{-2}	0.107	0.156	0.243	0.989	1.000	1.000	1.000	1.000
cloud height crb [m]	0.0	51.0	375	697	1.099×10^3	4.183×10^3	5.293×10^3	6.323×10^3	7.538×10^3	9.381×10^3
cloud albedo crb [1]	1.357×10^{-2}	0.218	0.331	0.402	0.456	0.731	0.813	0.873	0.938	1.000
surface albedo fitted [1]	0.0	9.867×10^{-3}	1.549×10^{-2}	2.070×10^{-2}	2.837×10^{-2}	0.433	0.737	0.831	0.904	0.986
surface albedo fitted crb [1]	2.553×10^{-4}	7.470×10^{-3}	1.141×10^{-2}	1.532×10^{-2}	2.134×10^{-2}	0.456	0.731	0.807	0.864	0.941
fitted root mean square [1]	1.162×10^{-5}	2.506×10^{-5}	4.049×10^{-5}	6.418×10^{-5}	1.132×10^{-4}	1.081×10^{-3}	1.639×10^{-3}	2.168×10^{-3}	2.824×10^{-3}	4.171×10^{-3}
fitted root mean square crb [1]	6.009×10^{-6}	1.327×10^{-5}	2.322×10^{-5}	3.687×10^{-5}	6.832×10^{-5}	9.989×10^{-4}	1.539×10^{-3}	2.057×10^{-3}	2.699×10^{-3}	3.902×10^{-3}
wavelength shift [nm]	-7.716×10^{-3}	-1.094×10^{-3}	-1.395×10^{-4}	4.790×10^{-4}	1.893×10^{-3}	1.201×10^{-2}	1.442×10^{-2}	1.647×10^{-2}	1.915×10^{-2}	2.483×10^{-2}
cloud fraction apriori [1]	3.010×10^{-2}	6.607×10^{-2}	0.102	0.152	0.248	1.000	1.000	1.000	1.000	1.000
reflectance blue ocra [1]	0.231	0.258	0.282	0.313	0.363	0.739	0.811	0.861	0.910	1.03
reflectance green ocra [1]	0.151	0.174	0.194	0.221	0.275	0.718	0.797	0.853	0.902	1.00
reflectance continuum aband [1]	3.021×10^{-2}	5.515×10^{-2}	9.007×10^{-2}	0.137	0.229	0.682	0.770	0.829	0.889	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]	0.561 ± 0.372	11680551	0.750	0.690	0.0	1.000	0.150	0.900
cloud fraction [1]	0.613 ± 0.351	11680551	0.733	0.647	7.057×10^{-3}	1.000	0.266	0.999
cloud top height [m]	$(0.365 \pm 0.267) \times 10^4$	11680551	3.546×10^3	3.051×10^3	0.0	2.000×10^4	1.554×10^3	5.100×10^3
cloud optical thickness [1]	15.2 ± 27.7	11680551	8.41	8.30	1.000	250	5.22	13.6
cloud fraction crb [1]	0.613 ± 0.351	11680551	0.734	0.647	7.960×10^{-3}	1.000	0.266	1.000
cloud height crb [m]	$(0.267 \pm 0.227) \times 10^4$	11680551	3.124×10^3	2.212×10^3	0.0	2.000×10^4	826	3.951×10^3
cloud albedo crb [1]	0.592 ± 0.229	11680551	0.322	0.586	0.0	1.000	0.448	0.770
surface albedo fitted [1]	0.367 ± 0.345	11680551	0.696	0.244	0.0	1.000	3.672×10^{-2}	0.733
surface albedo fitted crb [1]	0.361 ± 0.337	11680551	0.698	0.244	0.0	1.000	3.022×10^{-2}	0.728
fitted root mean square [1]	$(1.038 \pm 1.375) \times 10^{-3}$	11680551	1.341×10^{-3}	6.361×10^{-4}	2.152×10^{-6}	0.326	1.842×10^{-4}	1.525×10^{-3}
fitted root mean square crb [1]	$(9.255 \pm 10.431) \times 10^{-4}$	11680551	1.291×10^{-3}	5.437×10^{-4}	1.278×10^{-6}	0.115	1.243×10^{-4}	1.416×10^{-3}
wavelength shift [nm]	$(8.715 \pm 6.937) \times 10^{-3}$	11680551	9.967×10^{-3}	8.606×10^{-3}	-5.605×10^{-2}	6.918×10^{-2}	3.494×10^{-3}	1.346×10^{-2}
cloud fraction apriori [1]	0.634 ± 0.354	11680551	0.717	0.702	0.0	1.000	0.283	1.000
reflectance blue oca [1]	0.594 ± 0.232	11680551	0.418	0.612	0.135	1.93	0.372	0.790
reflectance green oca [1]	0.553 ± 0.259	11680551	0.481	0.582	7.742×10^{-2}	1.80	0.296	0.776
reflectance continuum aband [1]	0.518 ± 0.272	11680551	0.452	0.546	1.404×10^{-2}	3.33	0.292	0.744

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]	0.645 ± 0.384	6603543	0.700	0.880	0.0	1.000	0.300	1.000
cloud fraction [1]	0.527 ± 0.336	6603543	0.653	0.493	6.793×10^{-3}	1.000	0.212	0.866
cloud top height [m]	$(0.407 \pm 0.254) \times 10^4$	6603543	3.579×10^3	3.507×10^3	0.0	2.000×10^4	2.000×10^3	5.579×10^3
cloud optical thickness [1]	25.2 ± 40.6	6603543	15.8	11.5	1.000	250	7.07	22.8
cloud fraction crb [1]	0.524 ± 0.336	6603543	0.652	0.489	8.173×10^{-3}	1.000	0.211	0.862
cloud height crb [m]	$(0.334 \pm 0.226) \times 10^4$	6603543	3.140×10^3	2.838×10^3	0.0	2.000×10^4	1.486×10^3	4.626×10^3
cloud albedo crb [1]	0.570 ± 0.171	6603543	0.201	0.555	0.0	1.000	0.469	0.670
surface albedo fitted [1]	$(7.031 \pm 10.015) \times 10^{-2}$	6603543	4.298×10^{-2}	3.742×10^{-2}	0.0	1.000	2.230×10^{-2}	6.527×10^{-2}
surface albedo fitted crb [1]	$(6.000 \pm 9.973) \times 10^{-2}$	6603543	3.116×10^{-2}	2.657×10^{-2}	0.0	1.000	1.531×10^{-2}	4.646×10^{-2}
fitted root mean square [1]	$(3.575 \pm 5.047) \times 10^{-4}$	6603543	3.658×10^{-4}	1.778×10^{-4}	9.954×10^{-7}	0.157	6.517×10^{-5}	4.309×10^{-4}
fitted root mean square crb [1]	$(3.211 \pm 4.859) \times 10^{-4}$	6603543	3.606×10^{-4}	1.143×10^{-4}	1.180×10^{-6}	3.151×10^{-2}	3.801×10^{-5}	3.986×10^{-4}
wavelength shift [nm]	$(4.904 \pm 6.114) \times 10^{-3}$	6603543	7.687×10^{-3}	3.651×10^{-3}	-4.081×10^{-2}	6.171×10^{-2}	6.266×10^{-4}	8.313×10^{-3}
cloud fraction apriori [1]	0.526 ± 0.342	6603543	0.677	0.490	0.0	1.000	0.202	0.879
reflectance blue oca [1]	0.496 ± 0.182	6603543	0.252	0.465	0.141	1.91	0.354	0.605
reflectance green oca [1]	0.427 ± 0.206	6603543	0.306	0.392	8.856×10^{-2}	1.91	0.256	0.561
reflectance continuum aband [1]	0.359 ± 0.243	6603543	0.364	0.329	1.344×10^{-2}	4.46	0.154	0.519

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]	0.609 ± 0.376	12457435	0.640	0.770	0.0	1.000	0.300	0.940
cloud fraction [1]	0.546 ± 0.346	12457435	0.727	0.513	7.963×10^{-3}	1.000	0.215	0.942
cloud top height [m]	$(0.380 \pm 0.268) \times 10^4$	12457435	3.612×10^3	3.160×10^3	0.0	2.000×10^4	1.681×10^3	5.293×10^3
cloud optical thickness [1]	20.9 ± 35.7	12457435	12.3	10.1	1.000	250	6.38	18.7
cloud fraction crb [1]	0.544 ± 0.346	12457435	0.726	0.511	8.311×10^{-3}	1.000	0.214	0.941
cloud height crb [m]	$(0.298 \pm 0.237) \times 10^4$	12457435	3.173×10^3	2.474×10^3	0.0	2.000×10^4	1.104×10^3	4.277×10^3
cloud albedo crb [1]	0.569 ± 0.199	12457435	0.250	0.552	0.0	1.000	0.450	0.700
surface albedo fitted [1]	0.168 ± 0.284	12457435	5.149×10^{-2}	3.747×10^{-2}	0.0	1.000	2.179×10^{-2}	7.328×10^{-2}
surface albedo fitted crb [1]	0.157 ± 0.277	12457435	3.901×10^{-2}	2.838×10^{-2}	0.0	1.000	1.615×10^{-2}	5.516×10^{-2}
fitted root mean square [1]	$(5.831 \pm 10.282) \times 10^{-4}$	12457435	6.300×10^{-4}	2.336×10^{-4}	9.954×10^{-7}	0.126	8.128×10^{-5}	7.112×10^{-4}
fitted root mean square crb [1]	$(5.181 \pm 7.895) \times 10^{-4}$	12457435	5.796×10^{-4}	1.768×10^{-4}	1.180×10^{-6}	3.769×10^{-2}	5.272×10^{-5}	6.324×10^{-4}
wavelength shift [nm]	$(6.554 \pm 6.727) \times 10^{-3}$	12457435	9.429×10^{-3}	5.648×10^{-3}	-5.605×10^{-2}	6.472×10^{-2}	1.476×10^{-3}	1.091×10^{-2}
cloud fraction apriori [1]	0.554 ± 0.351	12457435	0.766	0.531	0.0	1.000	0.215	0.981
reflectance blue oca [1]	0.539 ± 0.208	12457435	0.348	0.511	0.145	1.89	0.358	0.705
reflectance green oca [1]	0.481 ± 0.237	12457435	0.418	0.453	9.137×10^{-2}	1.91	0.261	0.679
reflectance continuum aband [1]	0.408 ± 0.272	12457435	0.480	0.389	1.344×10^{-2}	4.46	0.152	0.631

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]	0.617 ± 0.367	3611700	0.590	0.740	0.0	1.000	0.330	0.920
cloud fraction [1]	0.632 ± 0.346	3611700	0.700	0.696	7.057×10^{-3}	1.000	0.300	0.999
cloud top height [m]	$(0.407 \pm 0.254) \times 10^4$	3611700	3.334×10^3	3.601×10^3	0.0	2.000×10^4	2.133×10^3	5.467×10^3
cloud optical thickness [1]	13.4 ± 22.5	3611700	7.77	7.74	1.000	250	5.03	12.8
cloud fraction crb [1]	0.632 ± 0.347	3611700	0.701	0.696	8.045×10^{-3}	1.000	0.299	1.000
cloud height crb [m]	$(0.300 \pm 0.210) \times 10^4$	3611700	2.901×10^3	2.567×10^3	0.0	2.000×10^4	1.363×10^3	4.264×10^3
cloud albedo crb [1]	0.611 ± 0.218	3611700	0.293	0.607	0.0	1.000	0.480	0.774
surface albedo fitted [1]	0.421 ± 0.268	3611700	0.361	0.302	0.0	1.000	0.226	0.587
surface albedo fitted crb [1]	0.419 ± 0.261	3611700	0.393	0.303	3.343×10^{-3}	1.000	0.222	0.615
fitted root mean square [1]	$(1.247 \pm 1.304) \times 10^{-3}$	3611700	1.340×10^{-3}	9.116×10^{-4}	4.004×10^{-6}	0.326	4.530×10^{-4}	1.793×10^{-3}
fitted root mean square crb [1]	$(1.141 \pm 1.023) \times 10^{-3}$	3611700	1.286×10^{-3}	8.749×10^{-4}	1.437×10^{-6}	0.115	4.021×10^{-4}	1.688×10^{-3}
wavelength shift [nm]	$(9.030 \pm 6.768) \times 10^{-3}$	3611700	9.611×10^{-3}	8.941×10^{-3}	-3.555×10^{-2}	6.918×10^{-2}	4.072×10^{-3}	1.368×10^{-2}
cloud fraction apriori [1]	0.651 ± 0.352	3611700	0.689	0.745	0.0	1.000	0.311	1.000
reflectance blue ocra [1]	0.563 ± 0.240	3611700	0.423	0.538	0.135	1.93	0.345	0.768
reflectance green ocra [1]	0.525 ± 0.262	3611700	0.478	0.502	8.856×10^{-2}	1.86	0.276	0.754
reflectance continuum aband [1]	0.549 ± 0.233	3611700	0.394	0.517	1.690×10^{-2}	3.80	0.347	0.742

3 Granule outlines

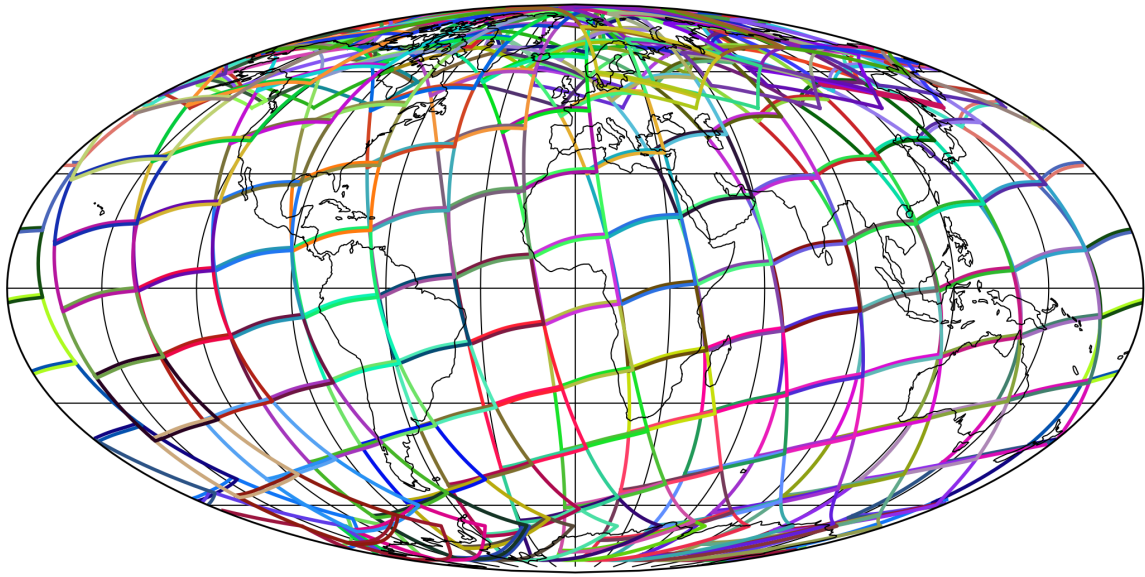


Figure 1: Outline of the granules.

4 Input data monitoring

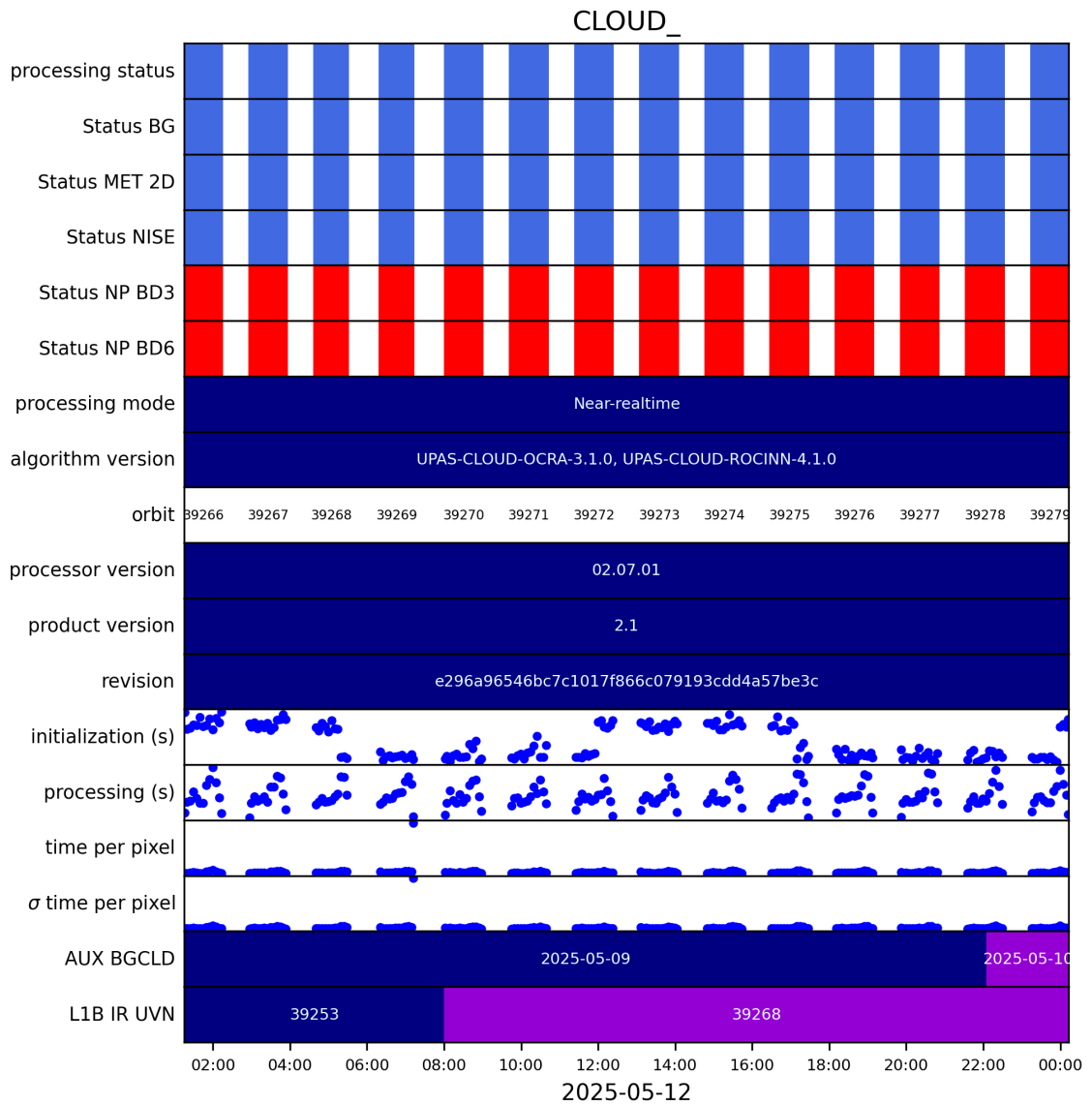


Figure 2: Input data per granule

5 Warnings and errors

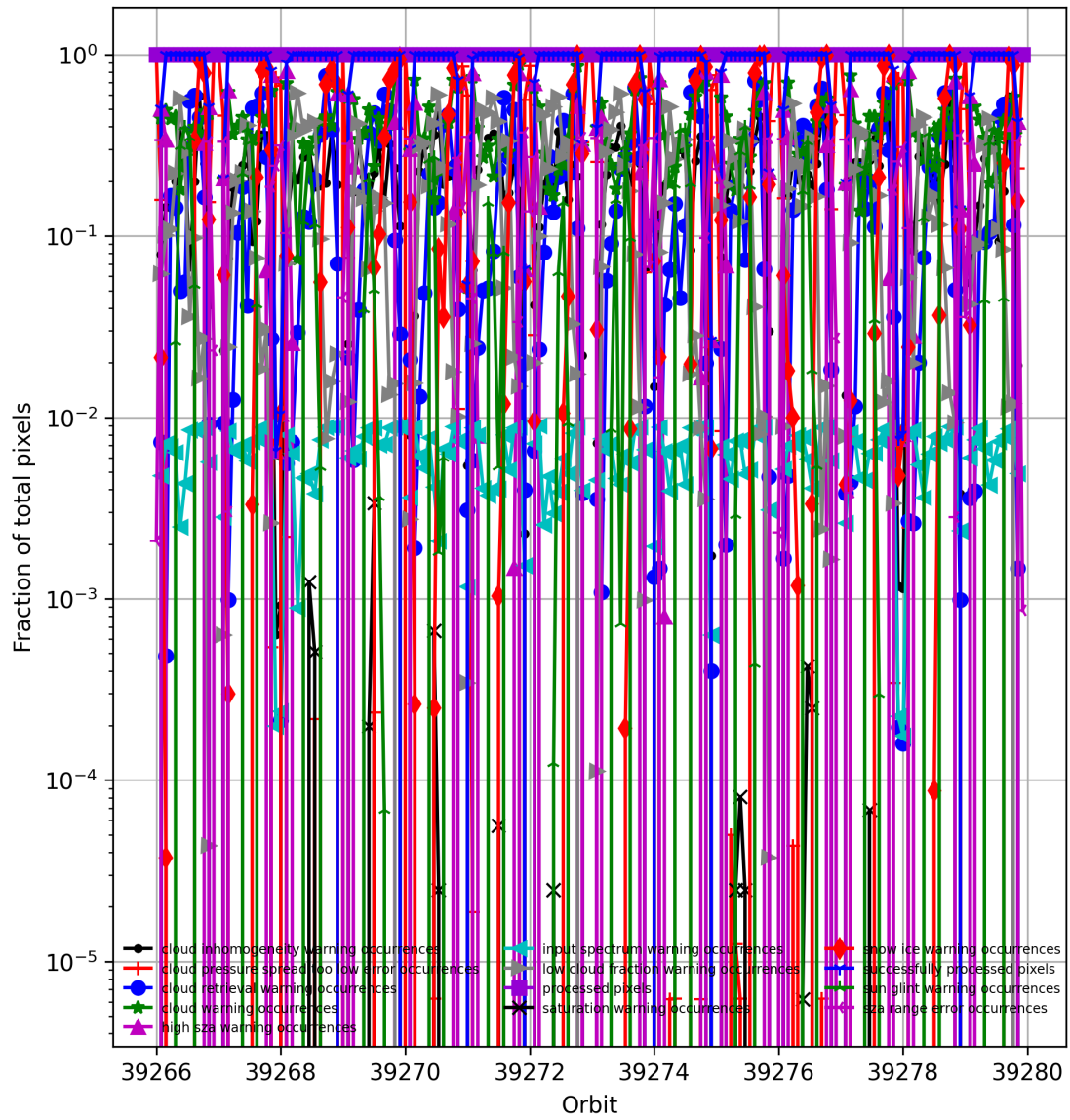


Figure 3: Fraction of pixels with specific warnings and errors during processing

6 World maps

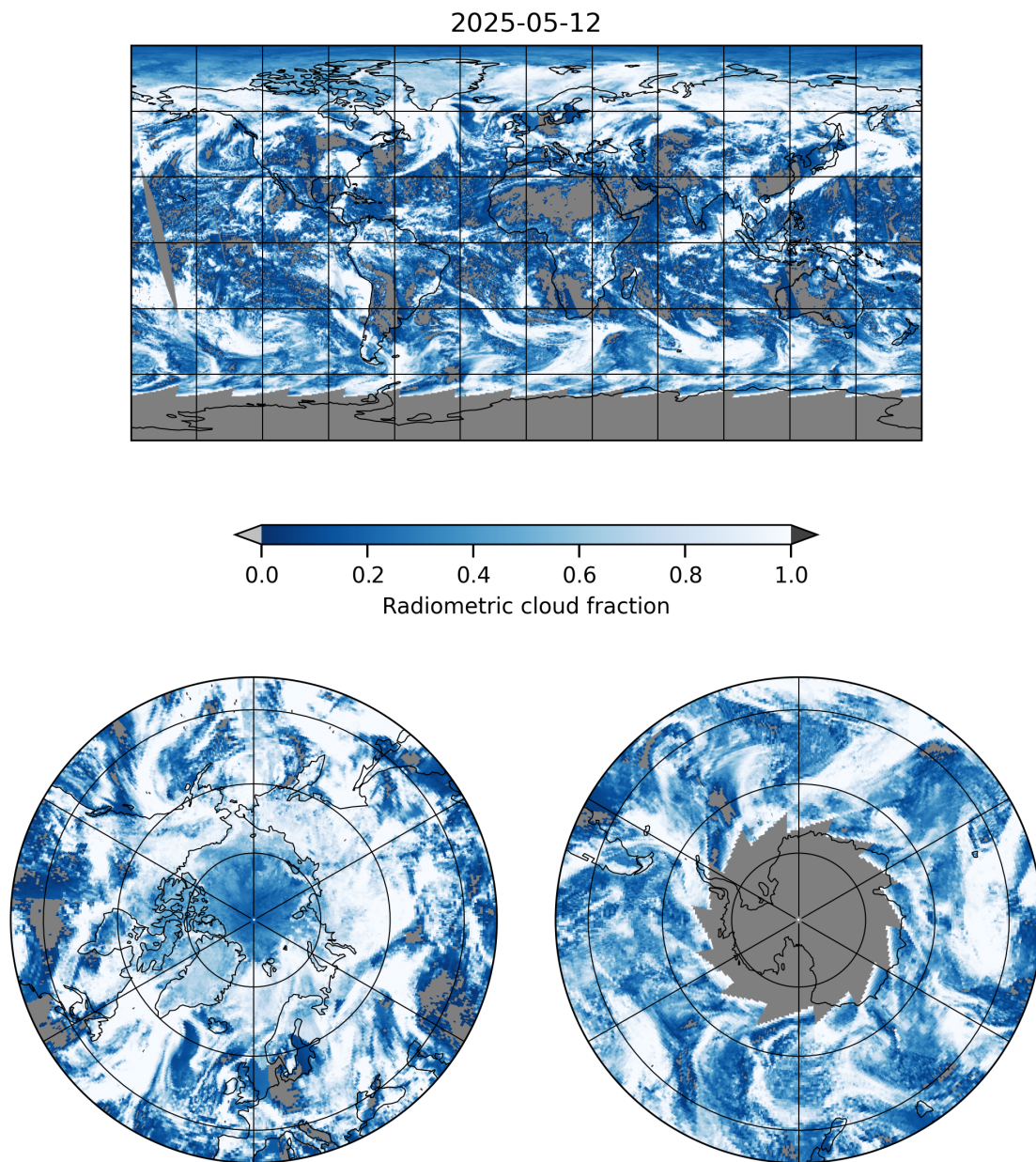


Figure 4: Map of “Radiometric cloud fraction” for 2025-05-12 to 2025-05-13

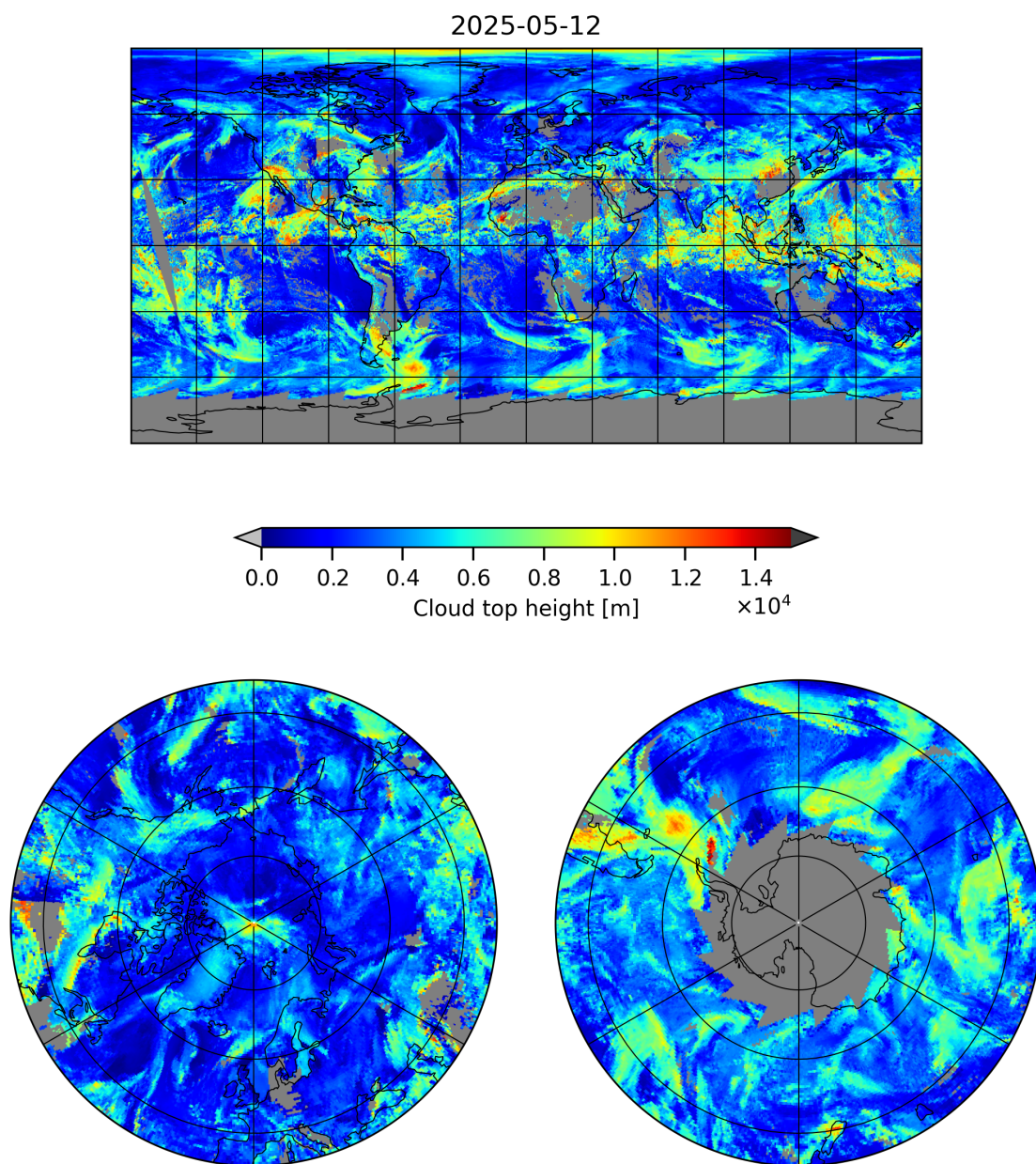


Figure 5: Map of “Cloud top height” for 2025-05-12 to 2025-05-13

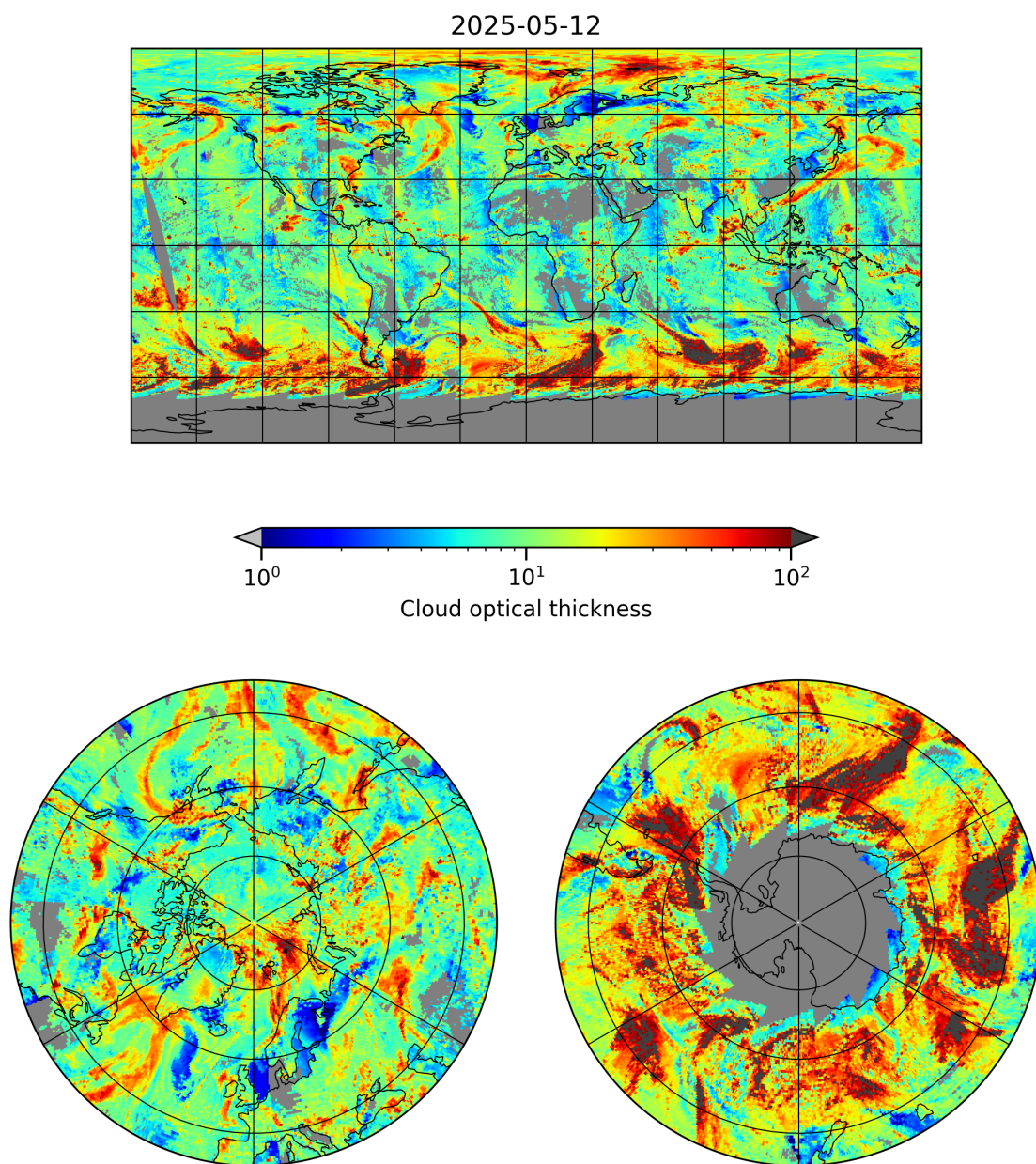


Figure 6: Map of “Cloud optical thickness” for 2025-05-12 to 2025-05-13

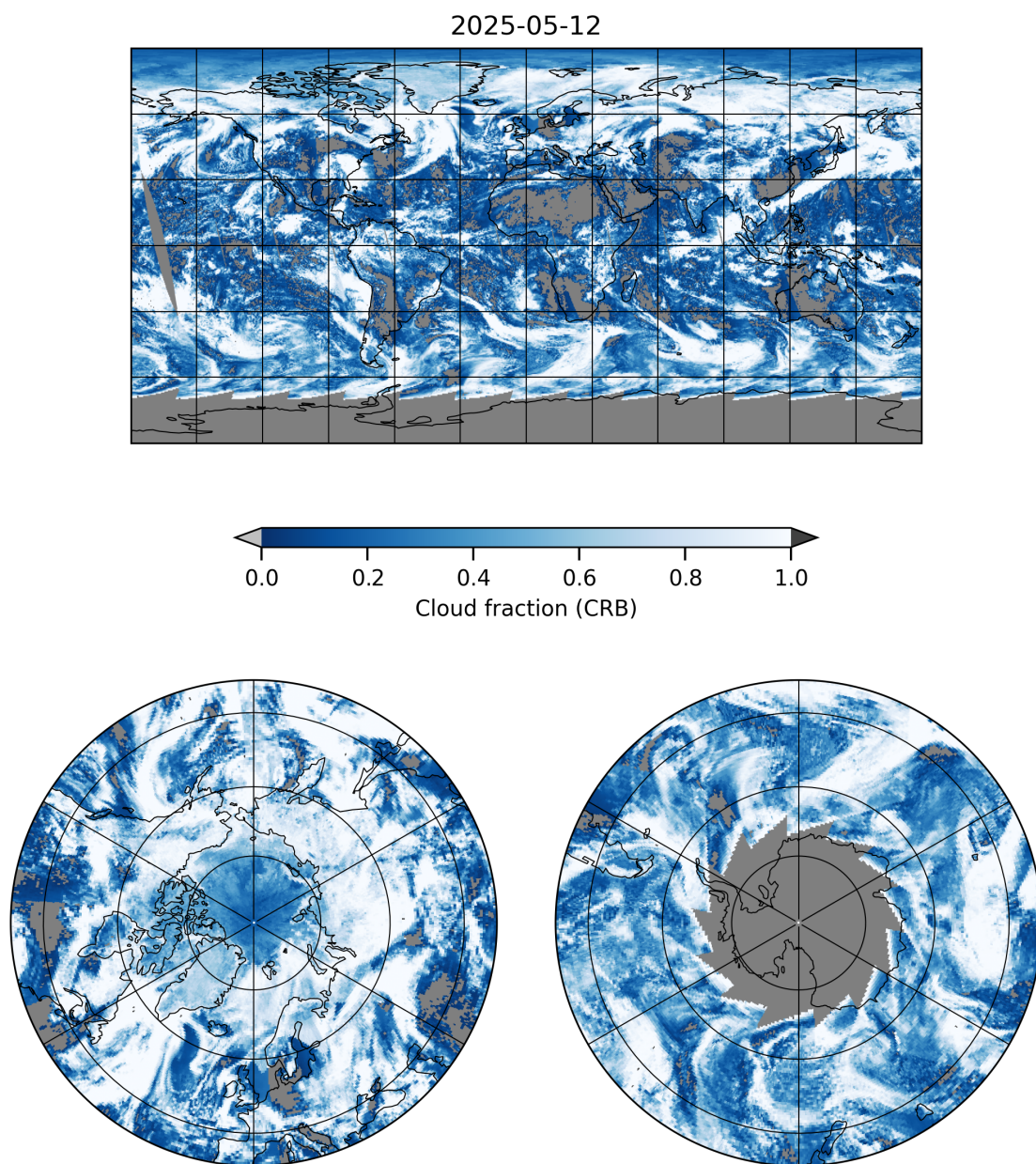


Figure 7: Map of “Cloud fraction (CRB)” for 2025-05-12 to 2025-05-13

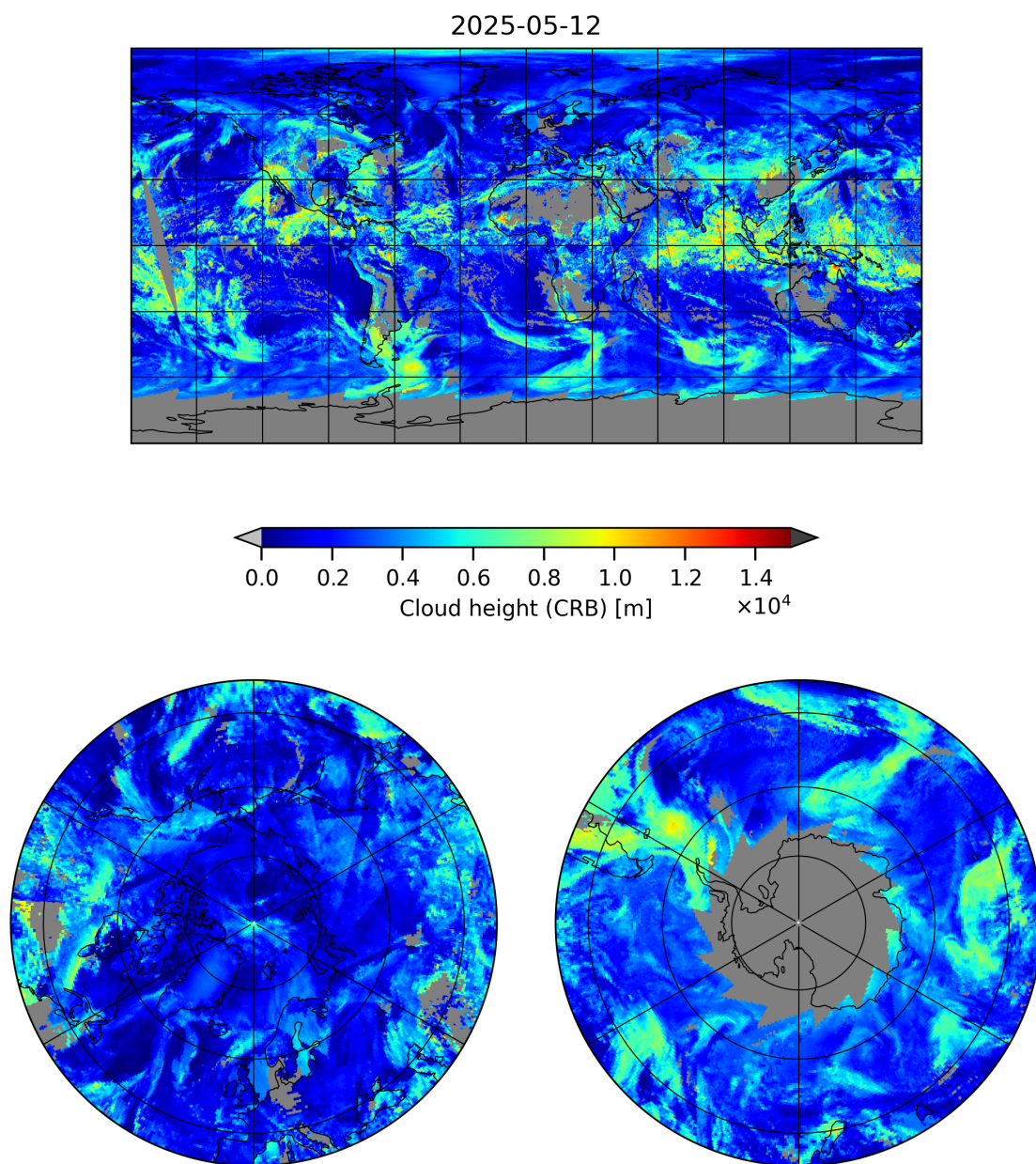


Figure 8: Map of “Cloud height (CRB)” for 2025-05-12 to 2025-05-13

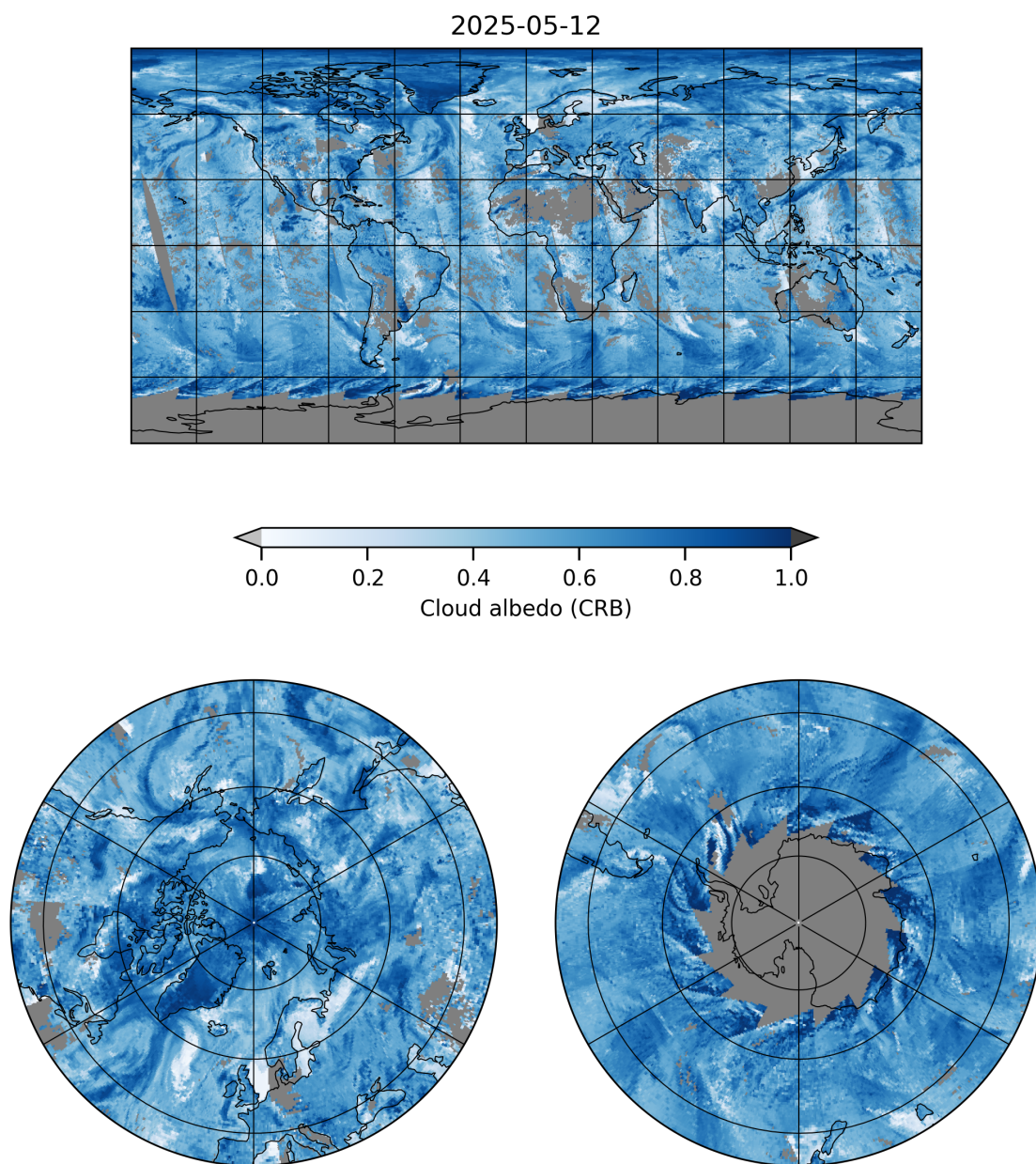


Figure 9: Map of “Cloud albedo (CRB)” for 2025-05-12 to 2025-05-13

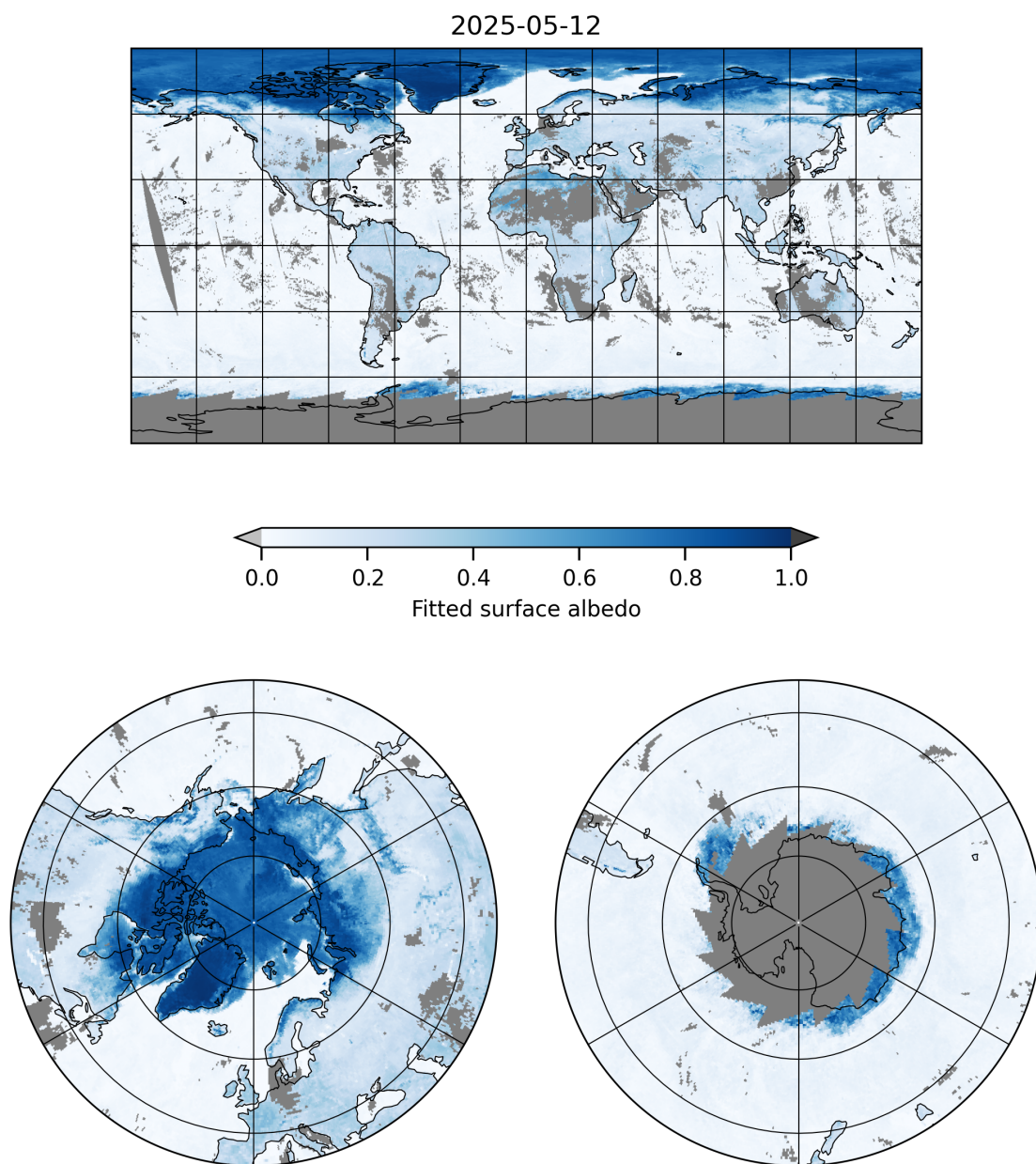


Figure 10: Map of “Fitted surface albedo” for 2025-05-12 to 2025-05-13

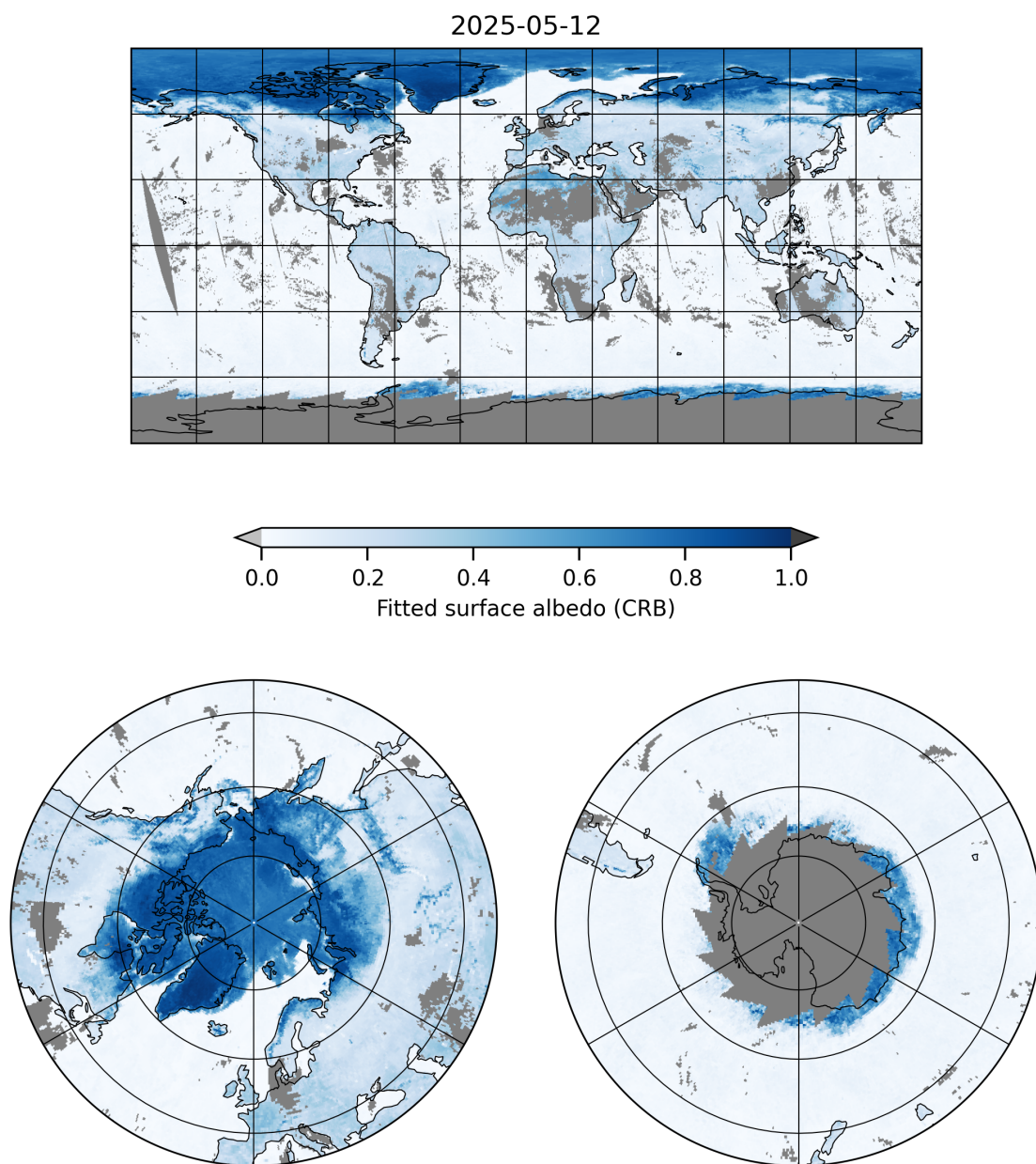


Figure 11: Map of “Fitted surface albedo (CRB)” for 2025-05-12 to 2025-05-13

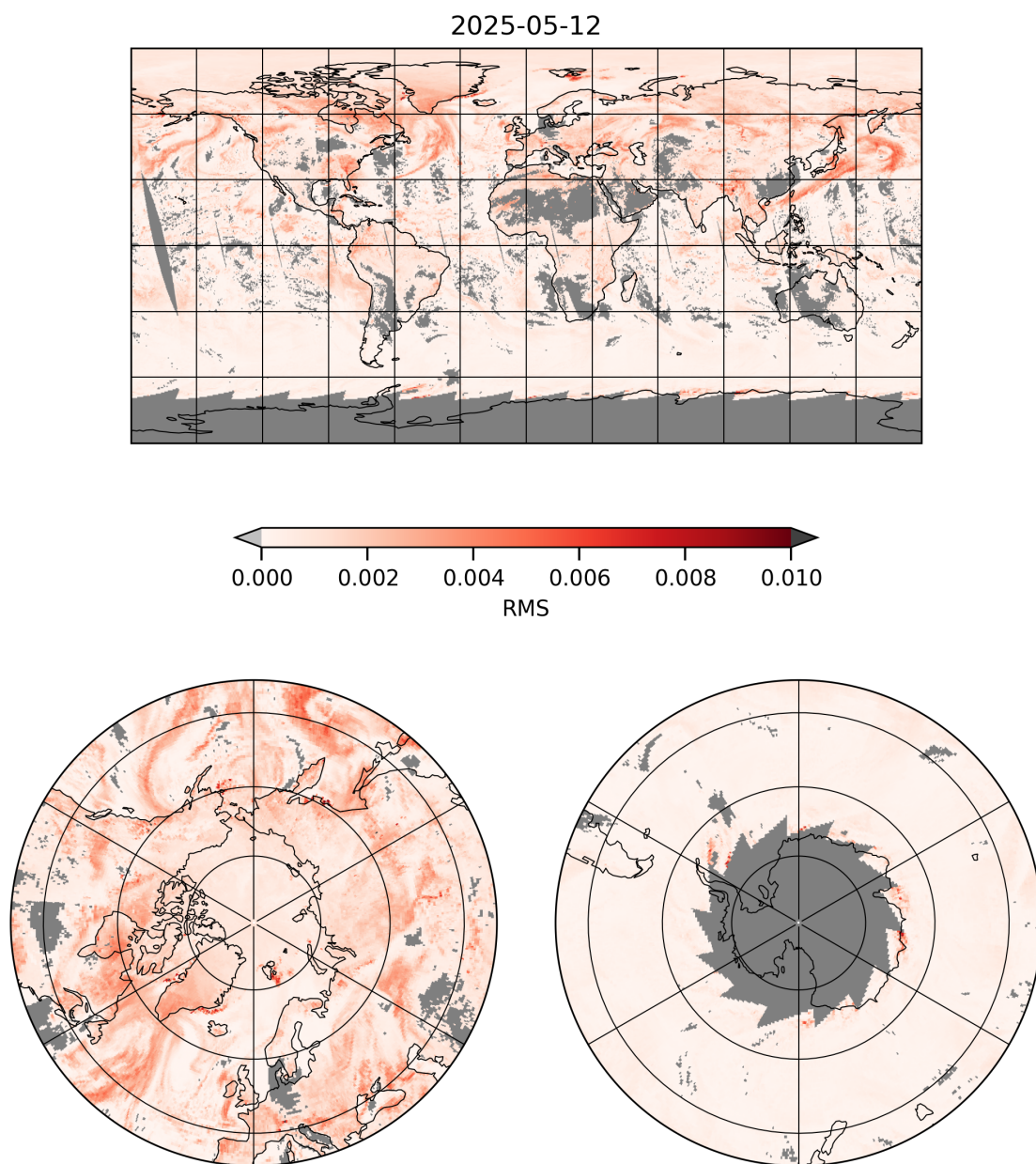


Figure 12: Map of “RMS” for 2025-05-12 to 2025-05-13

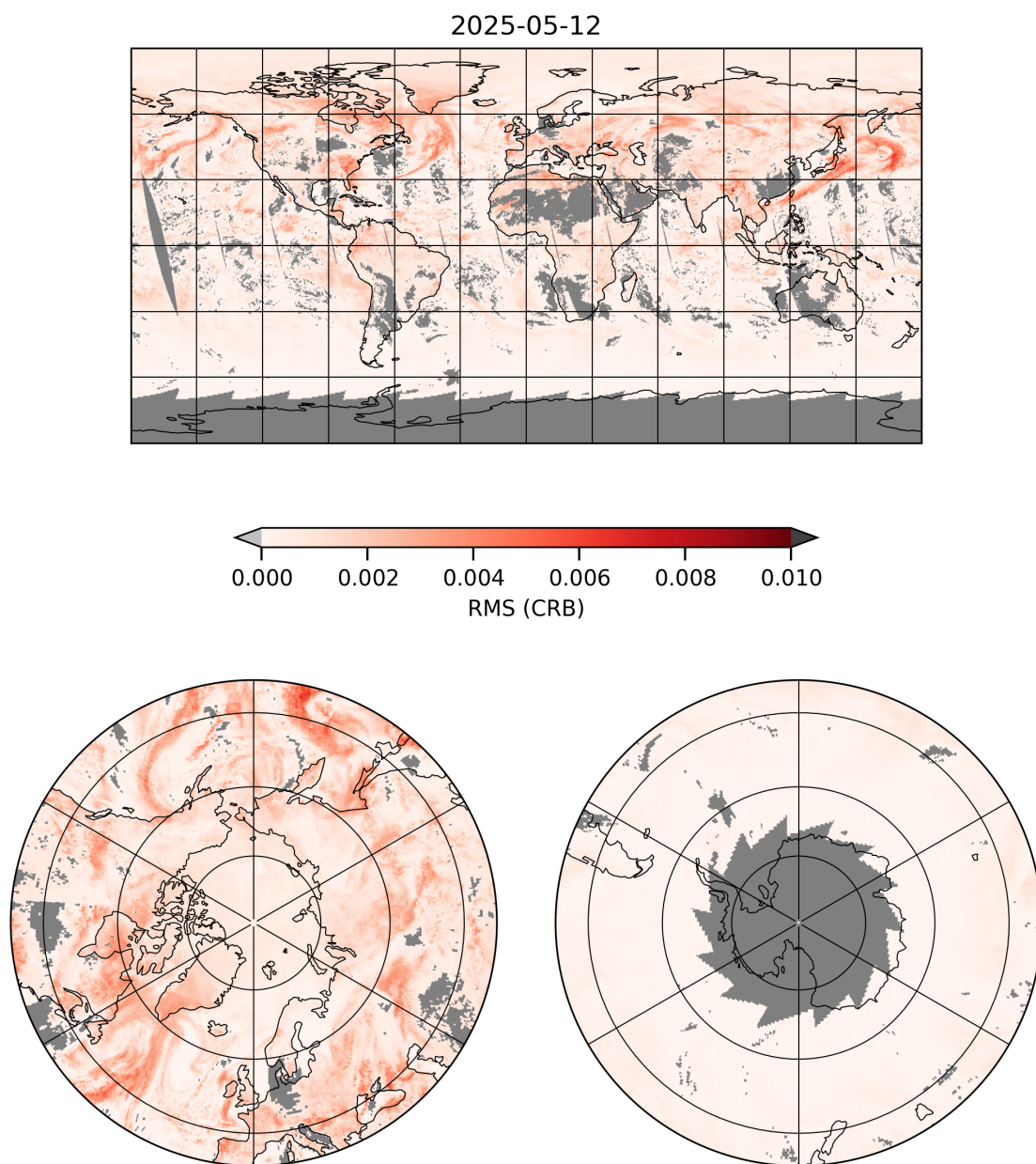


Figure 13: Map of “RMS (CRB)” for 2025-05-12 to 2025-05-13

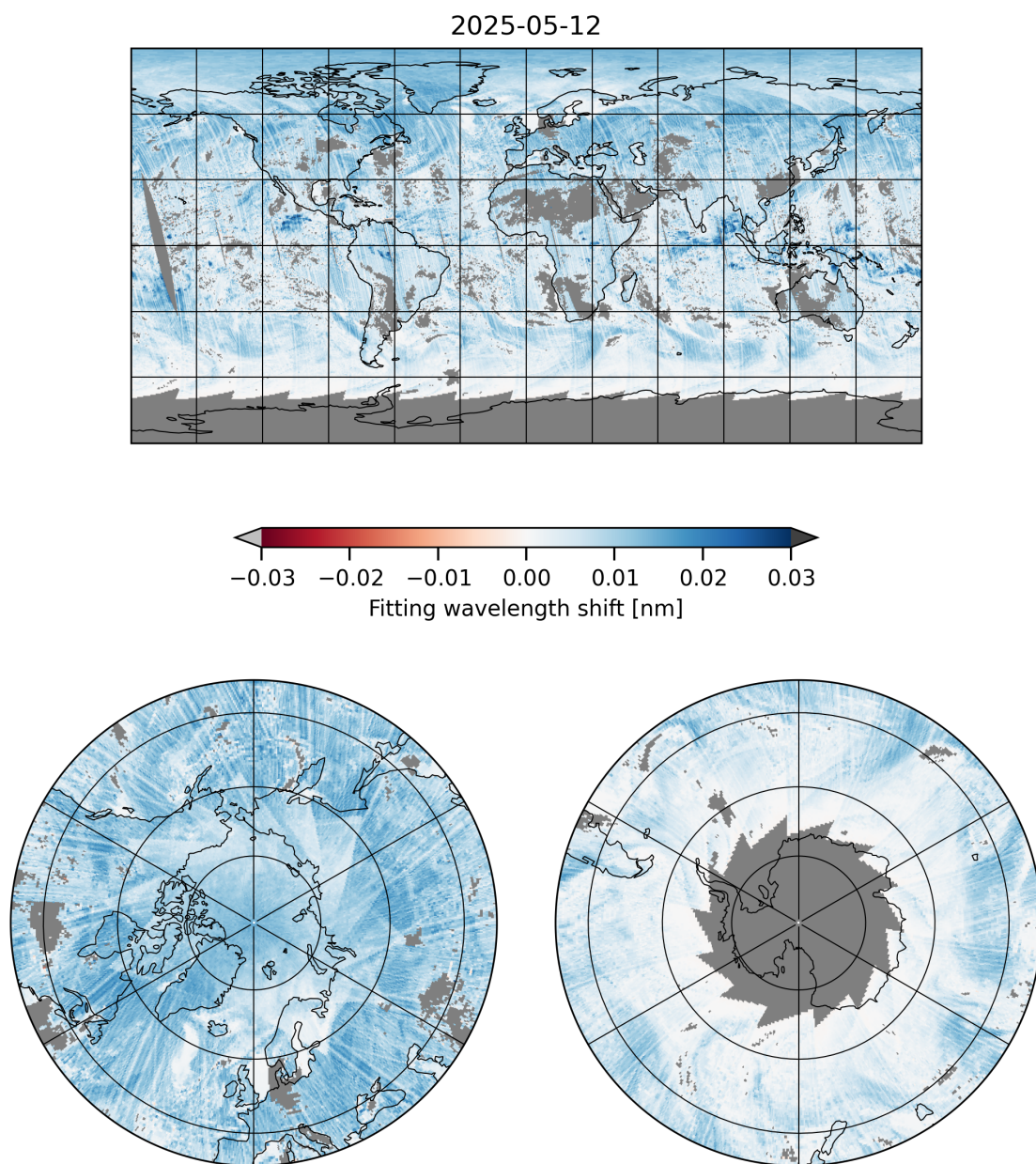


Figure 14: Map of "Fitting wavelength shift" for 2025-05-12 to 2025-05-13

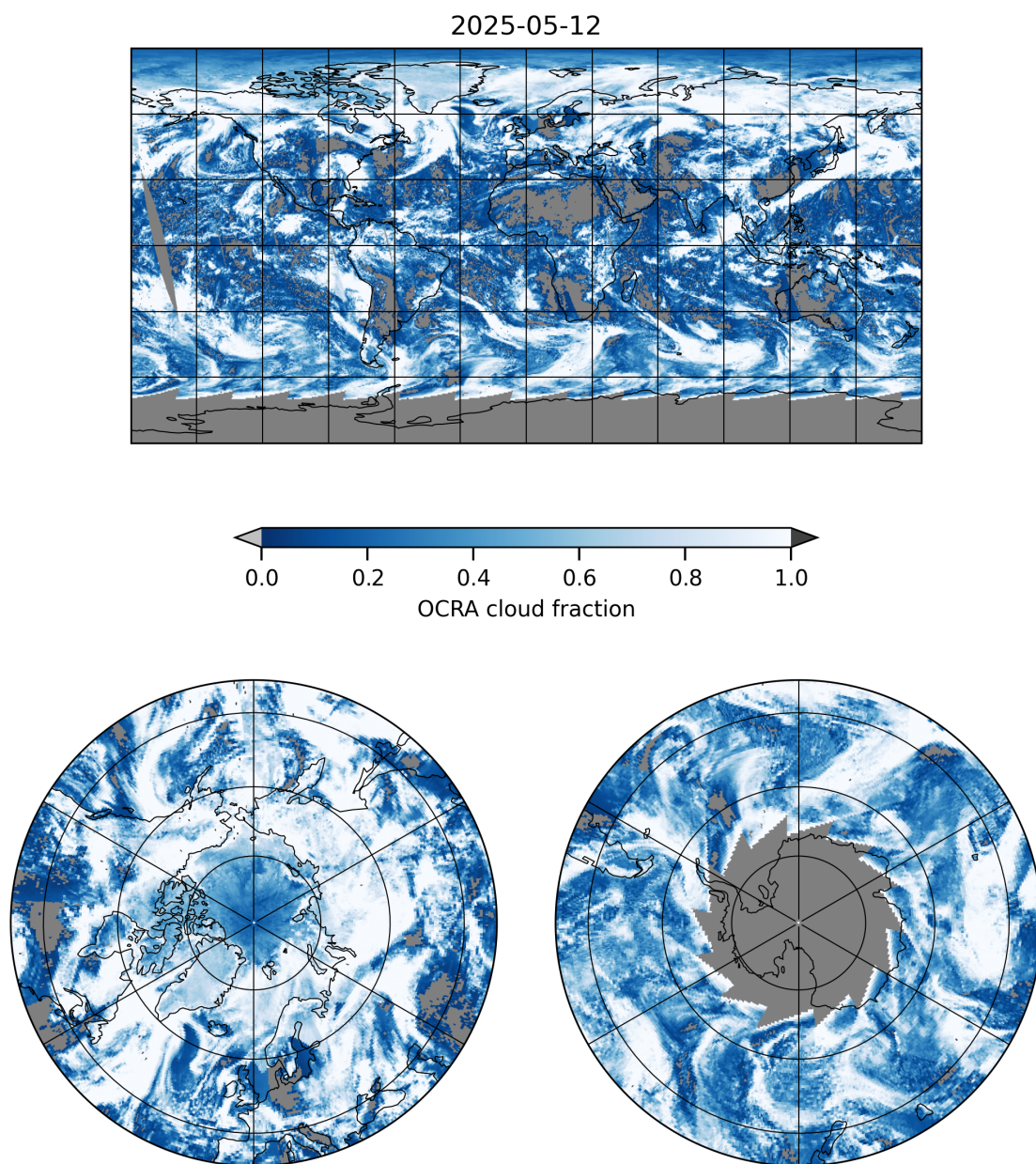


Figure 15: Map of “OCRA cloud fraction” for 2025-05-12 to 2025-05-13

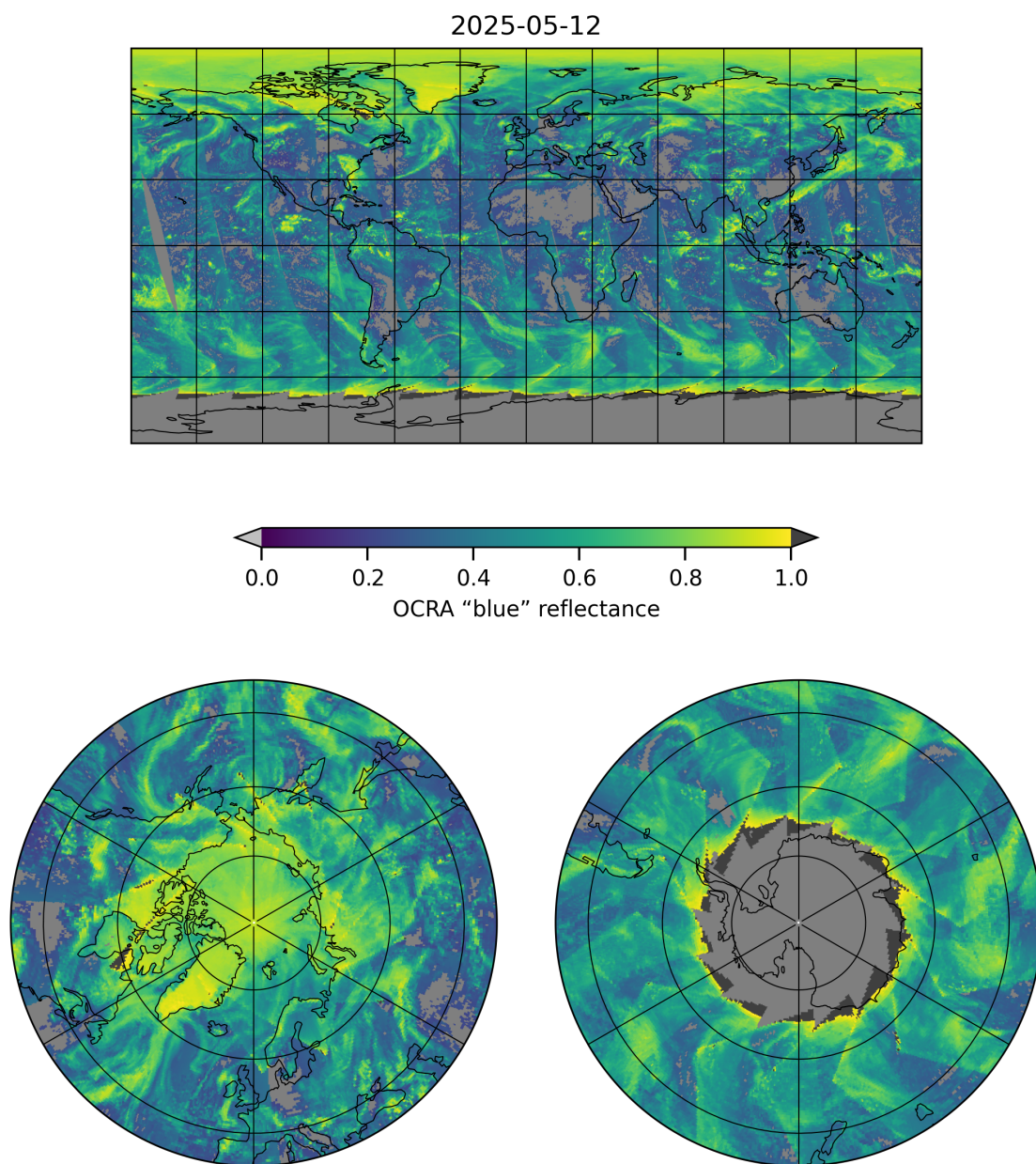


Figure 16: Map of "OCRA "blue" reflectance" for 2025-05-12 to 2025-05-13

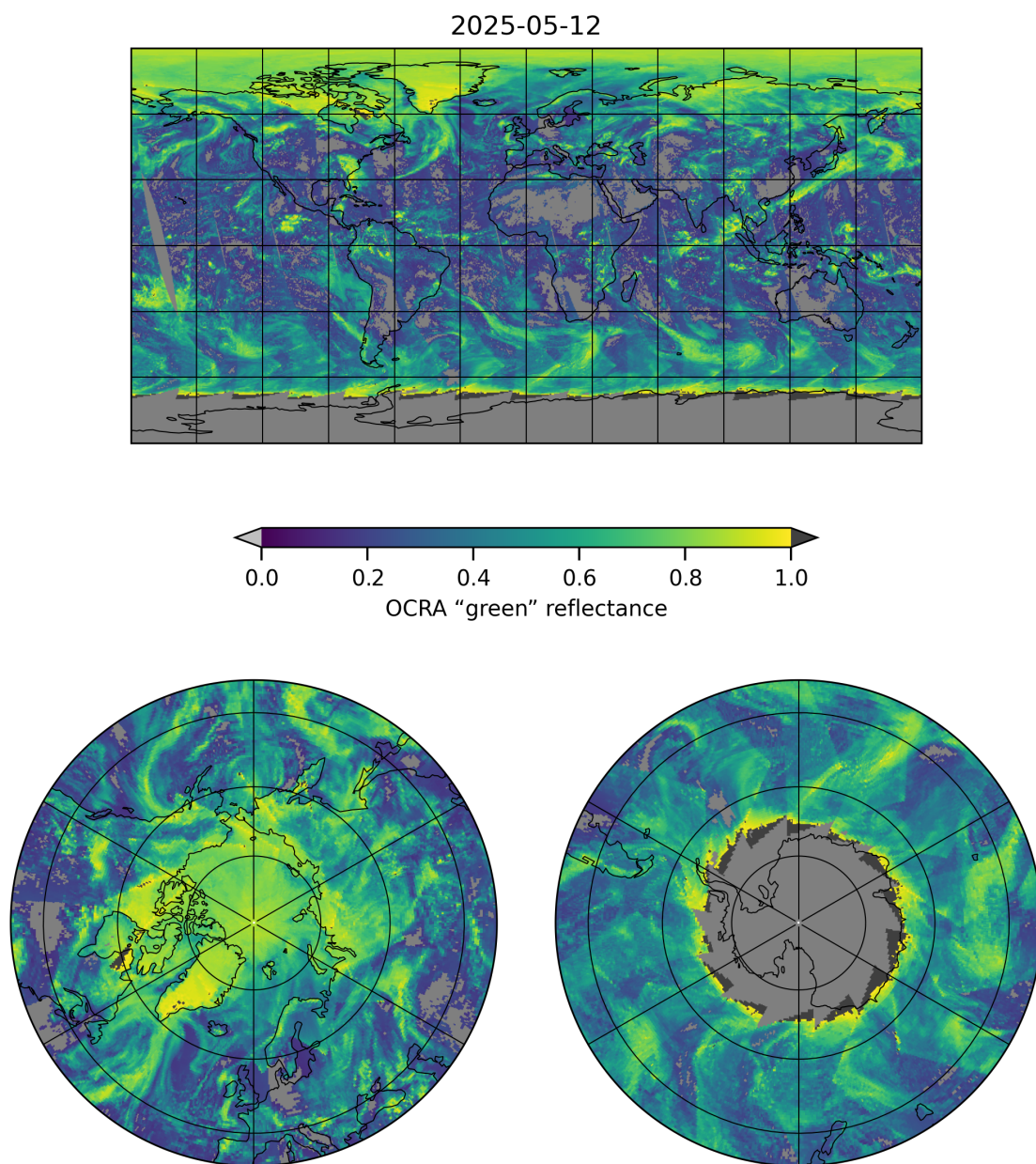


Figure 17: Map of "OCRA "green" reflectance" for 2025-05-12 to 2025-05-13

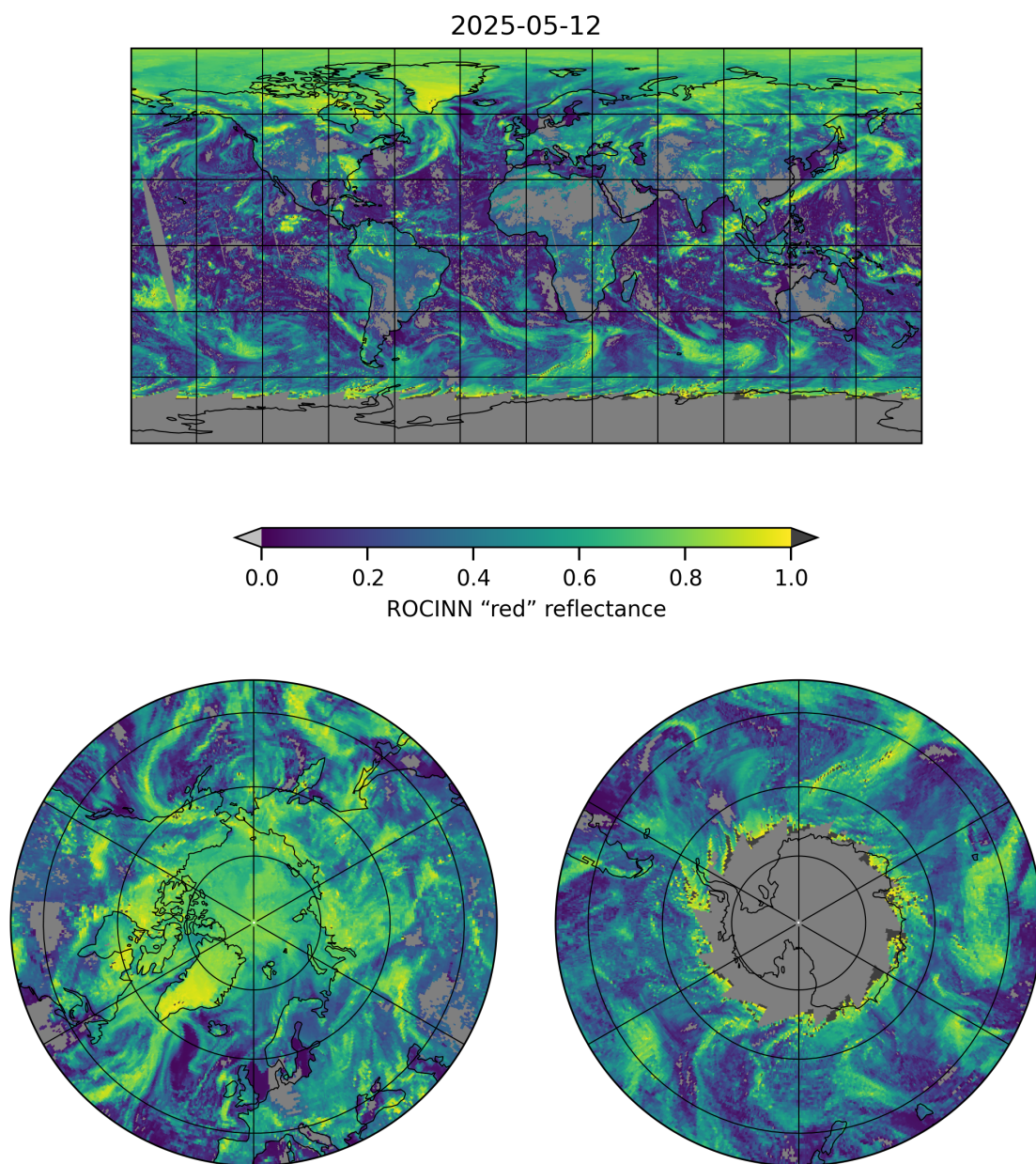


Figure 18: Map of "ROCINN "red" reflectance" for 2025-05-12 to 2025-05-13

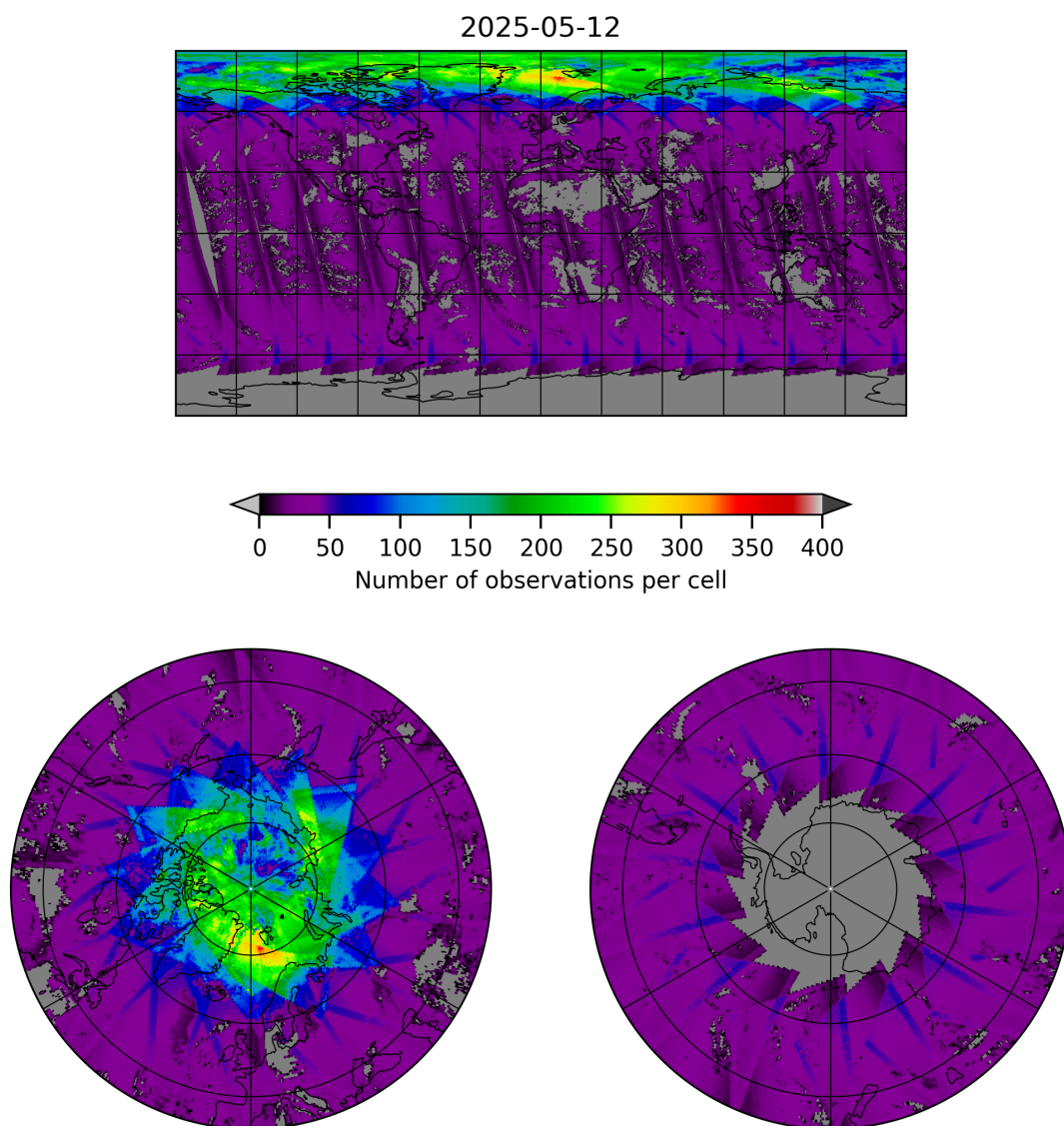


Figure 19: Map of the number of observations for 2025-05-12 to 2025-05-13

7 Zonal average

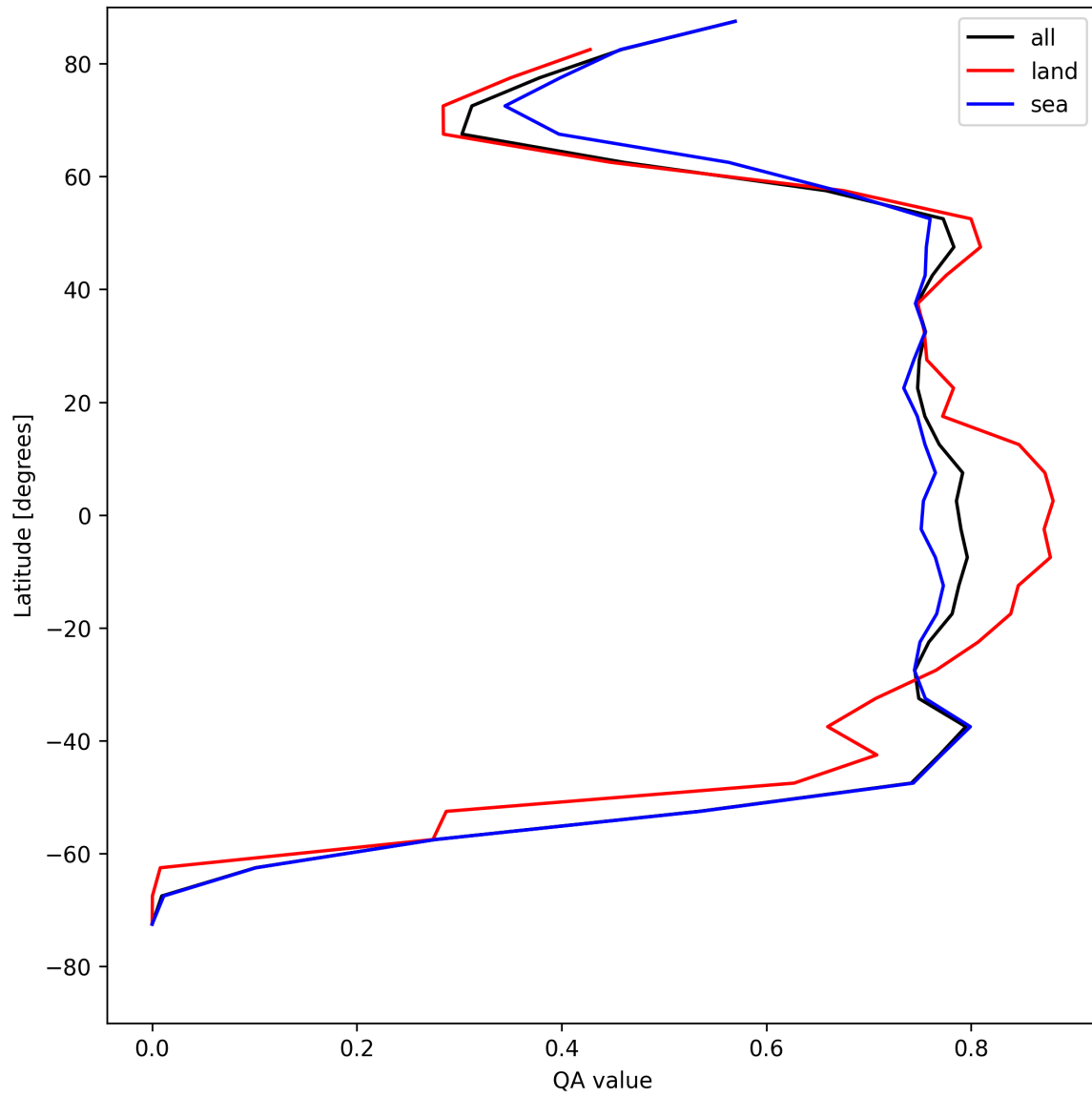


Figure 20: Zonal average of “QA value” for 2025-05-12 to 2025-05-13.

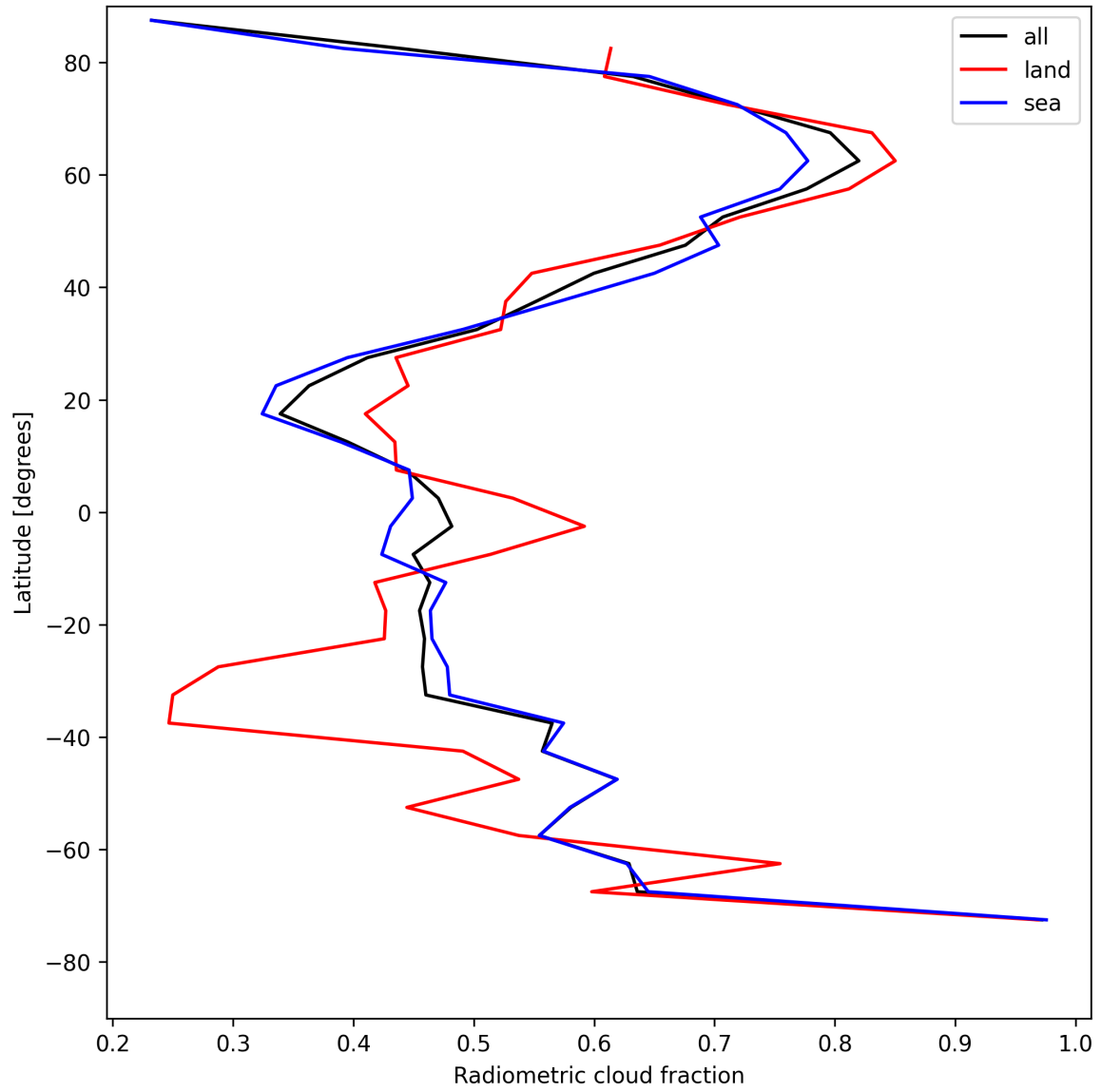


Figure 21: Zonal average of “Radiometric cloud fraction” for 2025-05-12 to 2025-05-13.

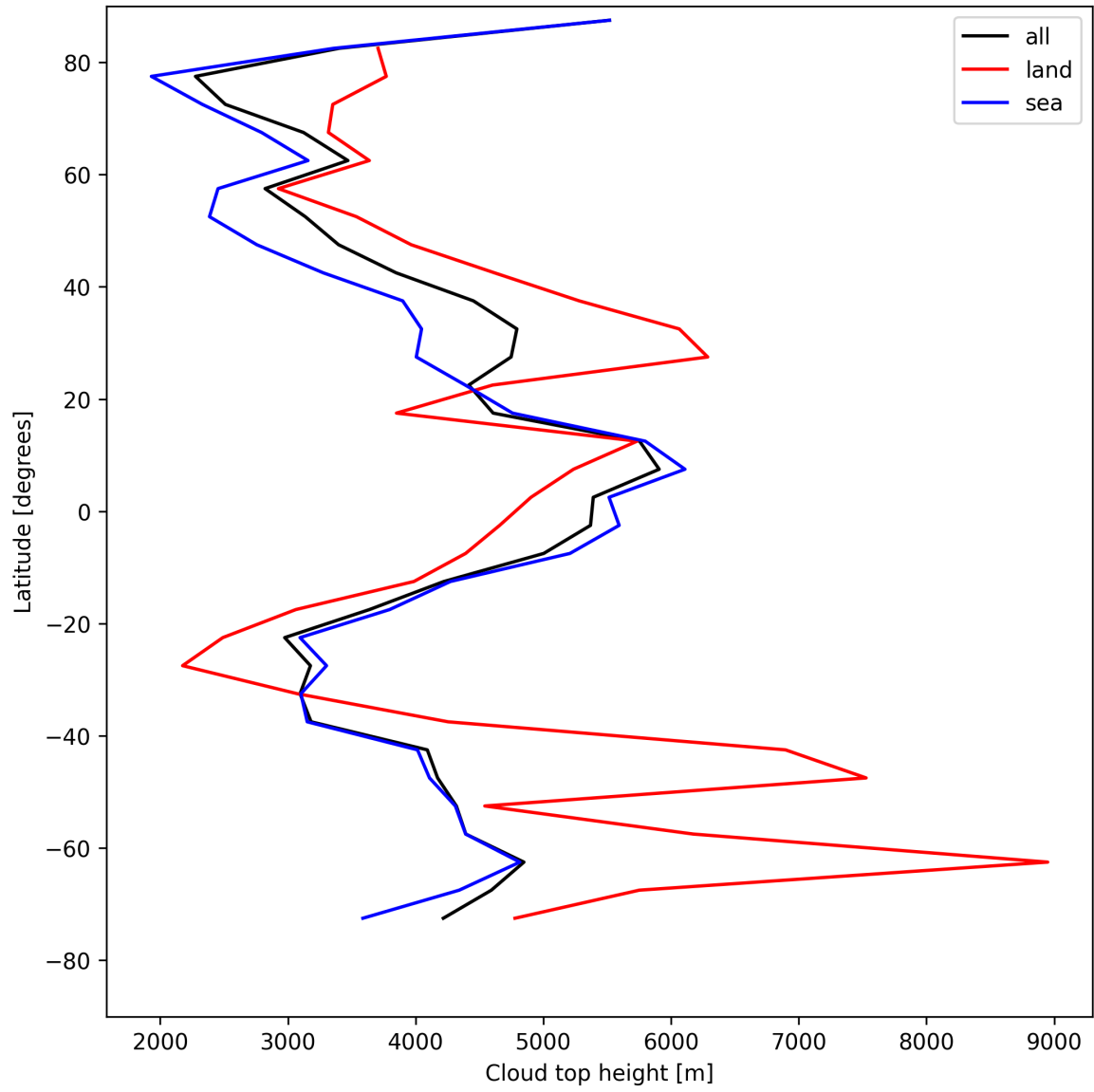


Figure 22: Zonal average of “Cloud top height” for 2025-05-12 to 2025-05-13.

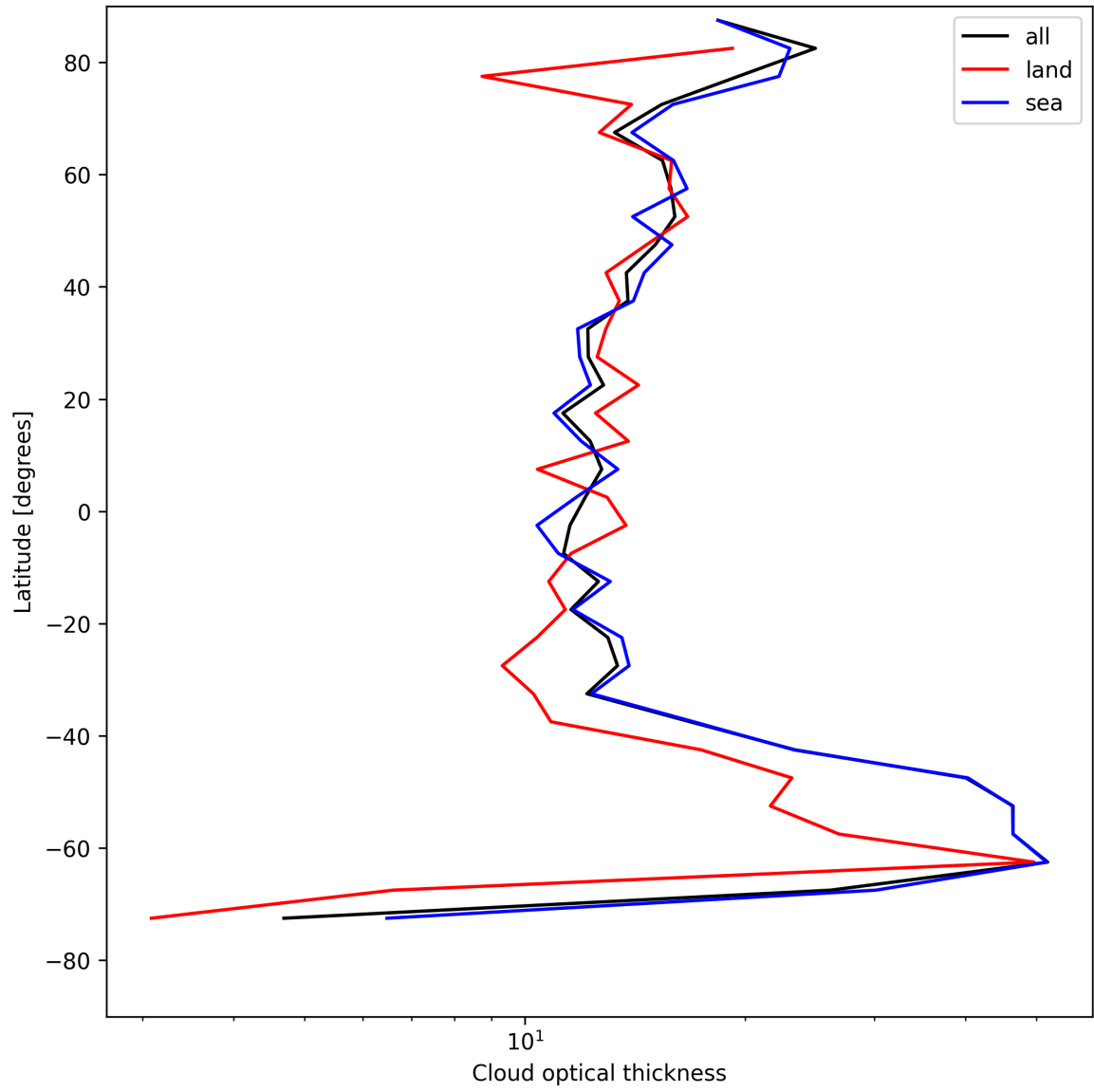


Figure 23: Zonal average of “Cloud optical thickness” for 2025-05-12 to 2025-05-13.

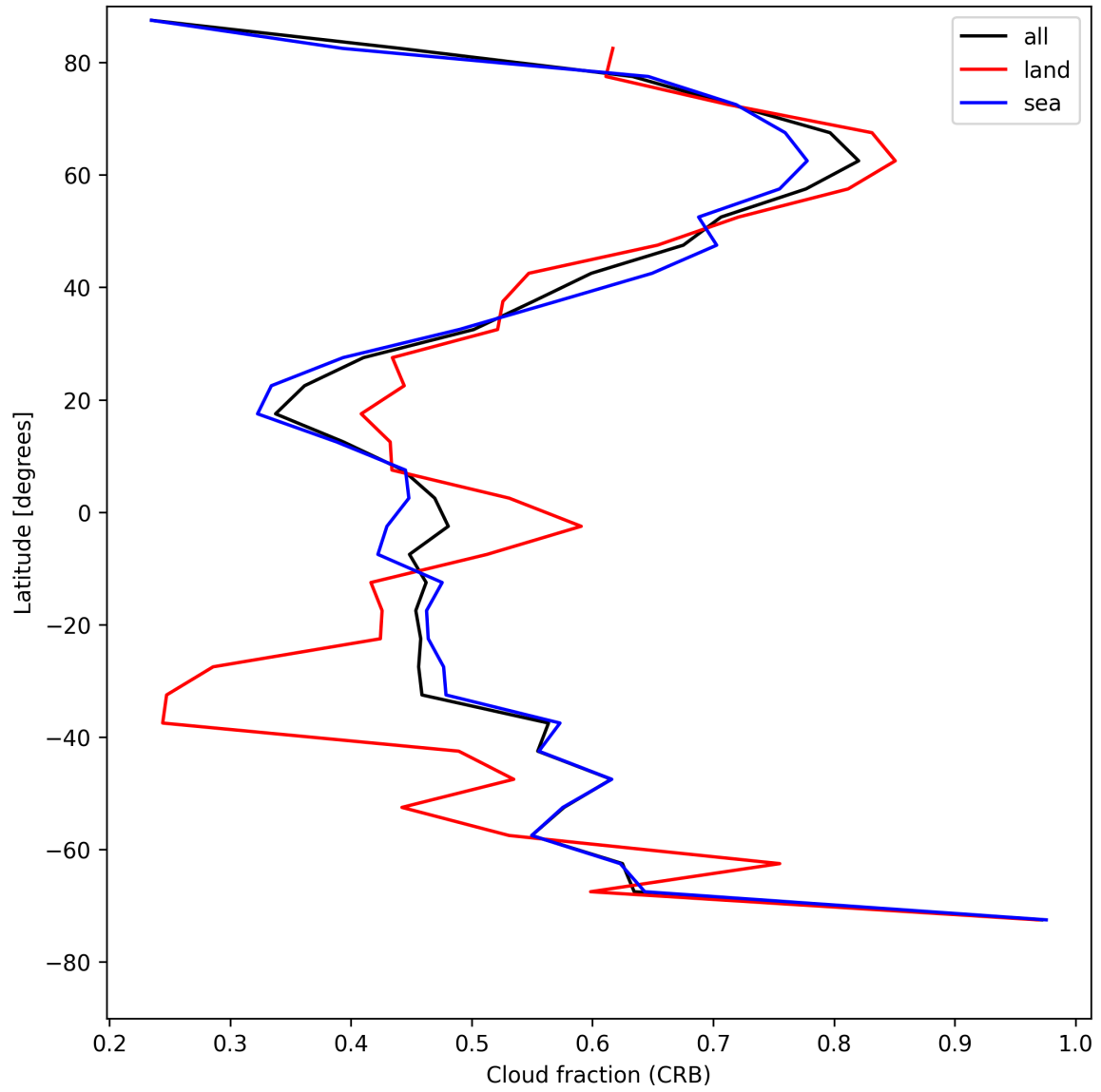


Figure 24: Zonal average of “Cloud fraction (CRB)” for 2025-05-12 to 2025-05-13.

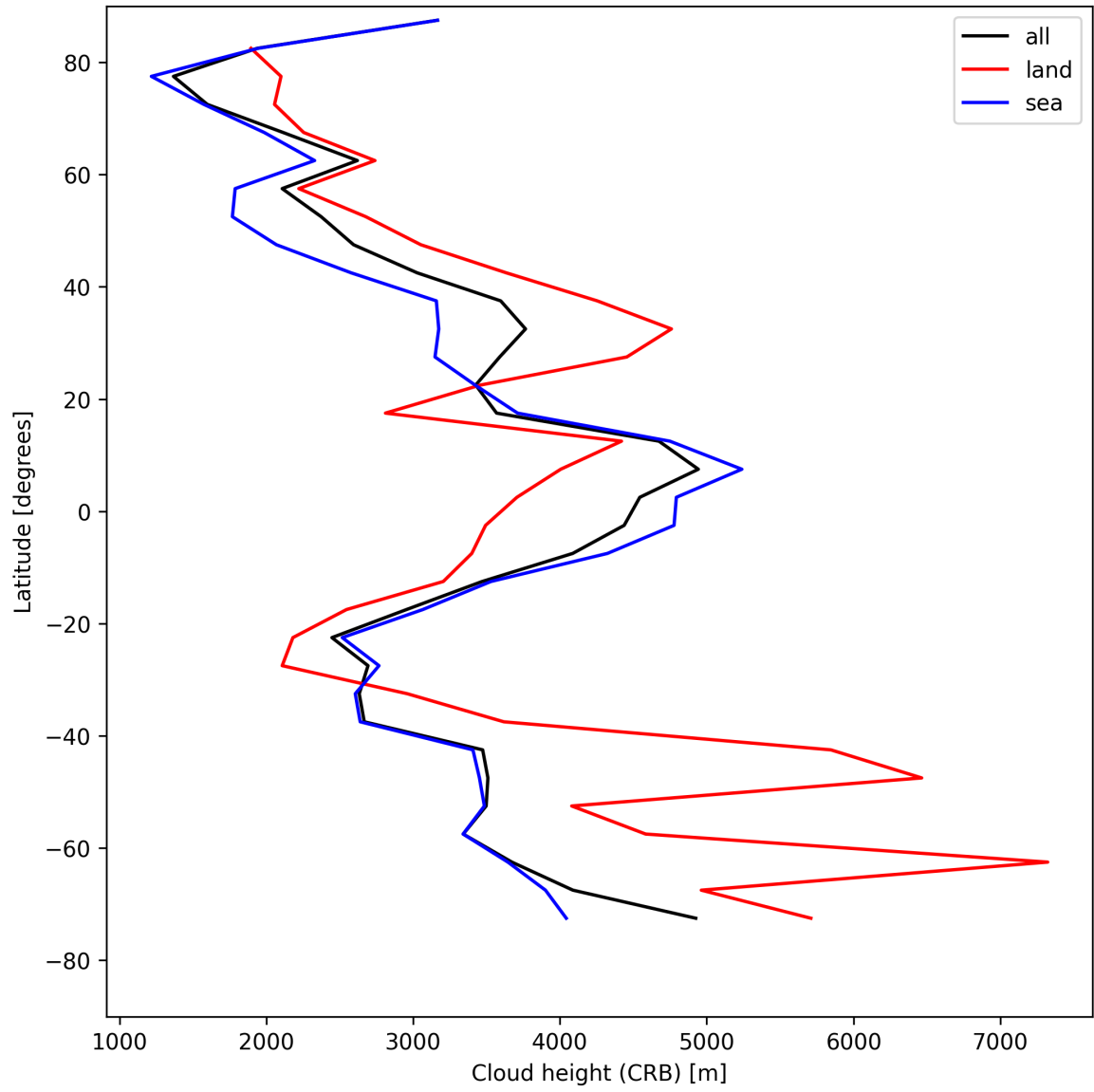


Figure 25: Zonal average of “Cloud height (CRB)” for 2025-05-12 to 2025-05-13.

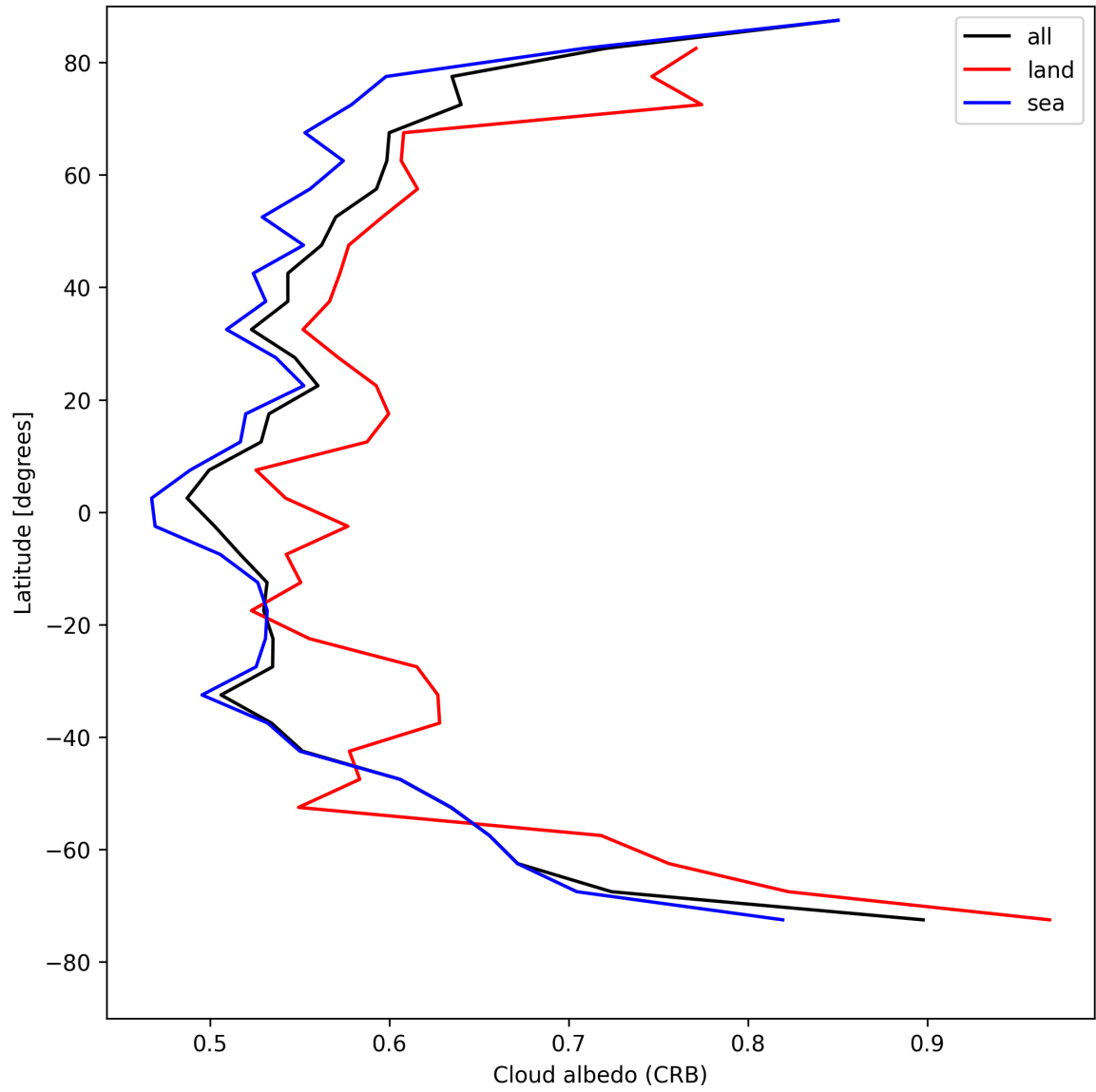


Figure 26: Zonal average of “Cloud albedo (CRB)” for 2025-05-12 to 2025-05-13.

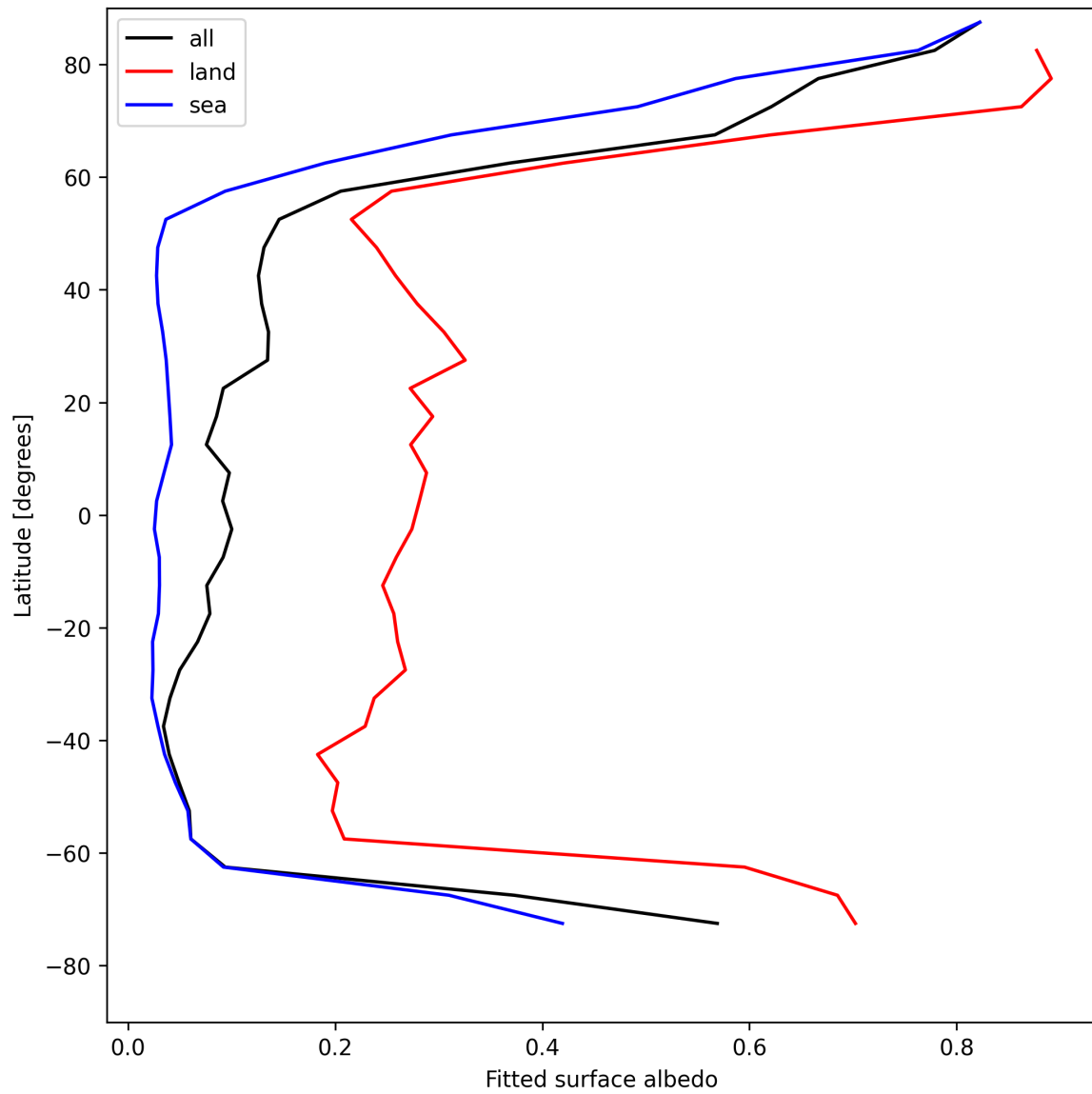


Figure 27: Zonal average of “Fitted surface albedo” for 2025-05-12 to 2025-05-13.

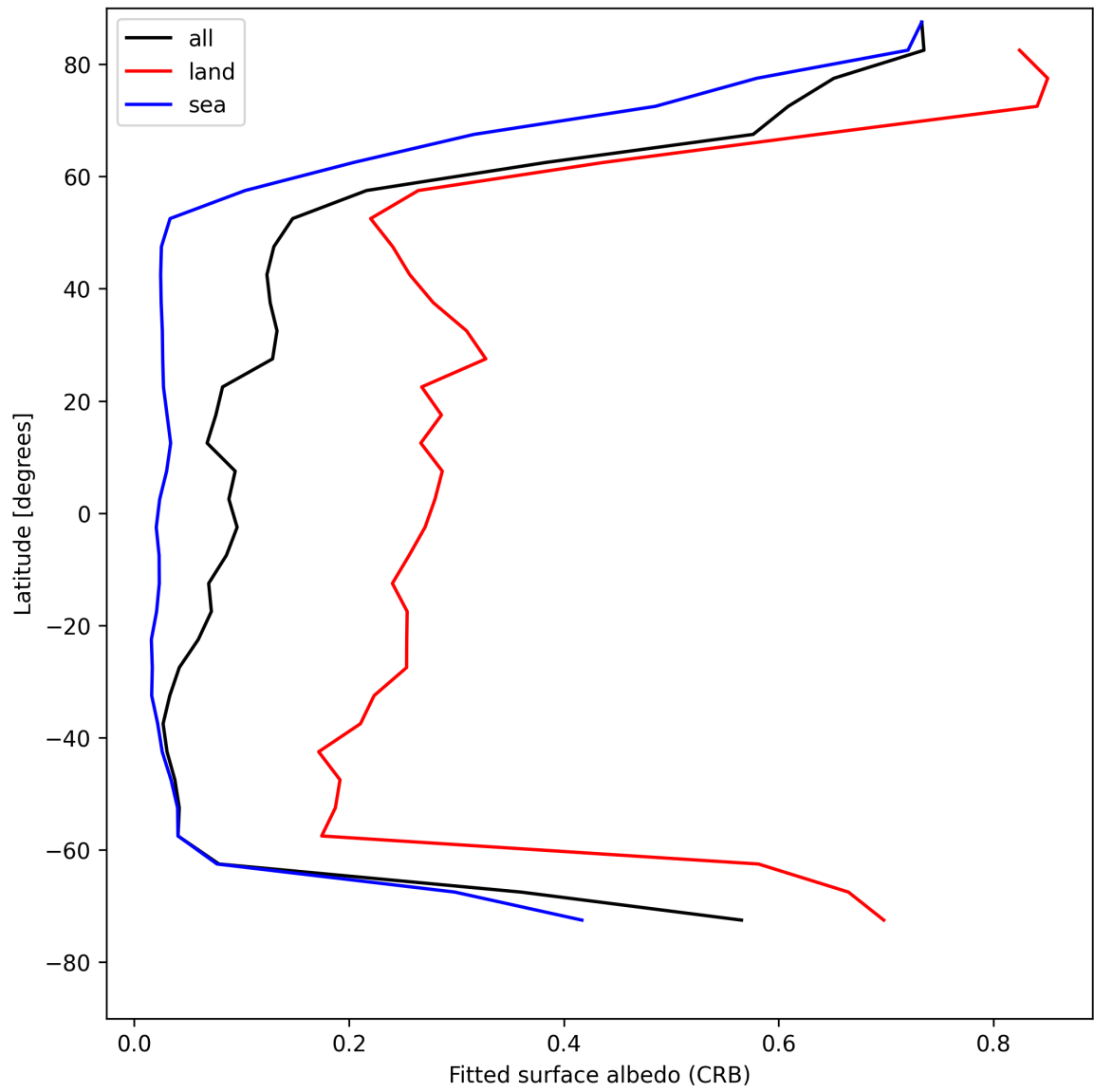


Figure 28: Zonal average of “Fitted surface albedo (CRB)” for 2025-05-12 to 2025-05-13.

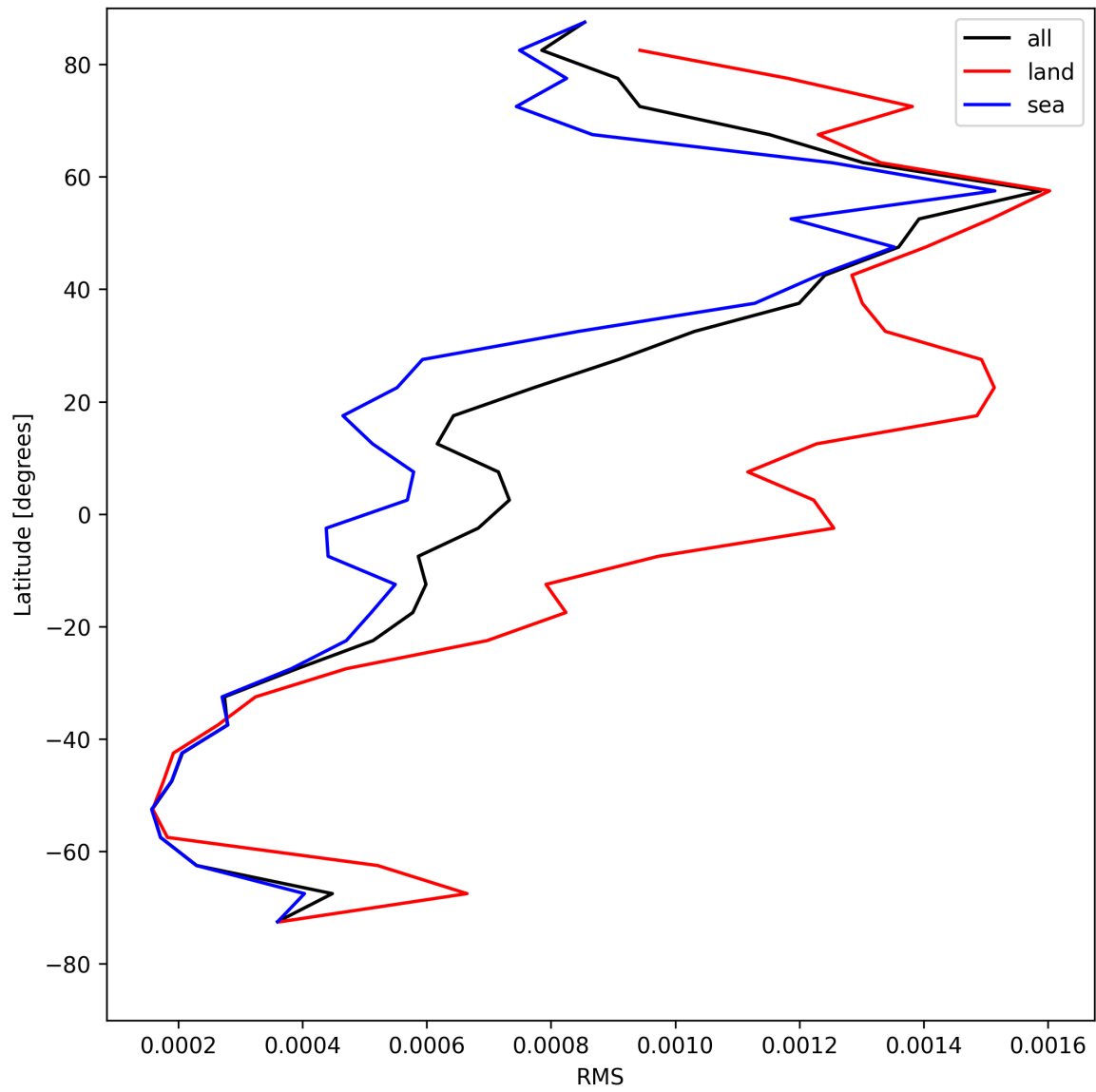


Figure 29: Zonal average of “RMS” for 2025-05-12 to 2025-05-13.

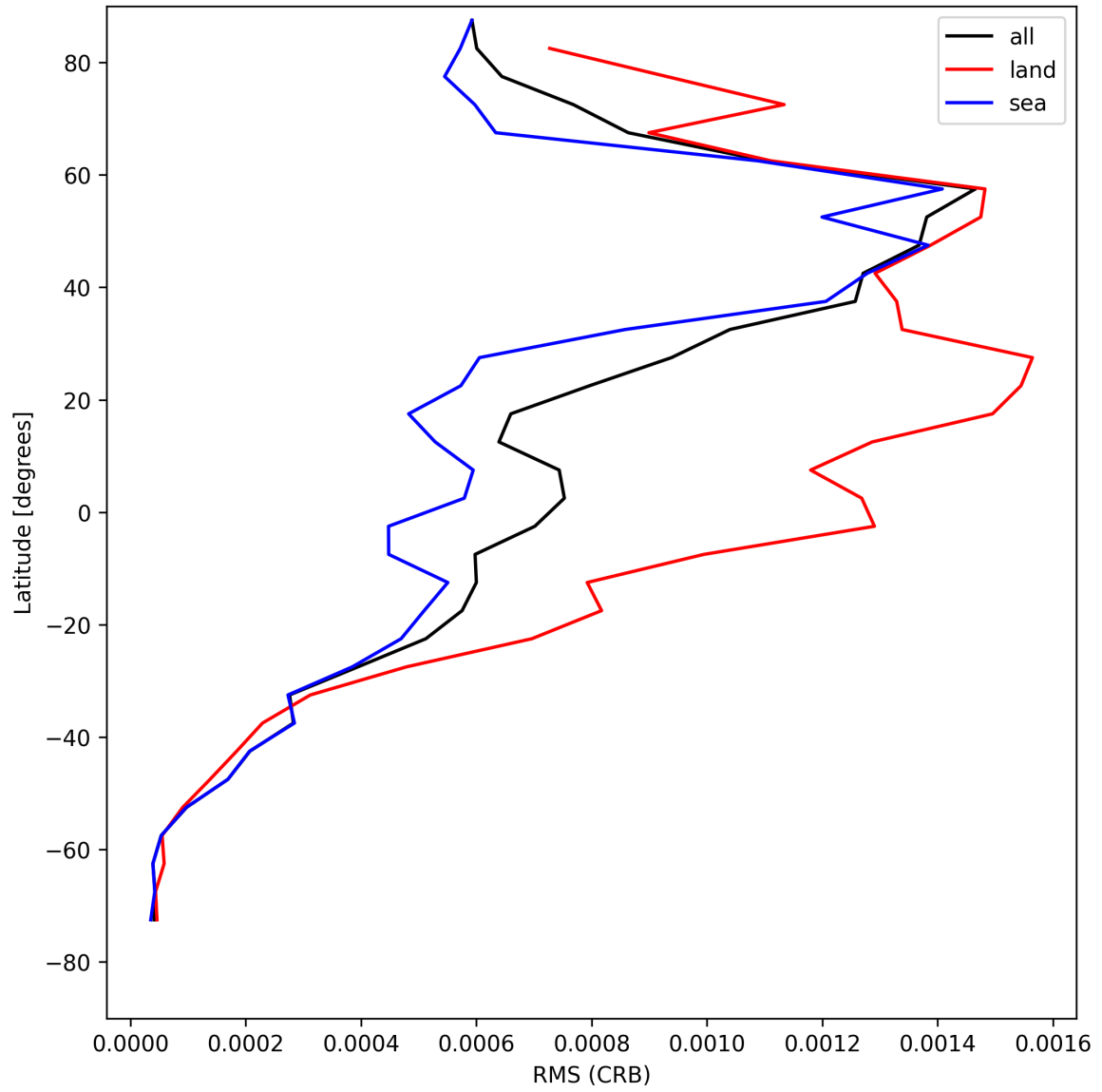


Figure 30: Zonal average of “RMS (CRB)” for 2025-05-12 to 2025-05-13.

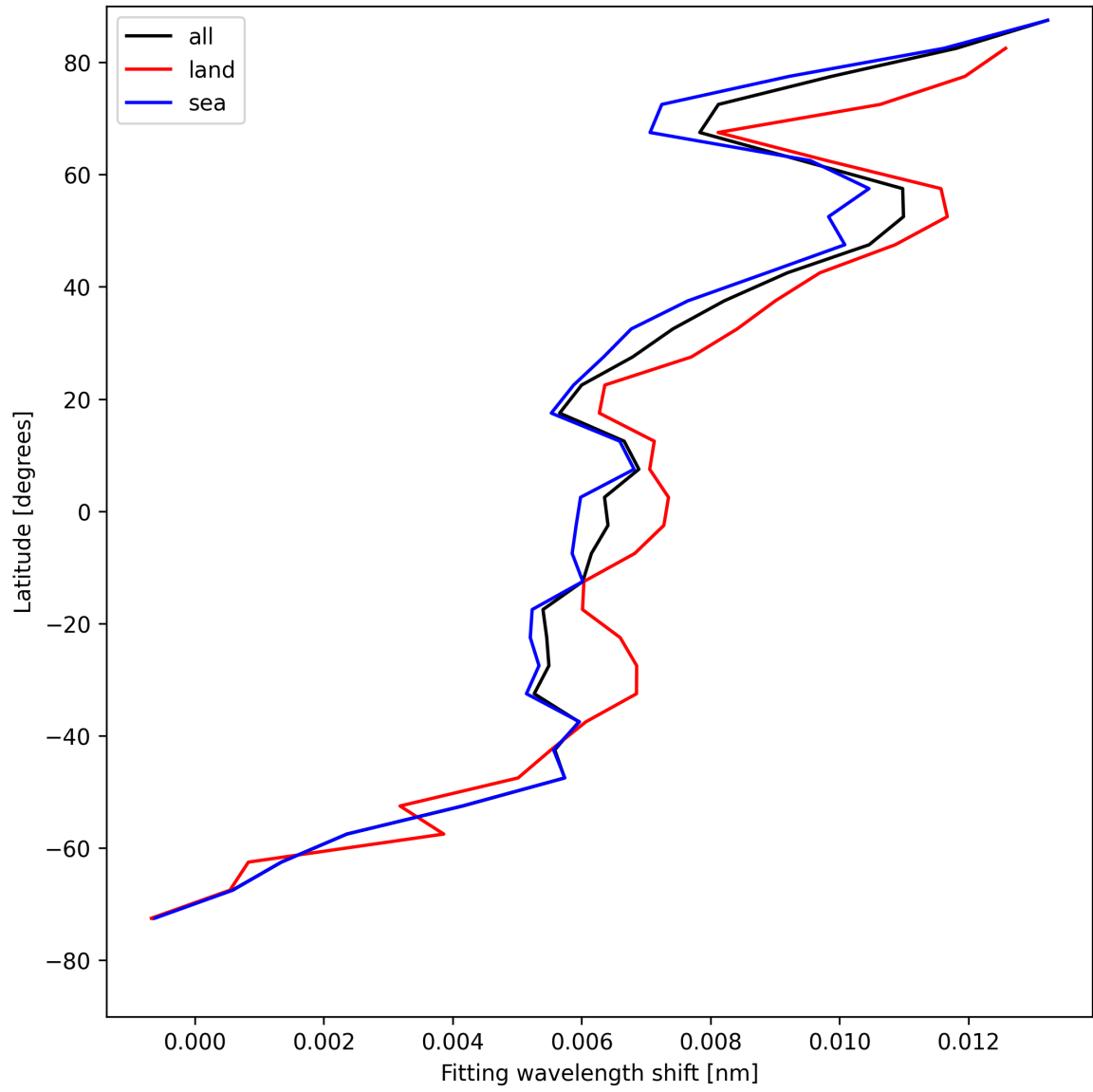


Figure 31: Zonal average of “Fitting wavelength shift” for 2025-05-12 to 2025-05-13.

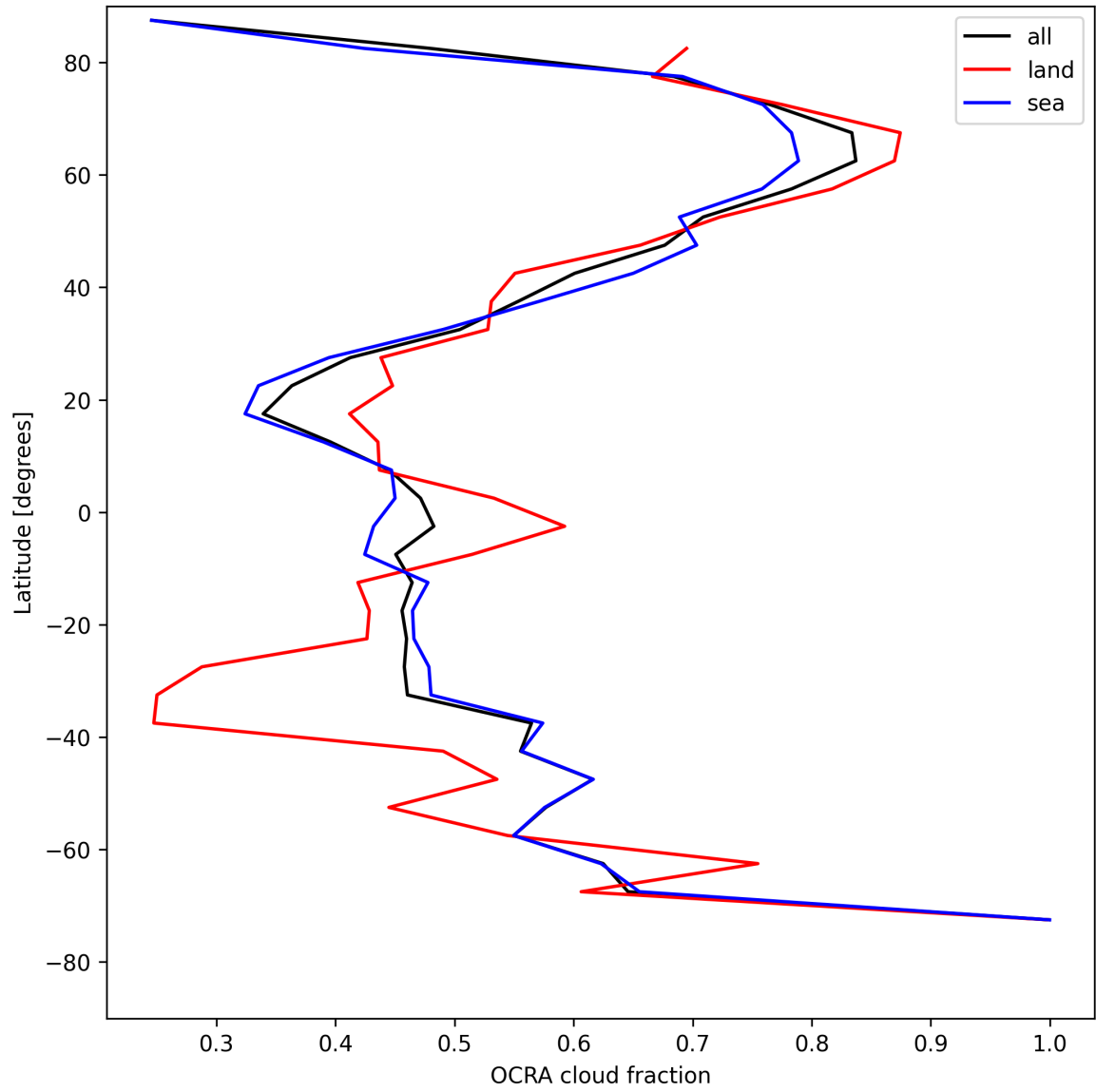


Figure 32: Zonal average of “OCRA cloud fraction” for 2025-05-12 to 2025-05-13.

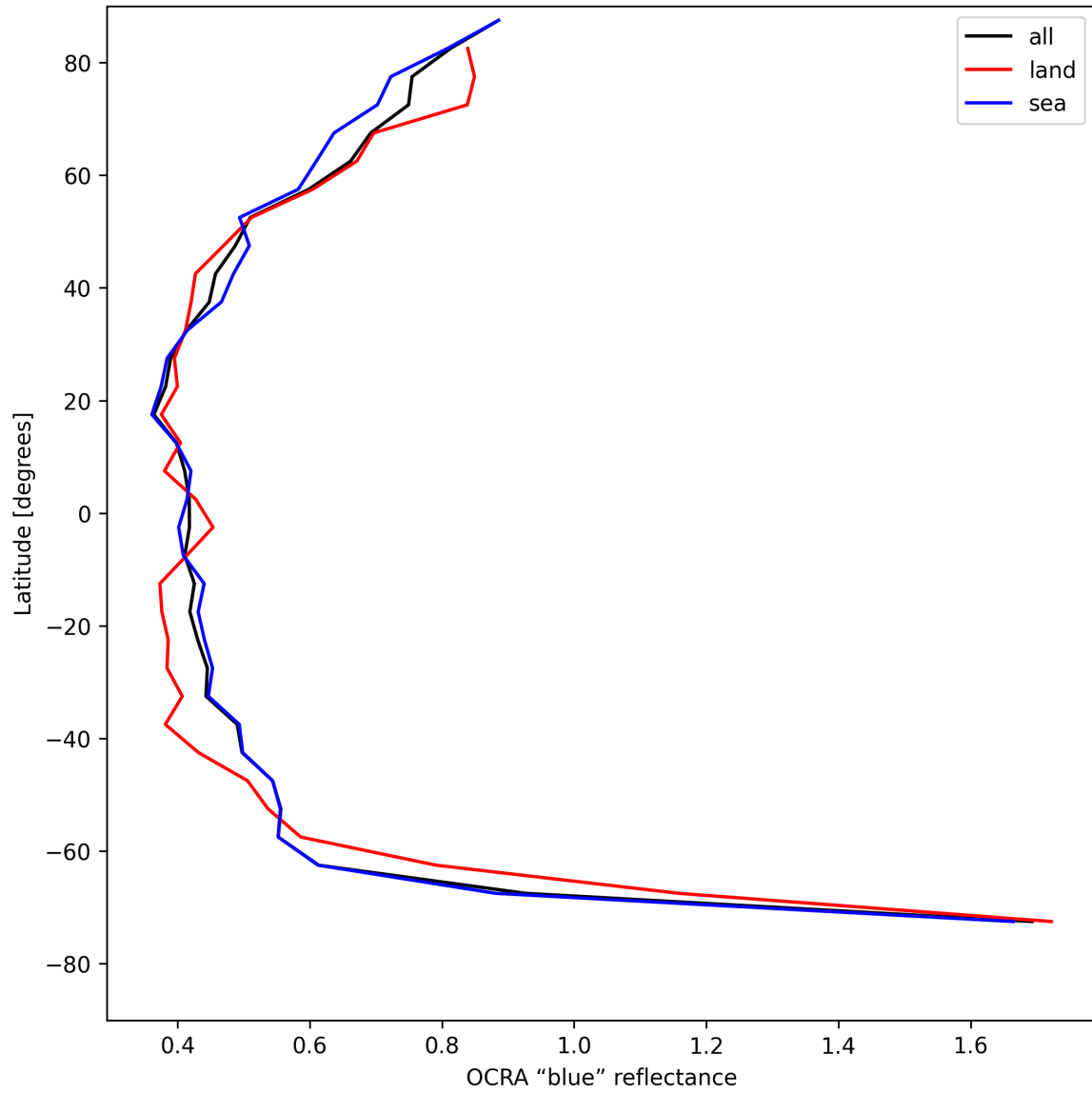


Figure 33: Zonal average of "OCRA "blue" reflectance" for 2025-05-12 to 2025-05-13.

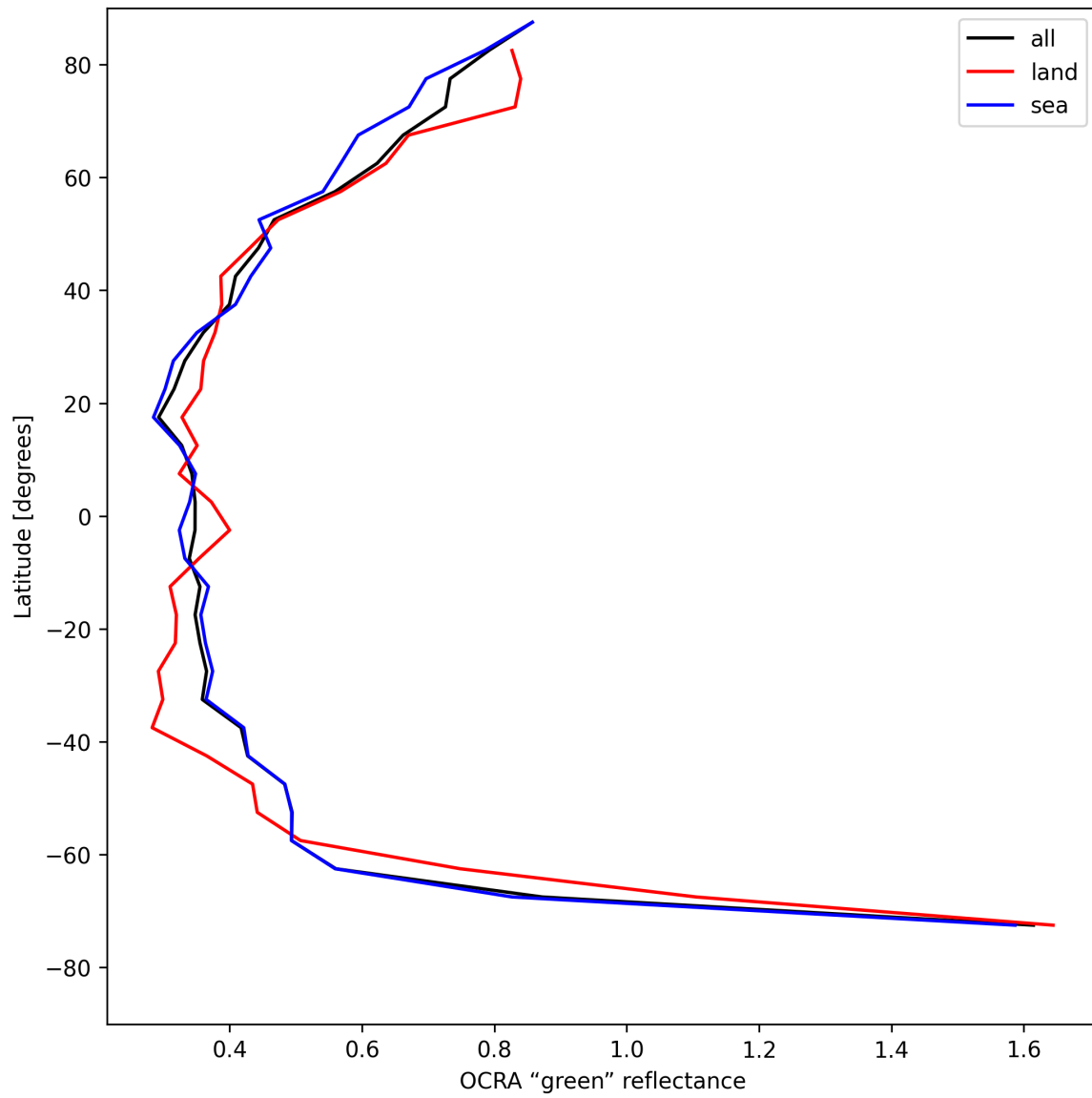


Figure 34: Zonal average of “OCRA “green” reflectance” for 2025-05-12 to 2025-05-13.

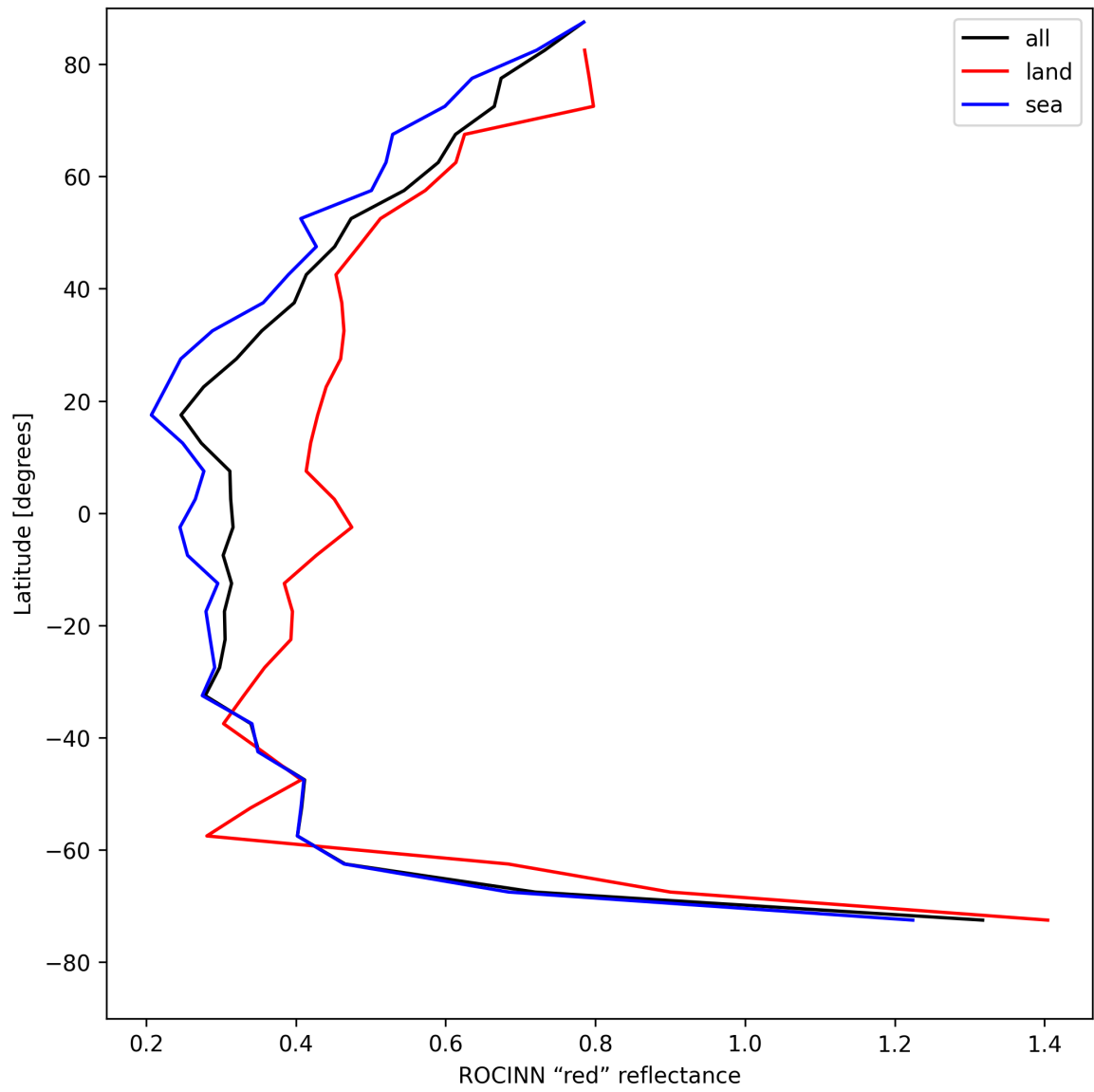


Figure 35: Zonal average of “ROCINN “red” reflectance” for 2025-05-12 to 2025-05-13.

8 Histograms

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

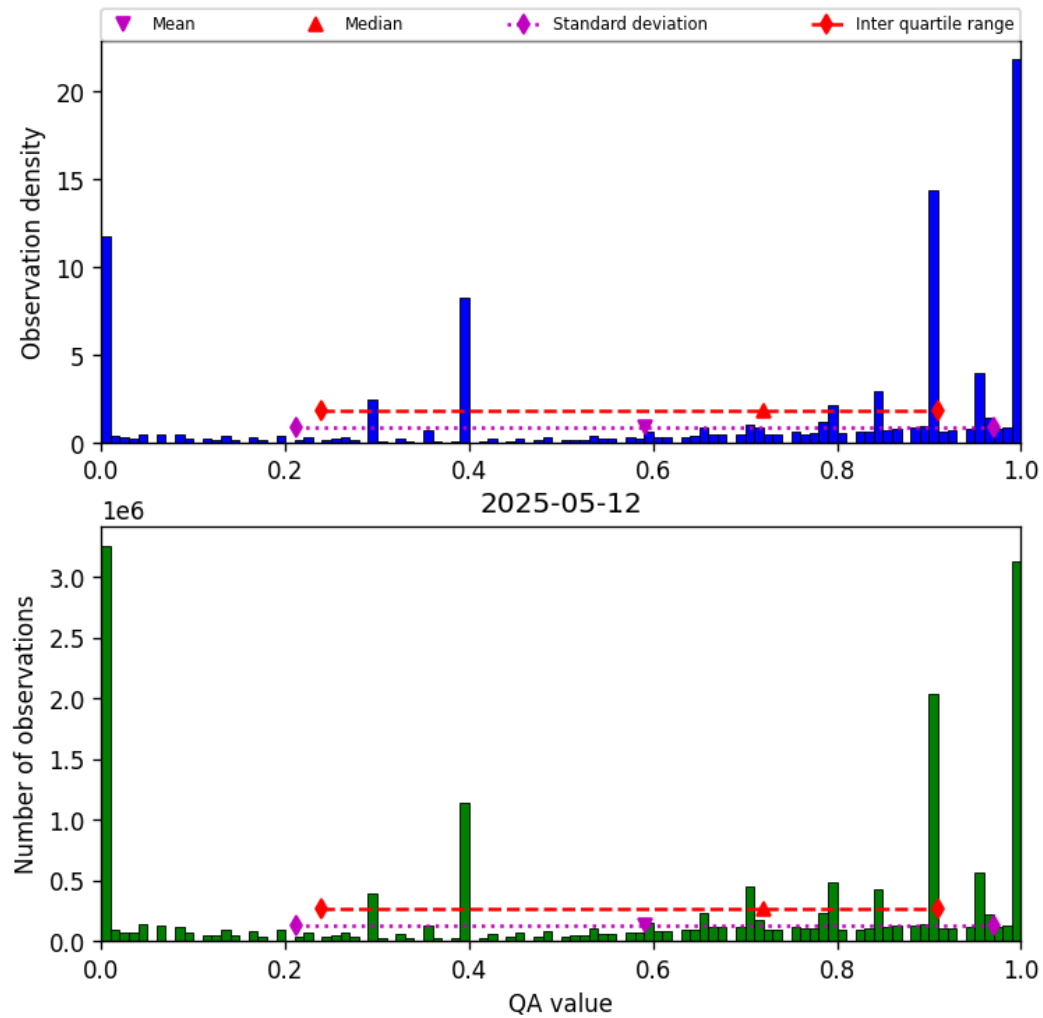


Figure 36: Histogram of “QA value” for 2025-05-12 to 2025-05-13

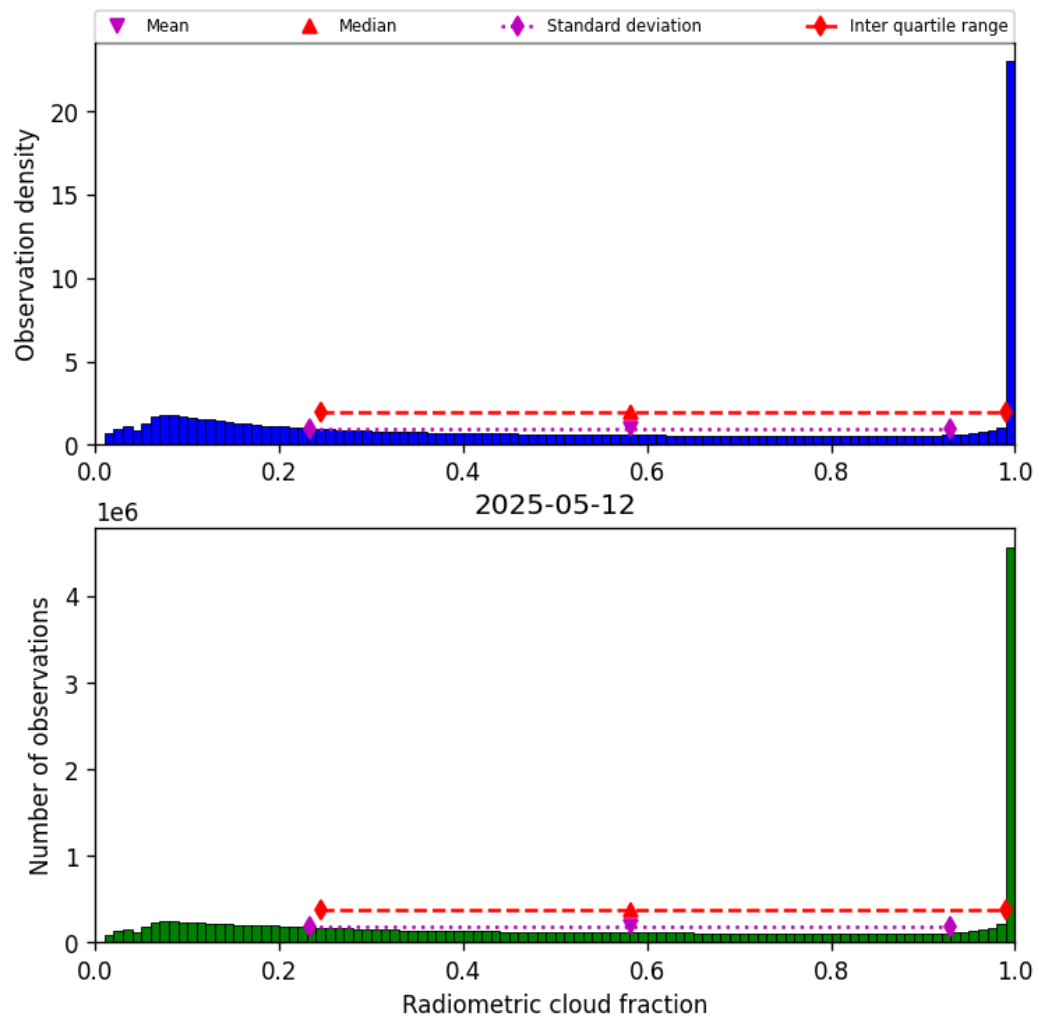


Figure 37: Histogram of “Radiometric cloud fraction” for 2025-05-12 to 2025-05-13

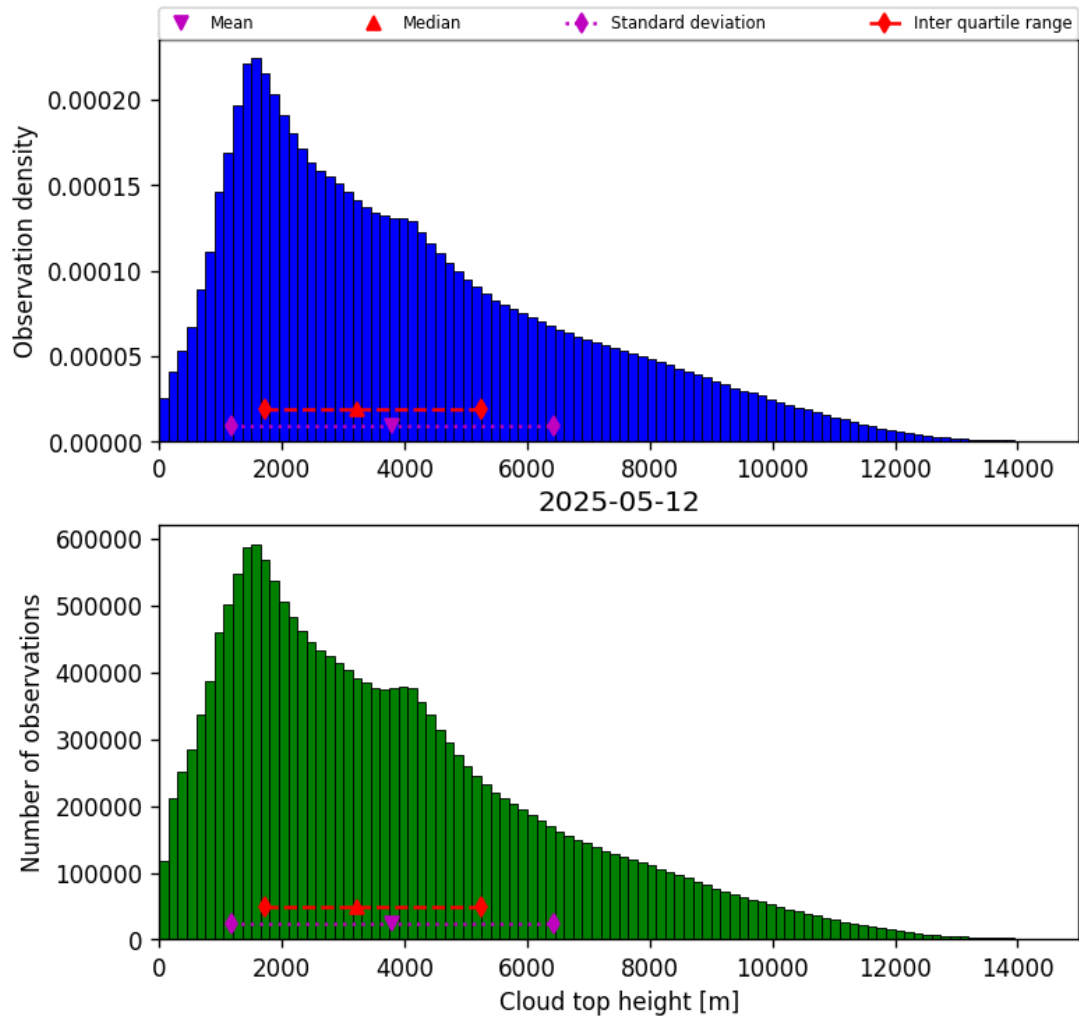


Figure 38: Histogram of “Cloud top height” for 2025-05-12 to 2025-05-13

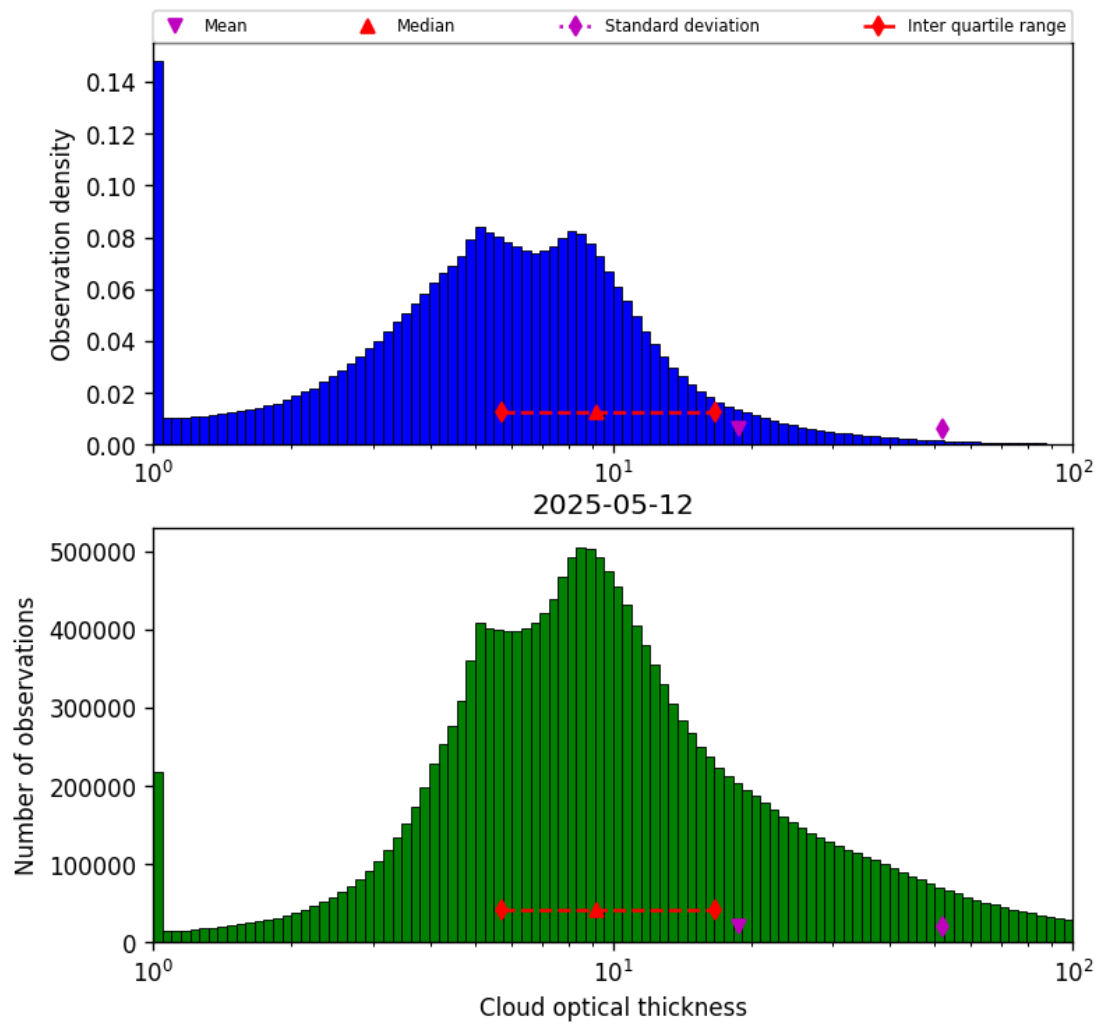


Figure 39: Histogram of “Cloud optical thickness” for 2025-05-12 to 2025-05-13

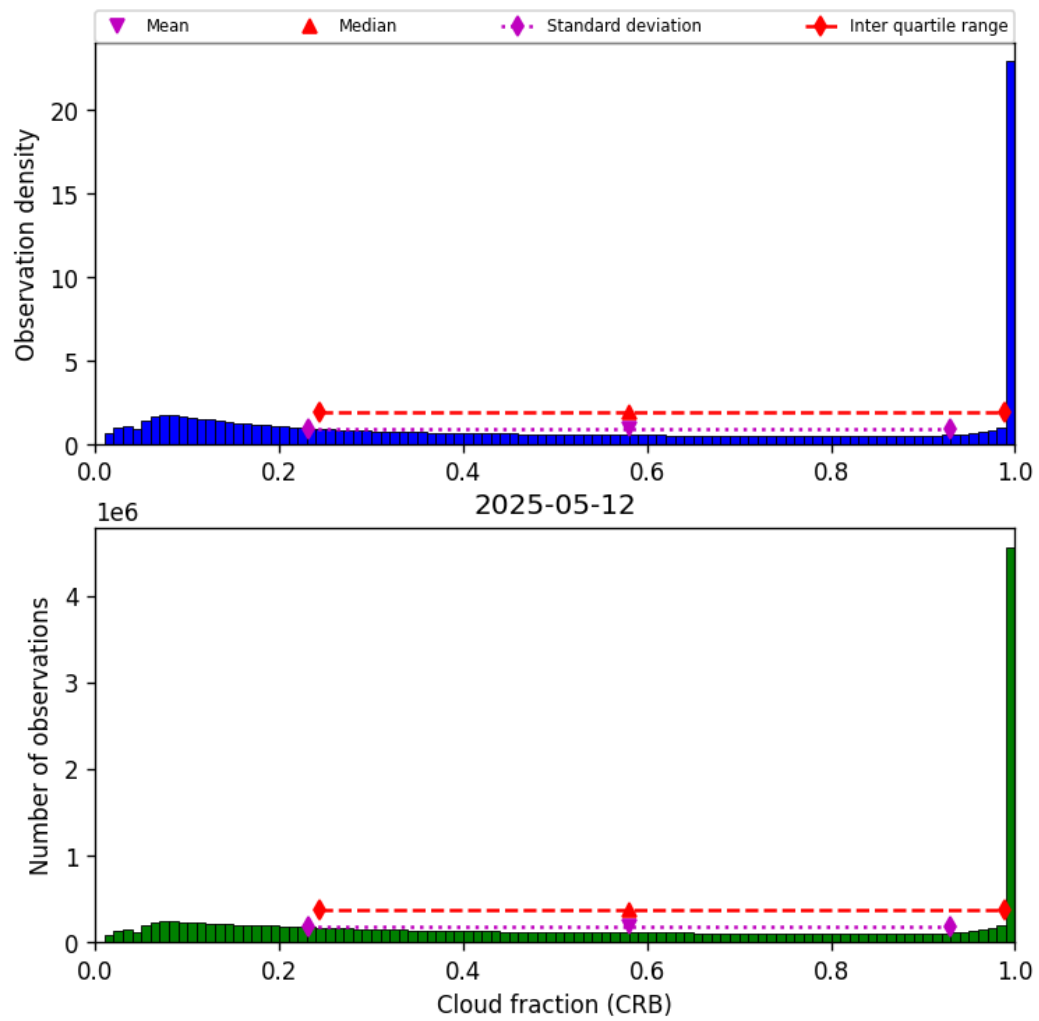


Figure 40: Histogram of “Cloud fraction (CRB)” for 2025-05-12 to 2025-05-13

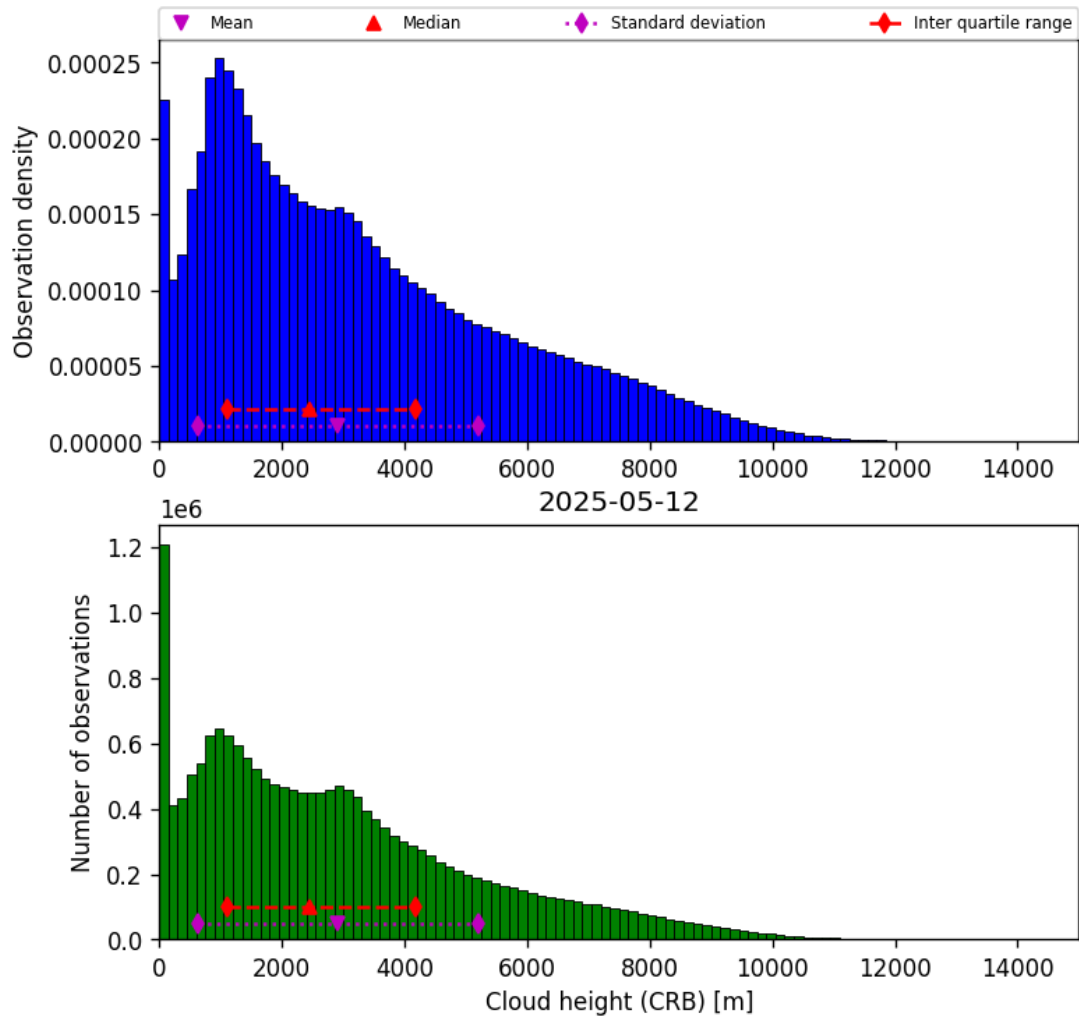


Figure 41: Histogram of “Cloud height (CRB)” for 2025-05-12 to 2025-05-13

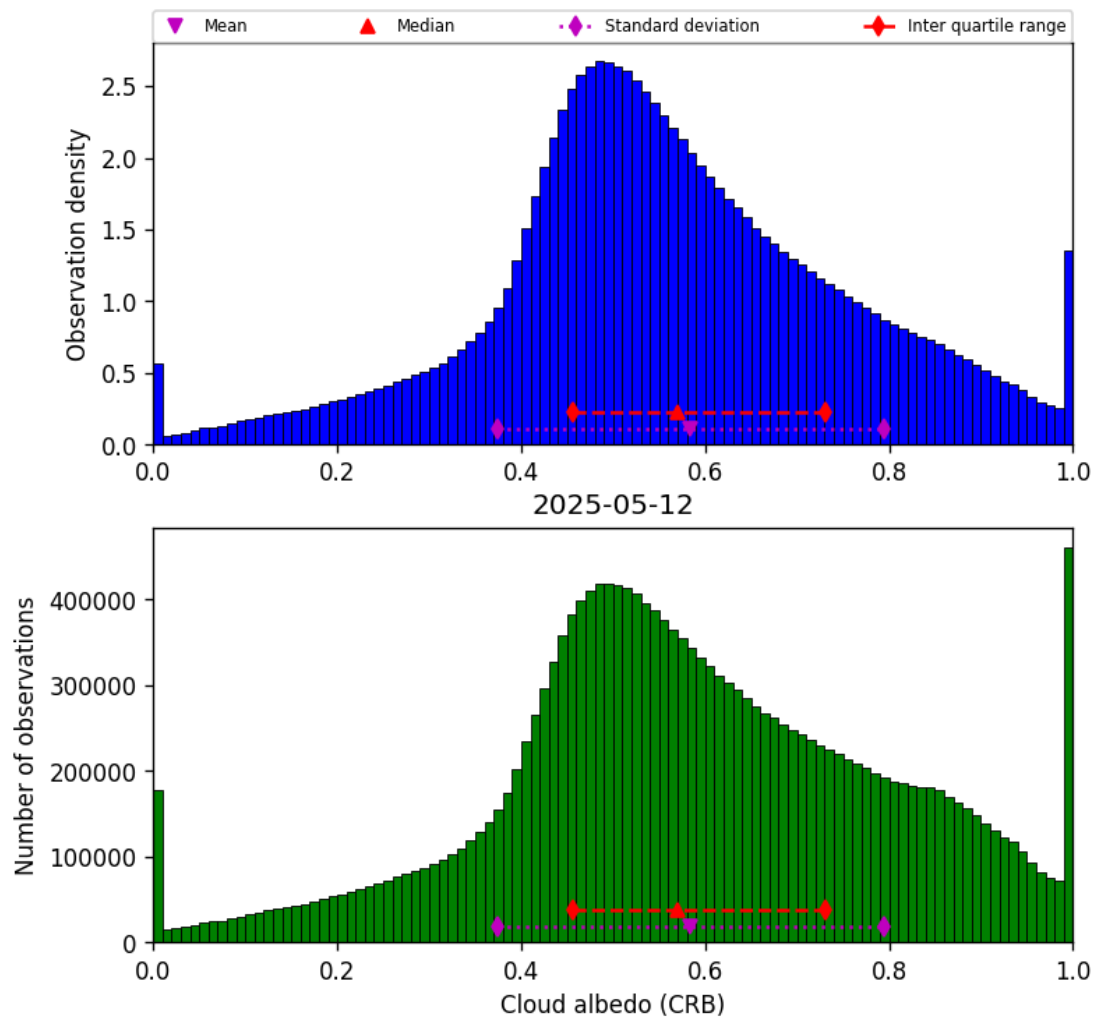


Figure 42: Histogram of “Cloud albedo (CRB)” for 2025-05-12 to 2025-05-13

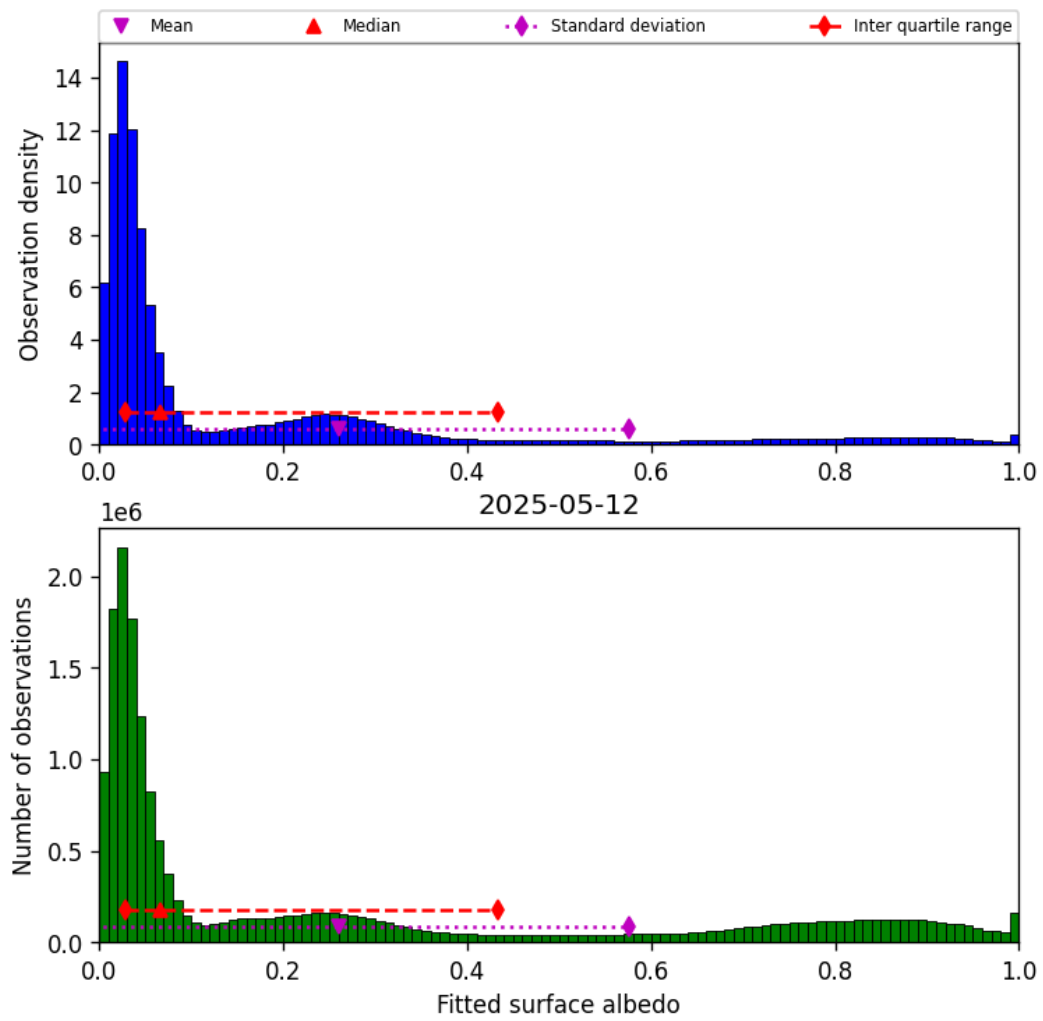


Figure 43: Histogram of “Fitted surface albedo” for 2025-05-12 to 2025-05-13

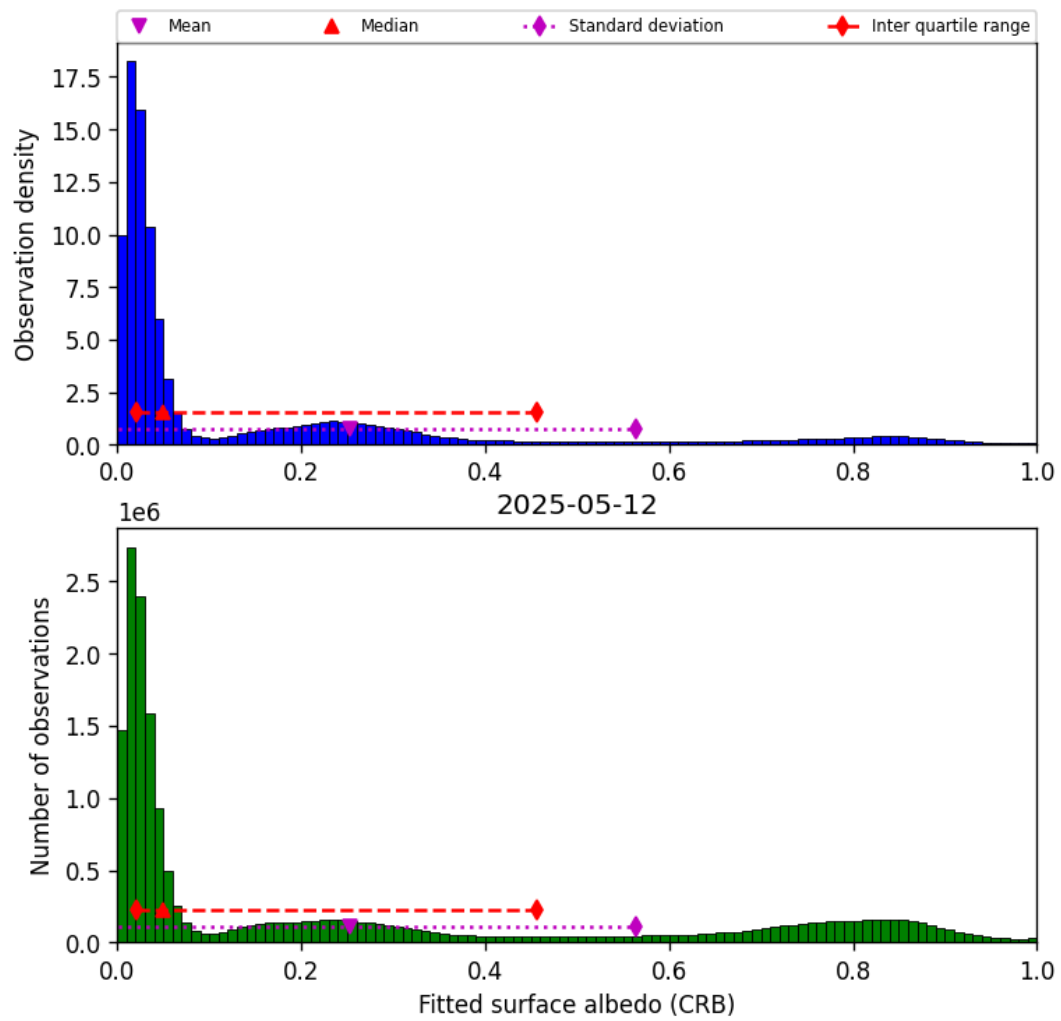


Figure 44: Histogram of “Fitted surface albedo (CRB)” for 2025-05-12 to 2025-05-13

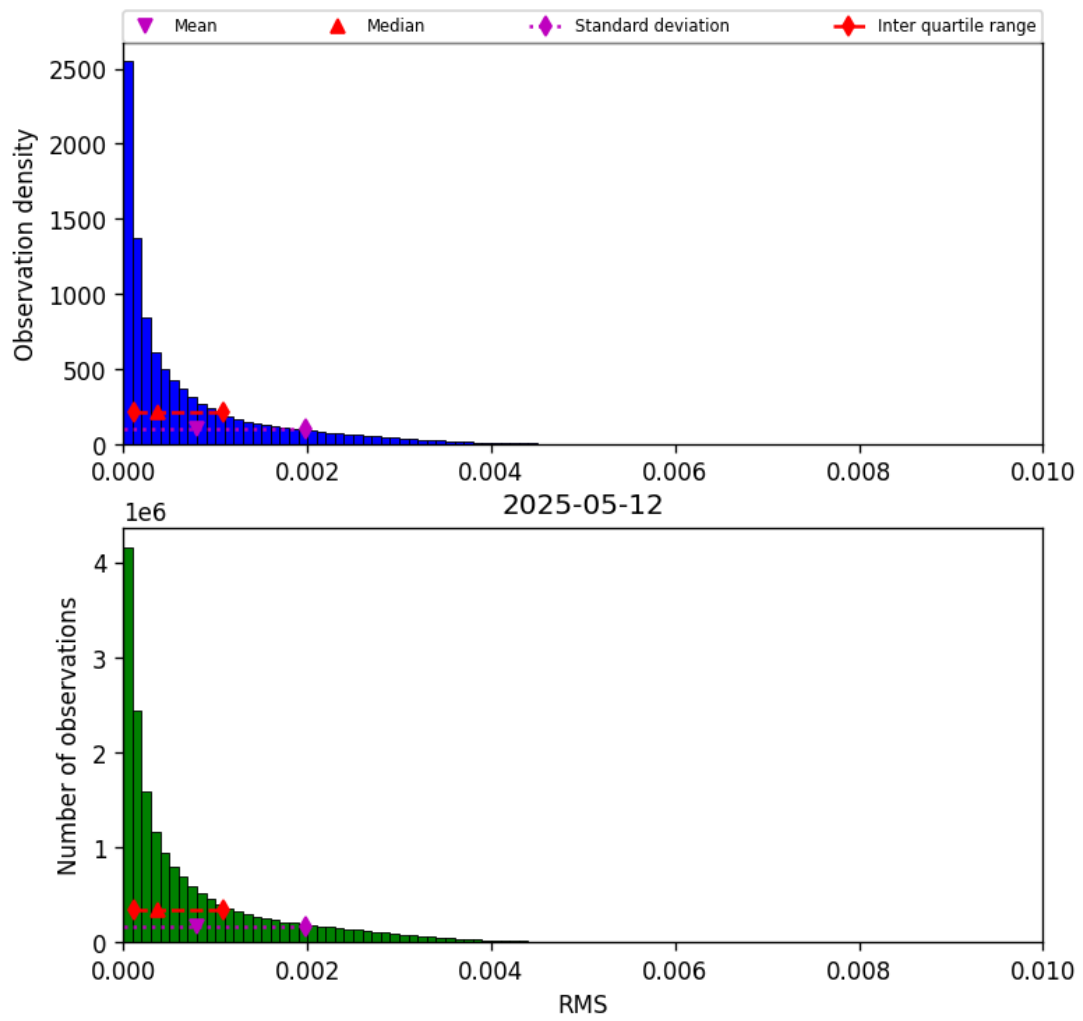


Figure 45: Histogram of “RMS” for 2025-05-12 to 2025-05-13

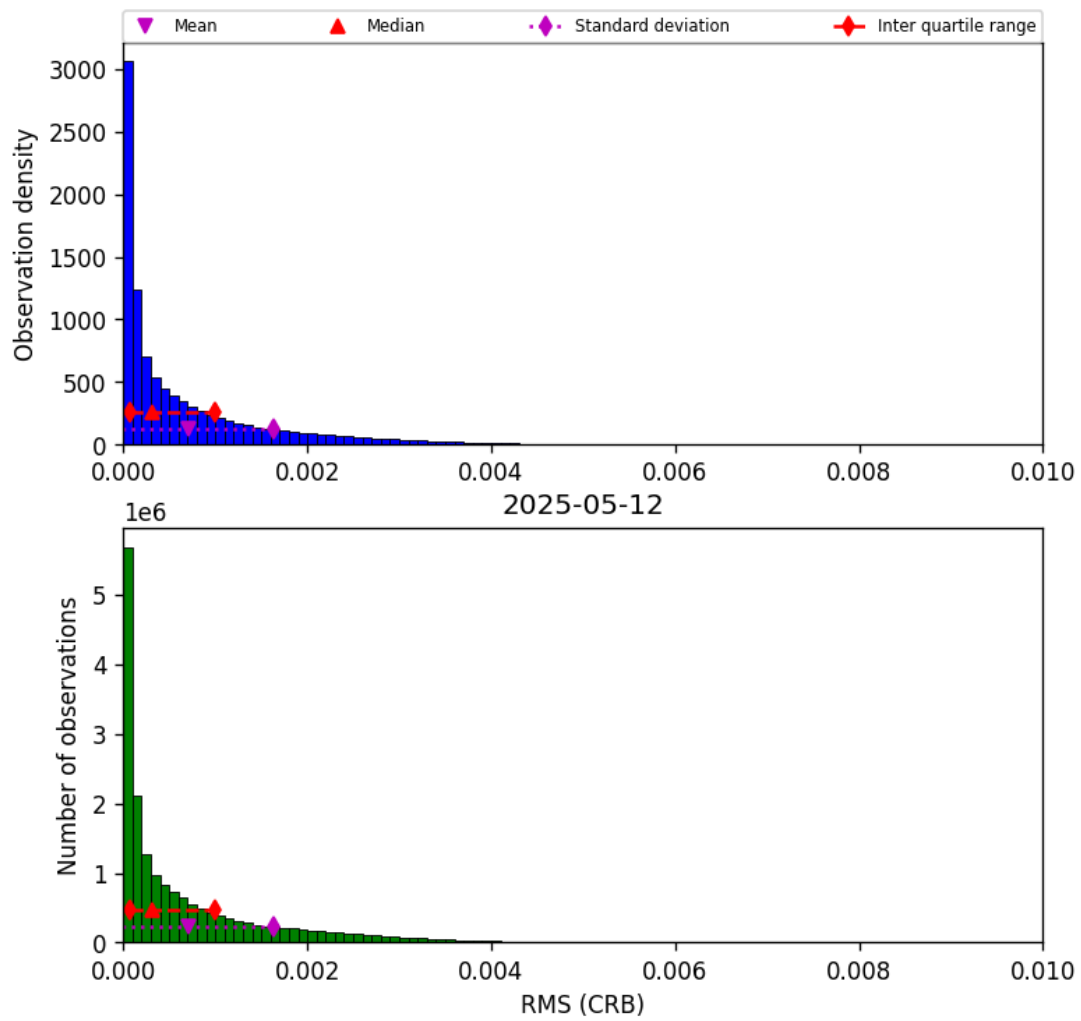


Figure 46: Histogram of “RMS (CRB)” for 2025-05-12 to 2025-05-13

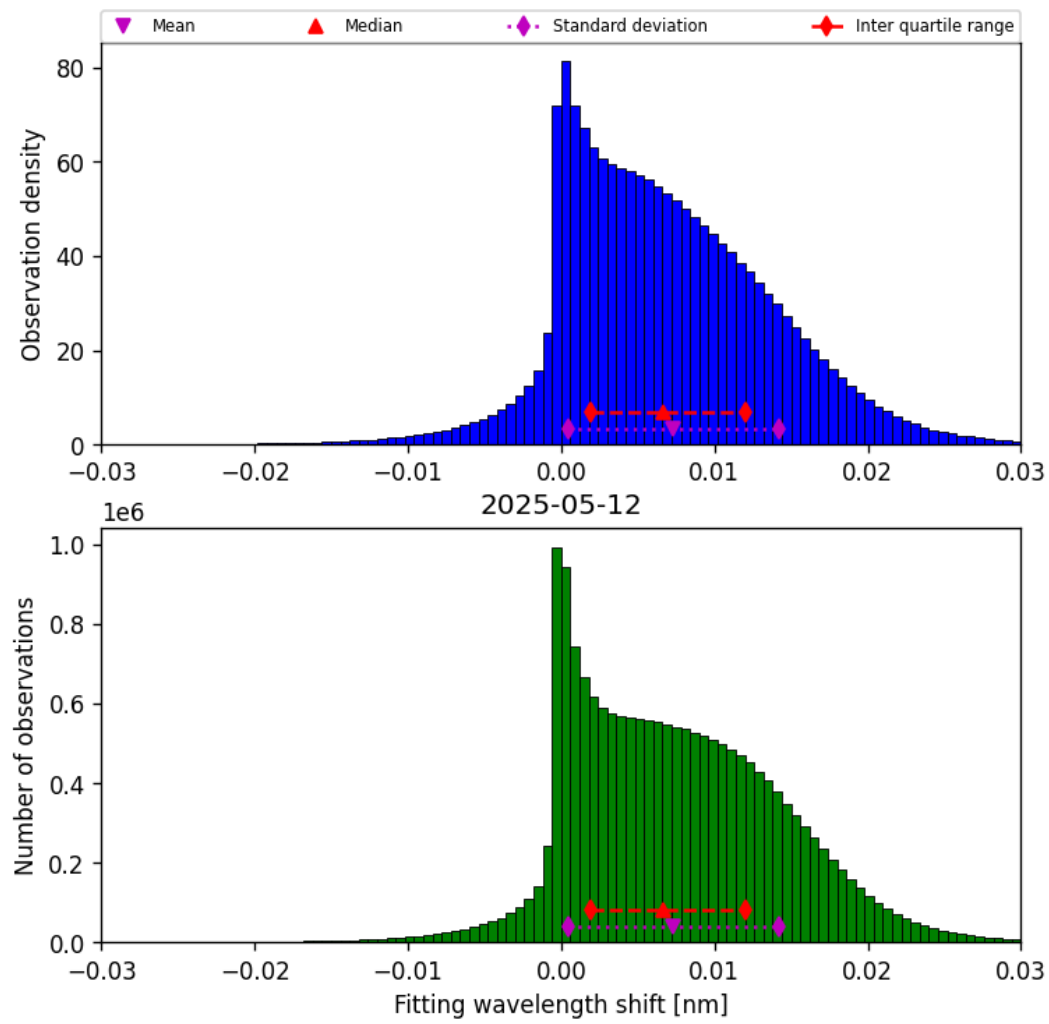


Figure 47: Histogram of “Fitting wavelength shift” for 2025-05-12 to 2025-05-13

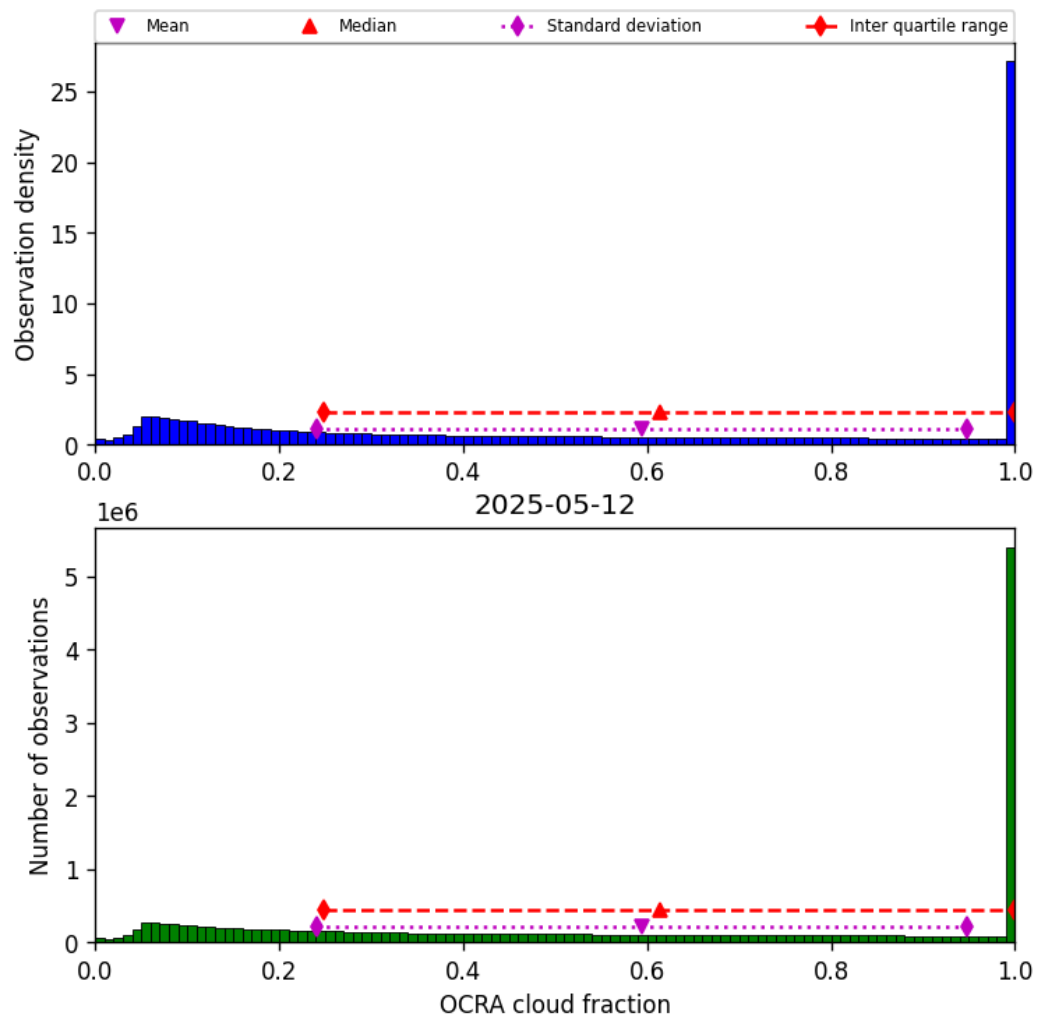


Figure 48: Histogram of “OCRA cloud fraction” for 2025-05-12 to 2025-05-13

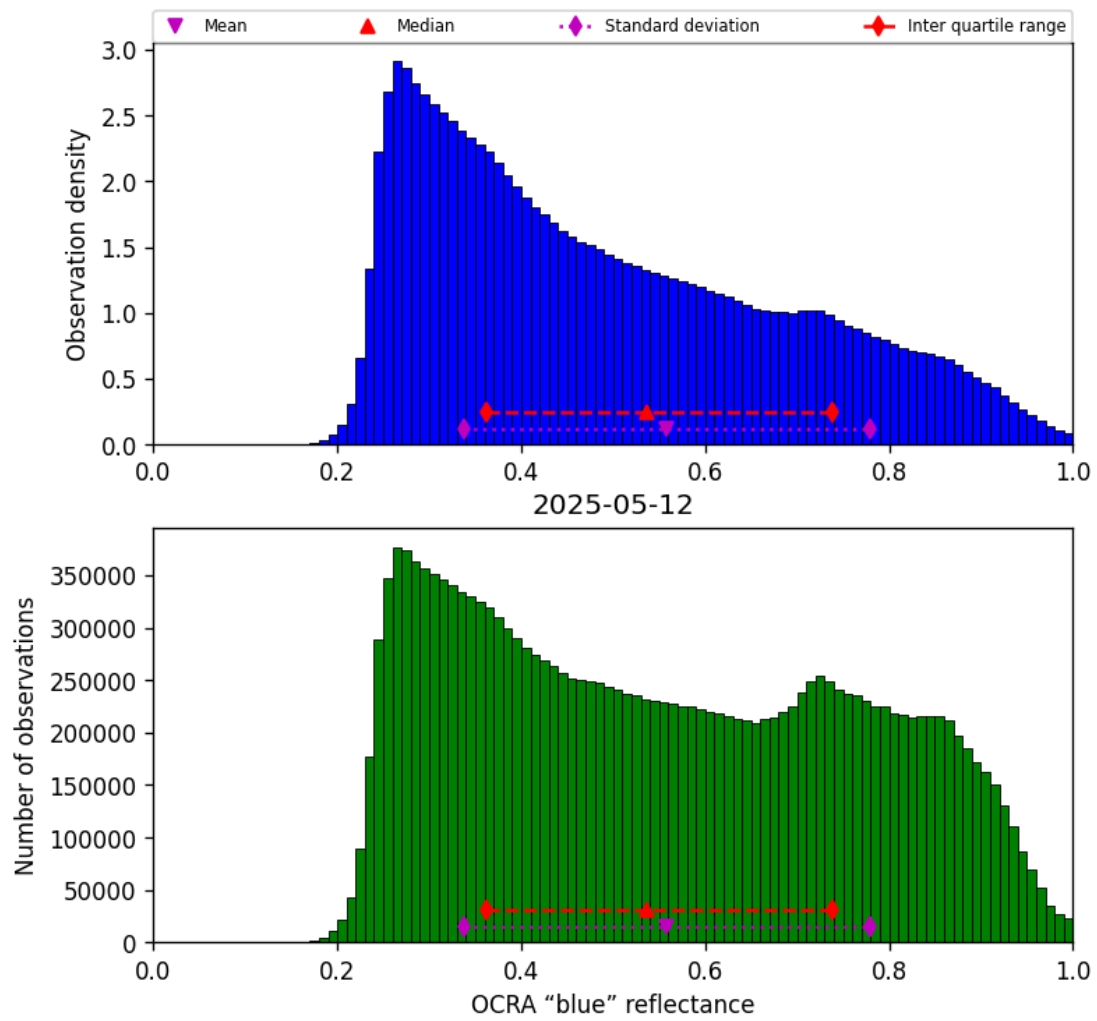


Figure 49: Histogram of “OCRA “blue” reflectance” for 2025-05-12 to 2025-05-13

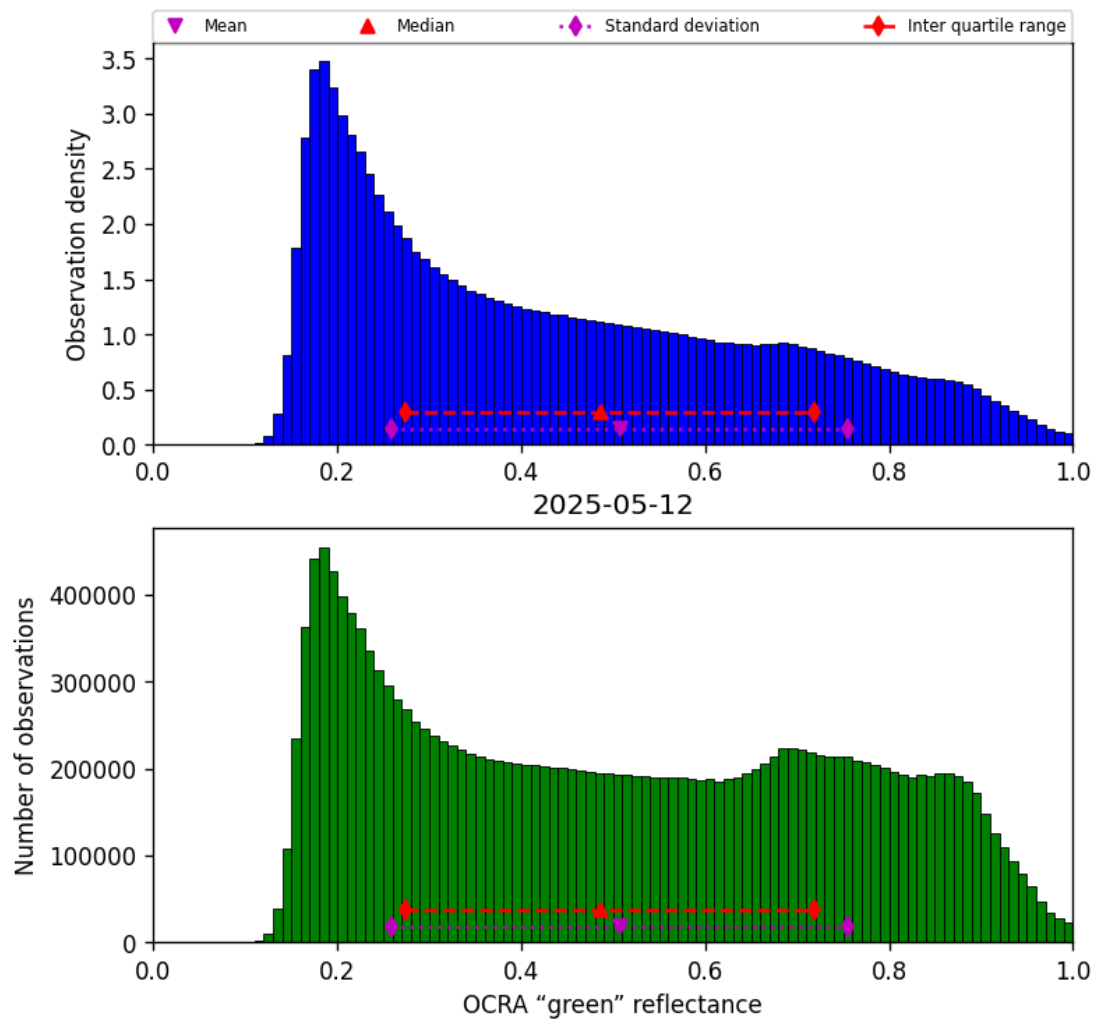


Figure 50: Histogram of “OCRA “green” reflectance” for 2025-05-12 to 2025-05-13

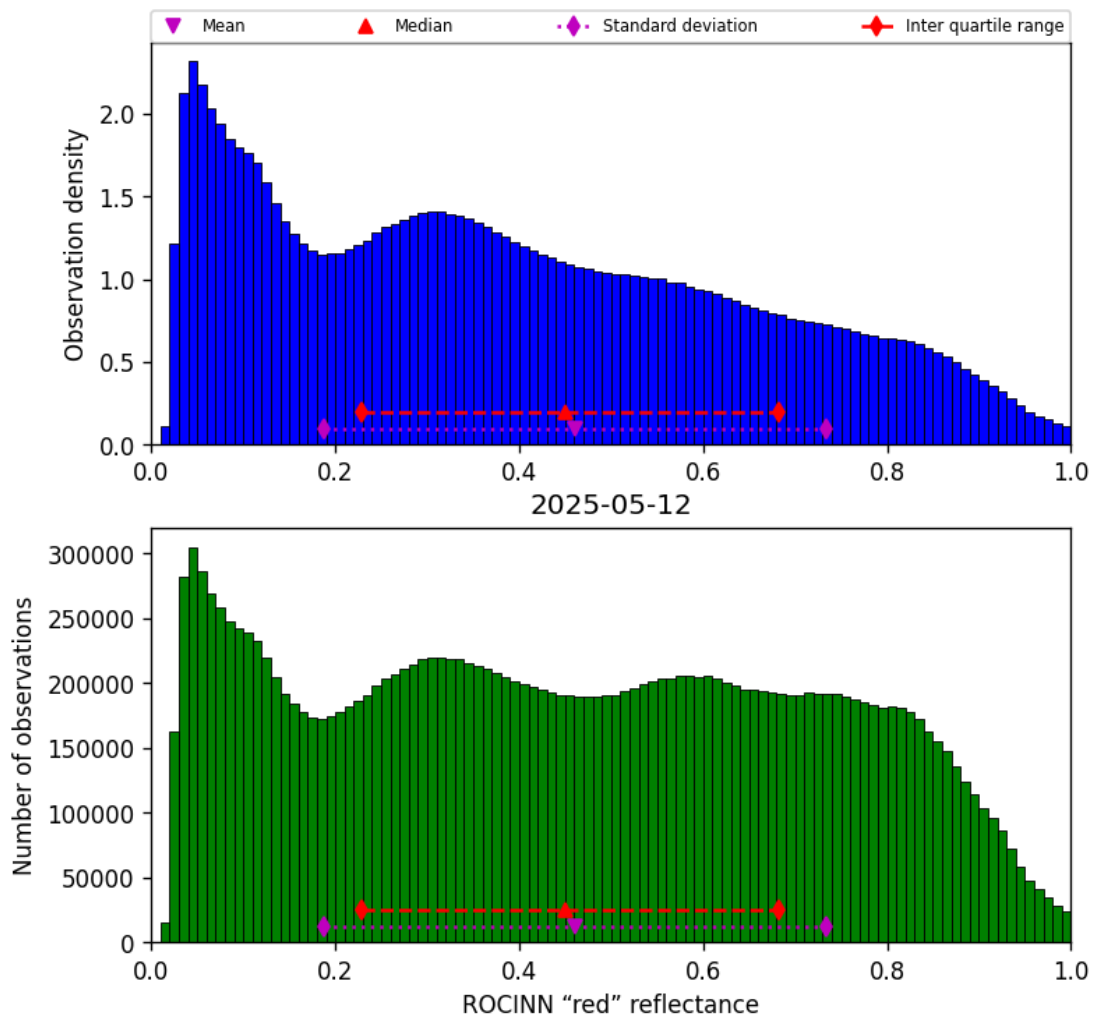


Figure 51: Histogram of “ROCINN “red” reflectance” for 2025-05-12 to 2025-05-13

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.

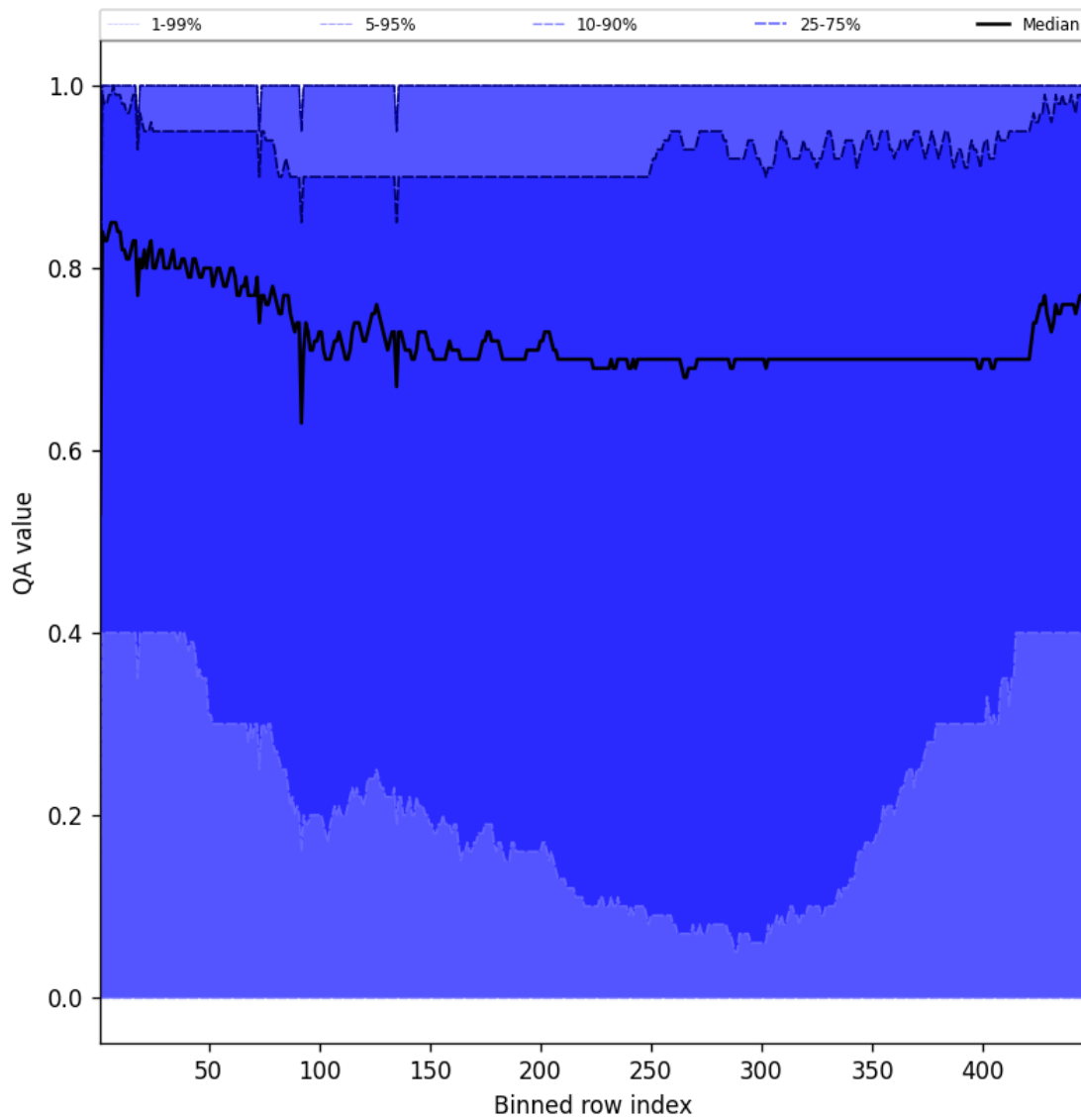


Figure 52: Along track statistics of “QA value” for 2025-05-12 to 2025-05-13

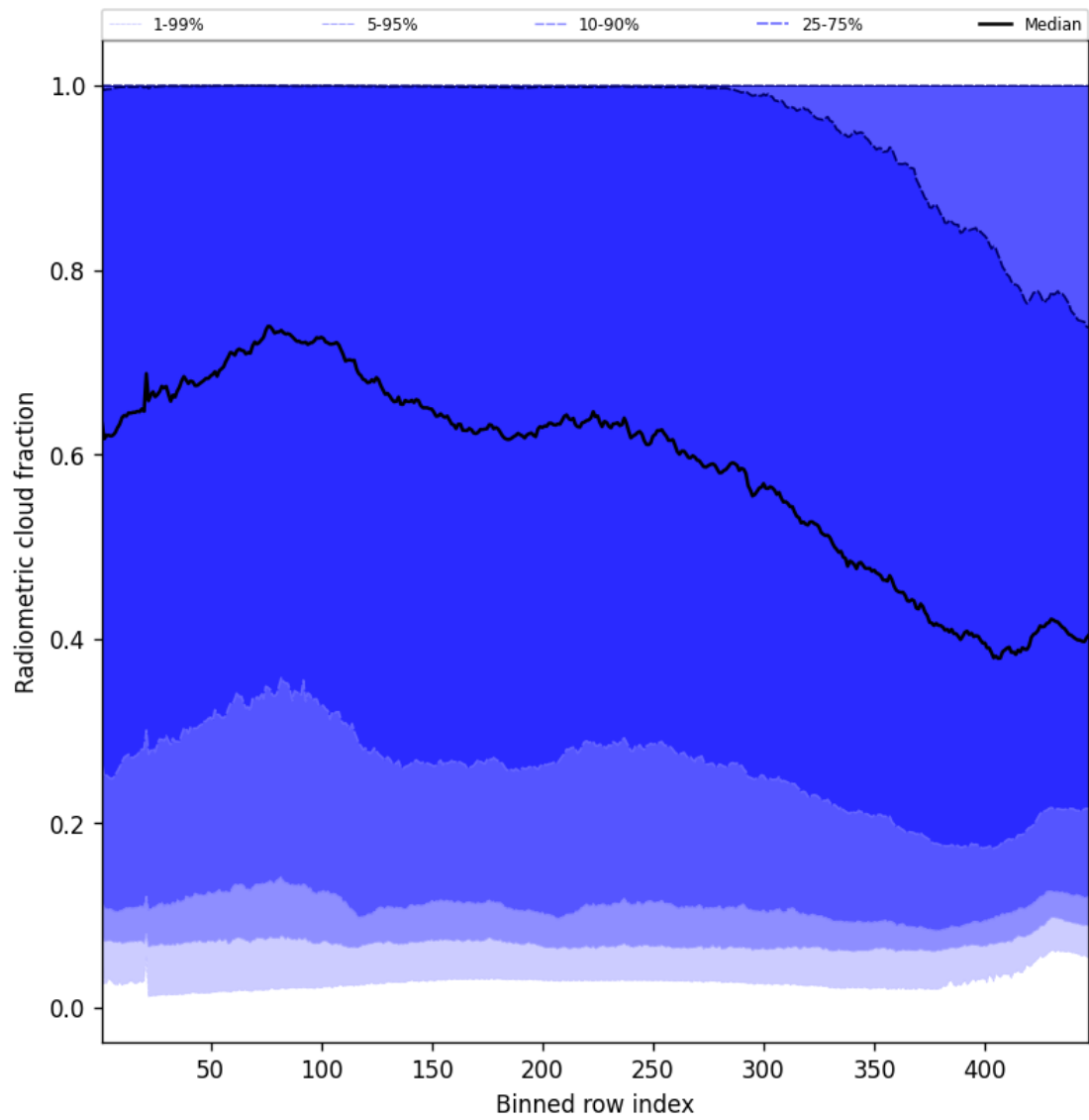


Figure 53: Along track statistics of “Radiometric cloud fraction” for 2025-05-12 to 2025-05-13

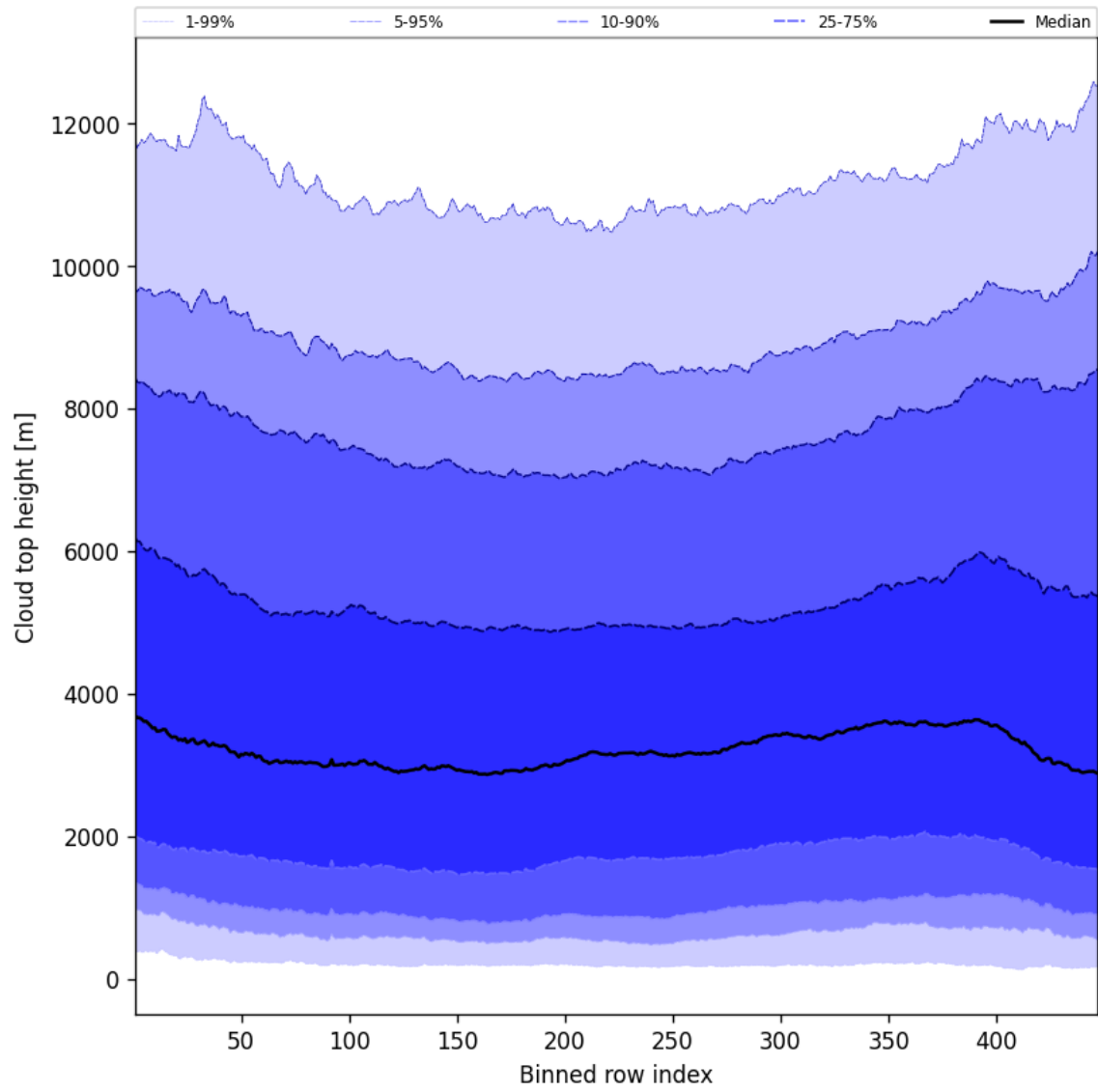


Figure 54: Along track statistics of “Cloud top height” for 2025-05-12 to 2025-05-13

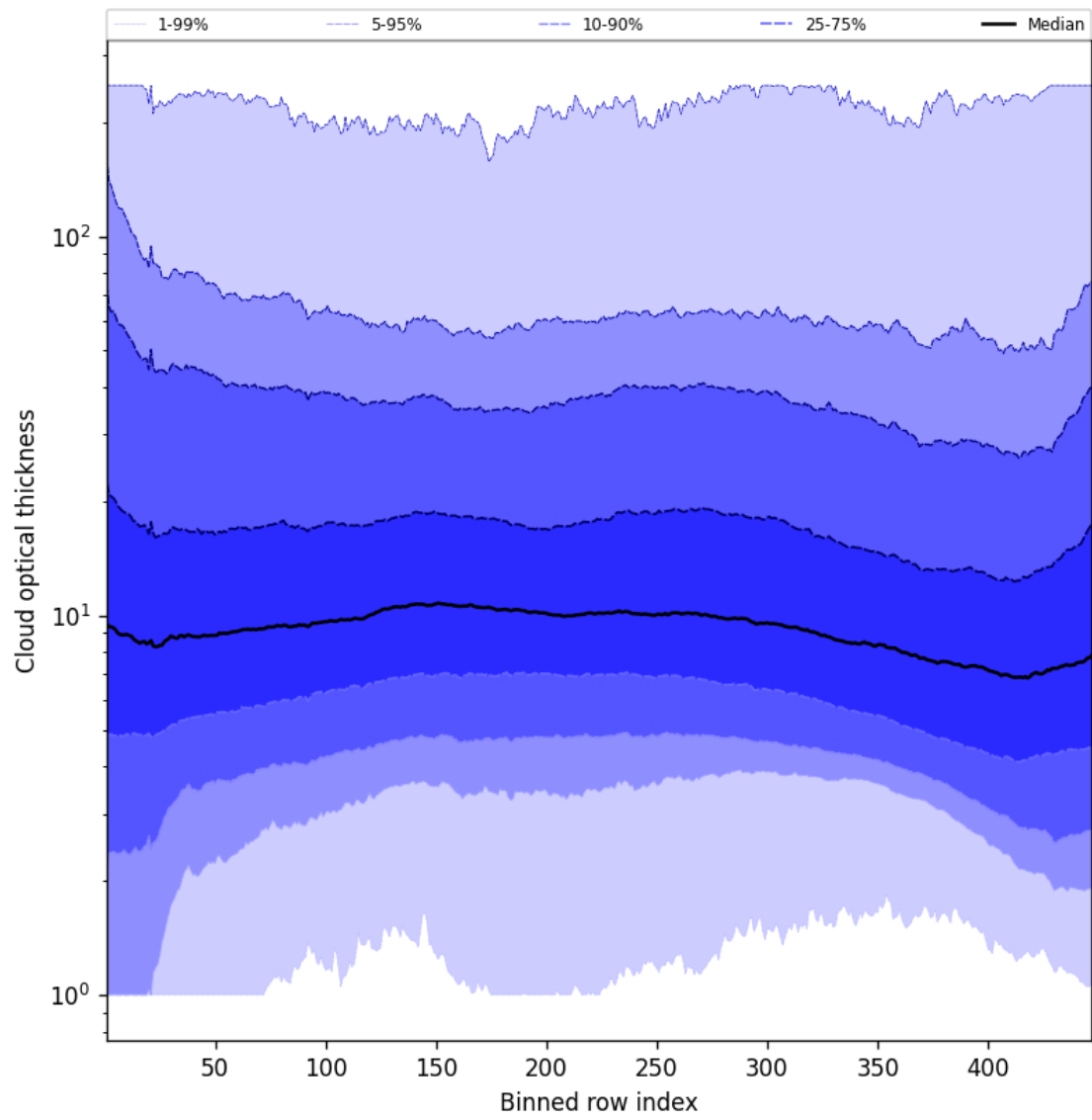


Figure 55: Along track statistics of “Cloud optical thickness” for 2025-05-12 to 2025-05-13

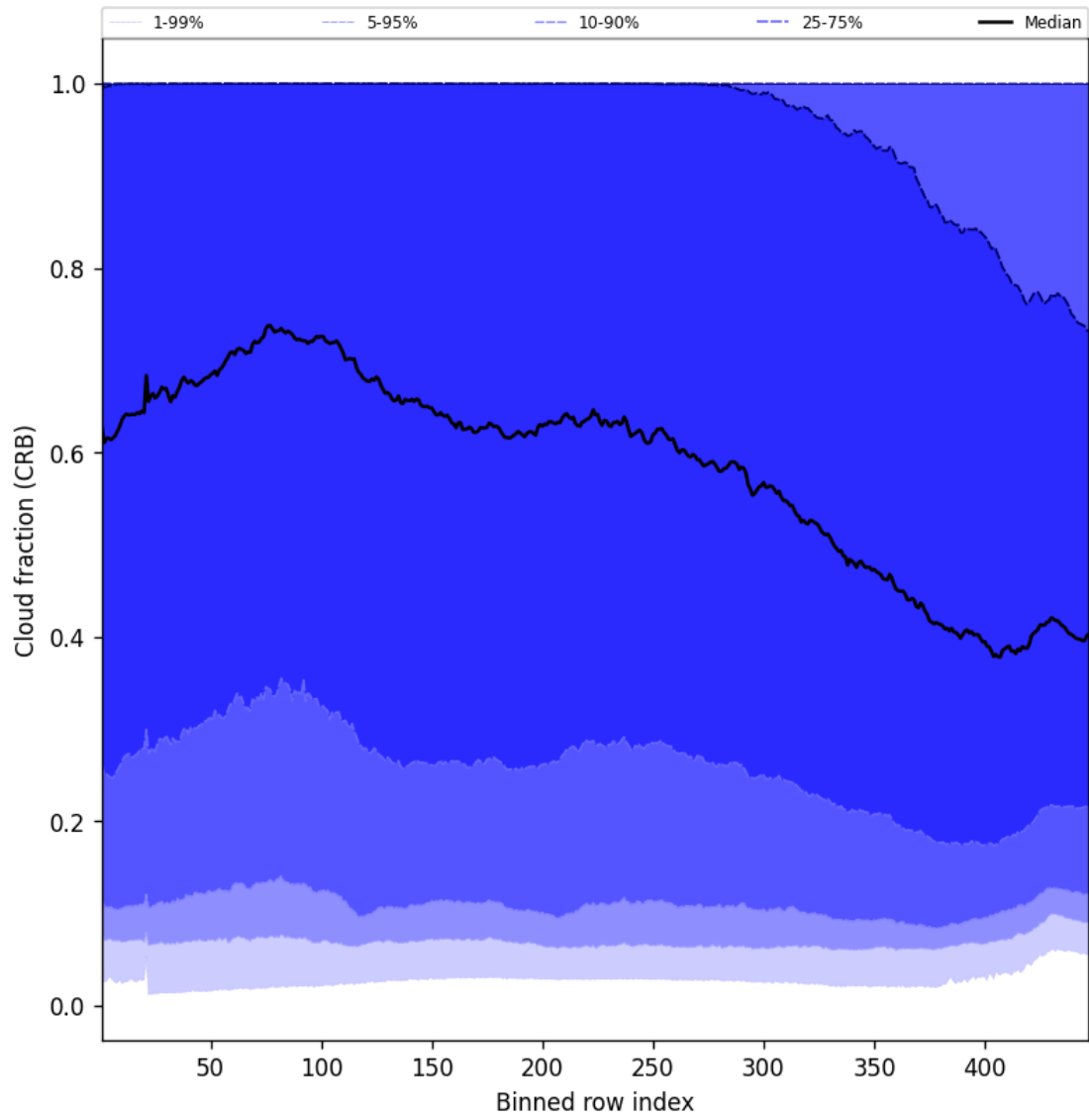


Figure 56: Along track statistics of “Cloud fraction (CRB)” for 2025-05-12 to 2025-05-13

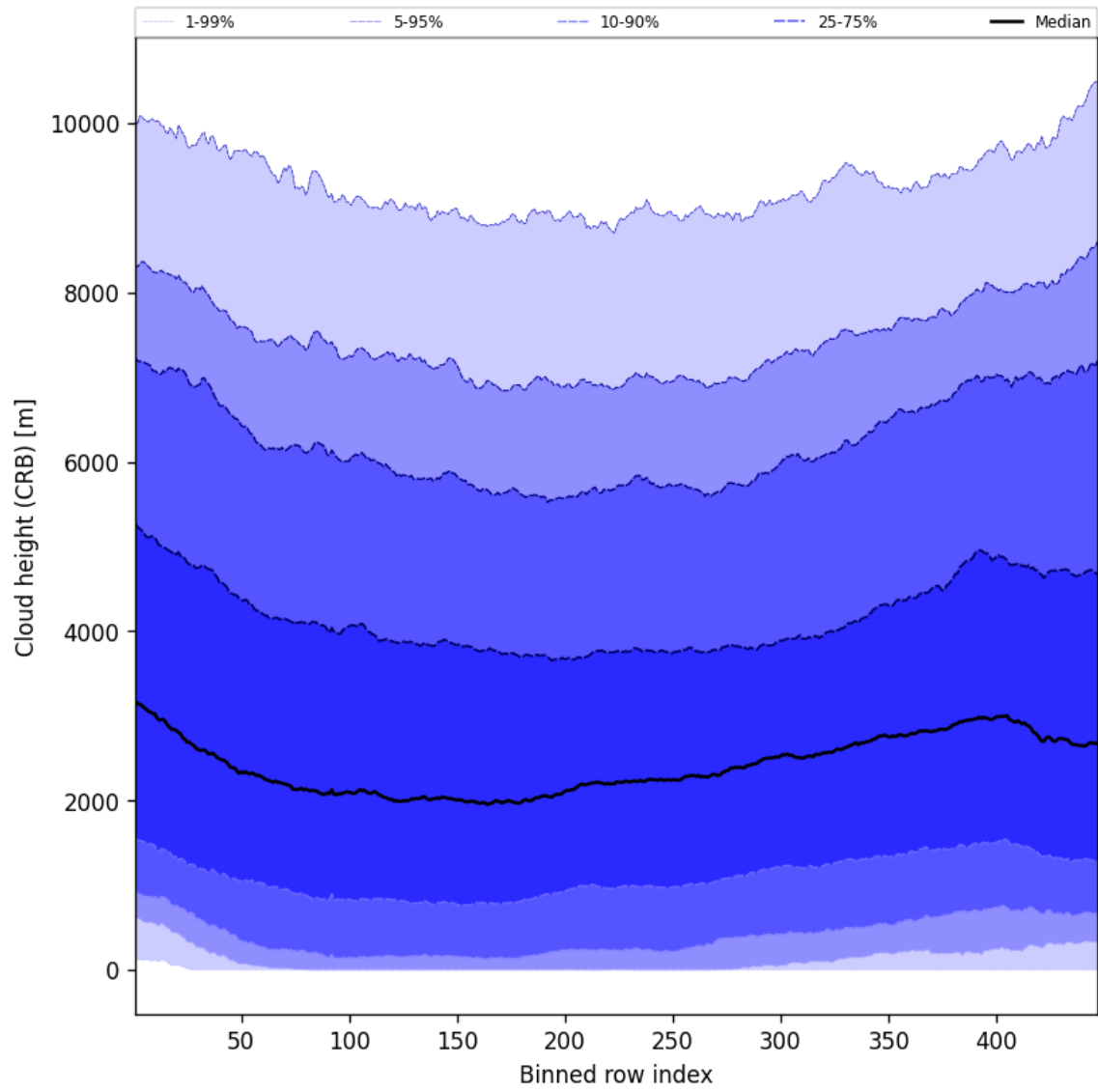


Figure 57: Along track statistics of “Cloud height (CRB)” for 2025-05-12 to 2025-05-13

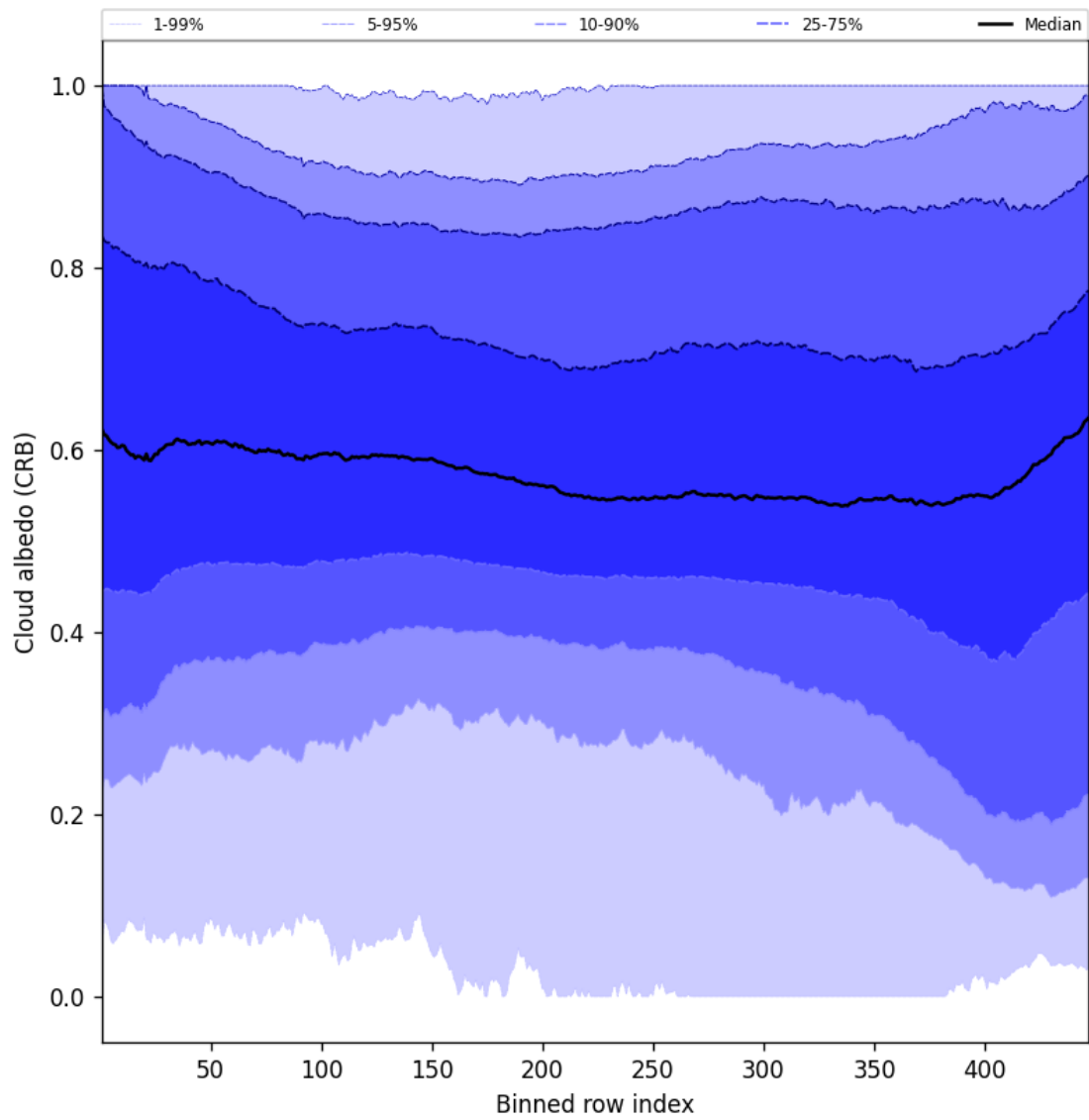


Figure 58: Along track statistics of “Cloud albedo (CRB)” for 2025-05-12 to 2025-05-13

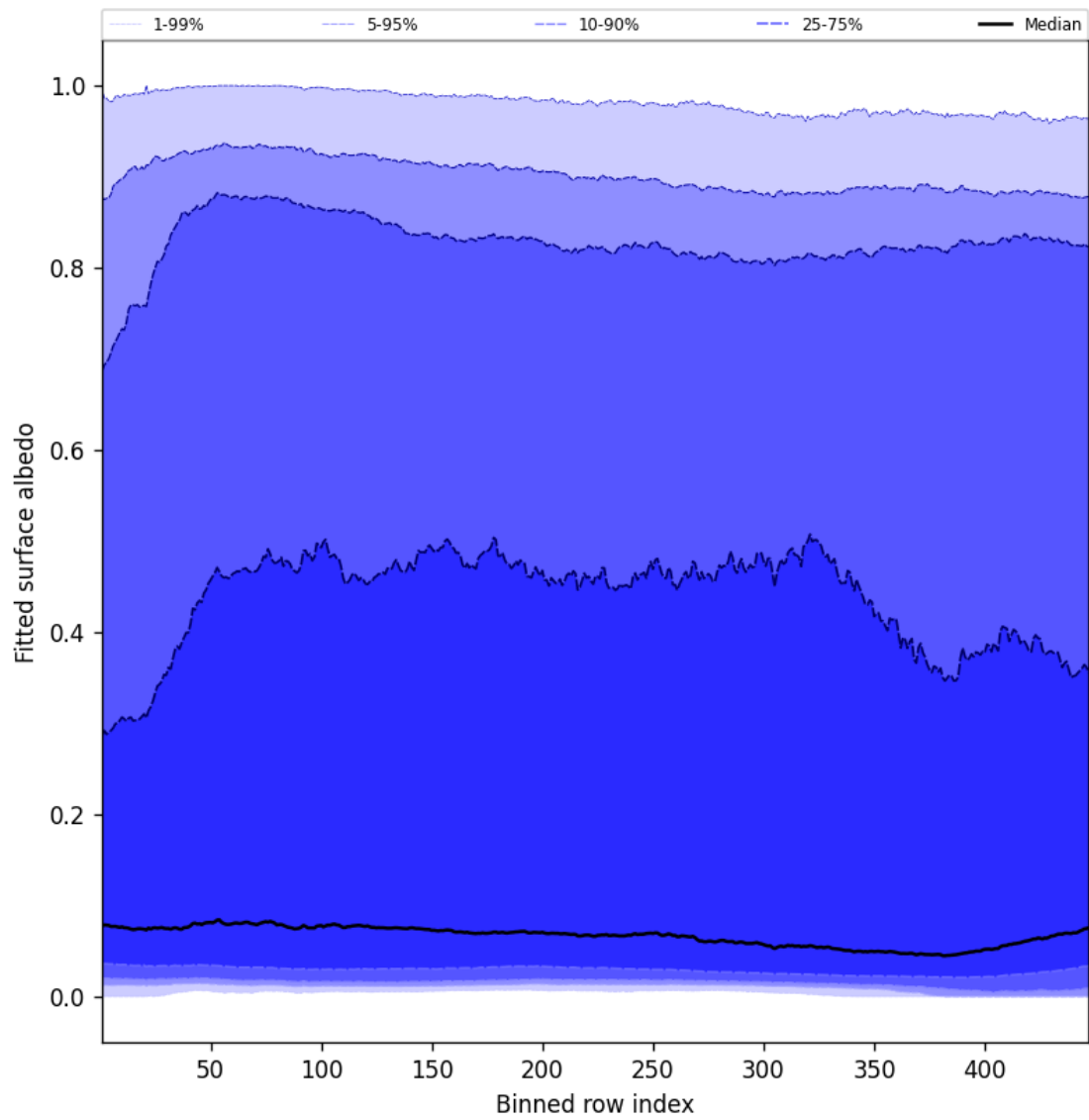


Figure 59: Along track statistics of “Fitted surface albedo” for 2025-05-12 to 2025-05-13

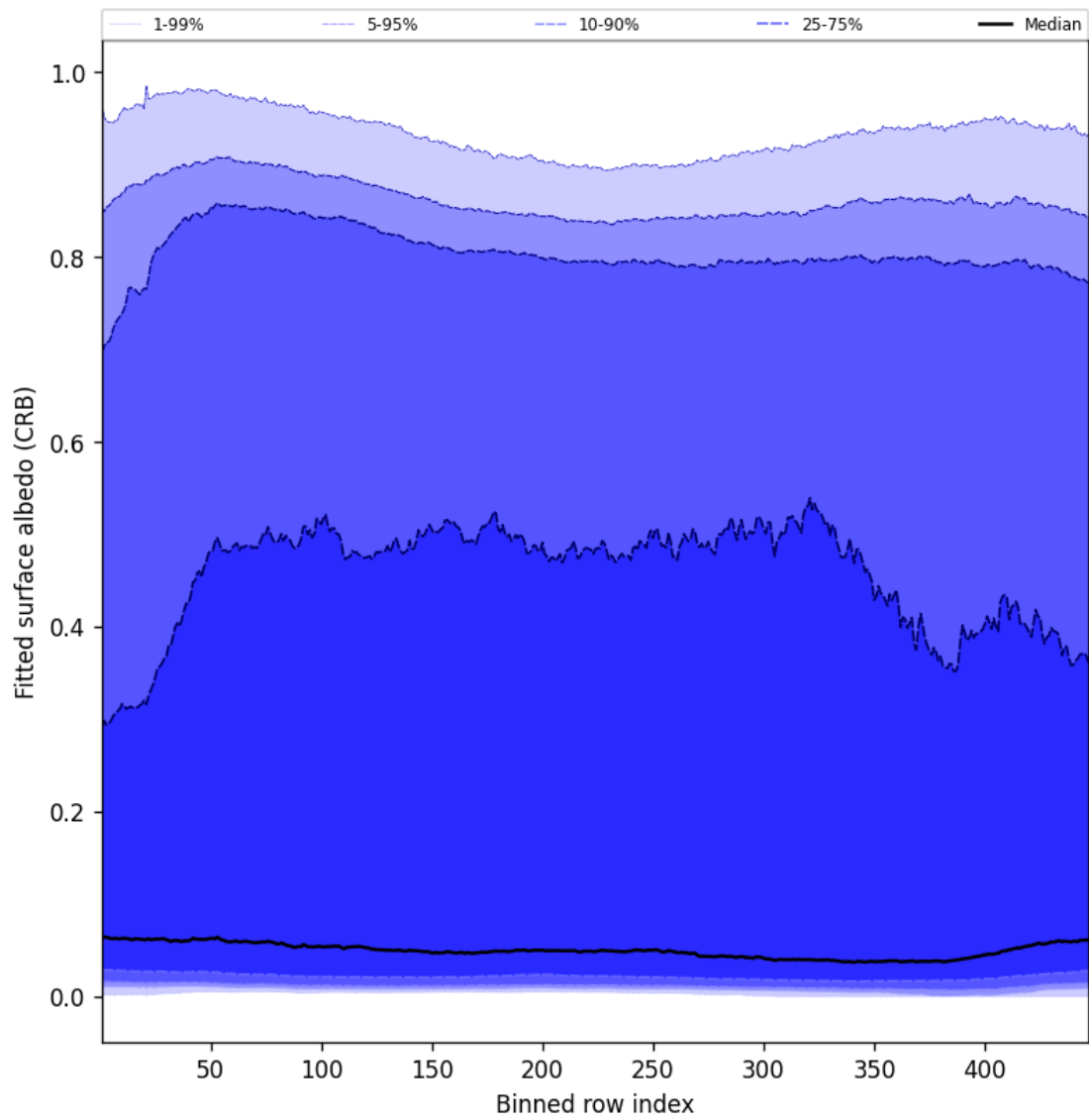


Figure 60: Along track statistics of “Fitted surface albedo (CRB)” for 2025-05-12 to 2025-05-13

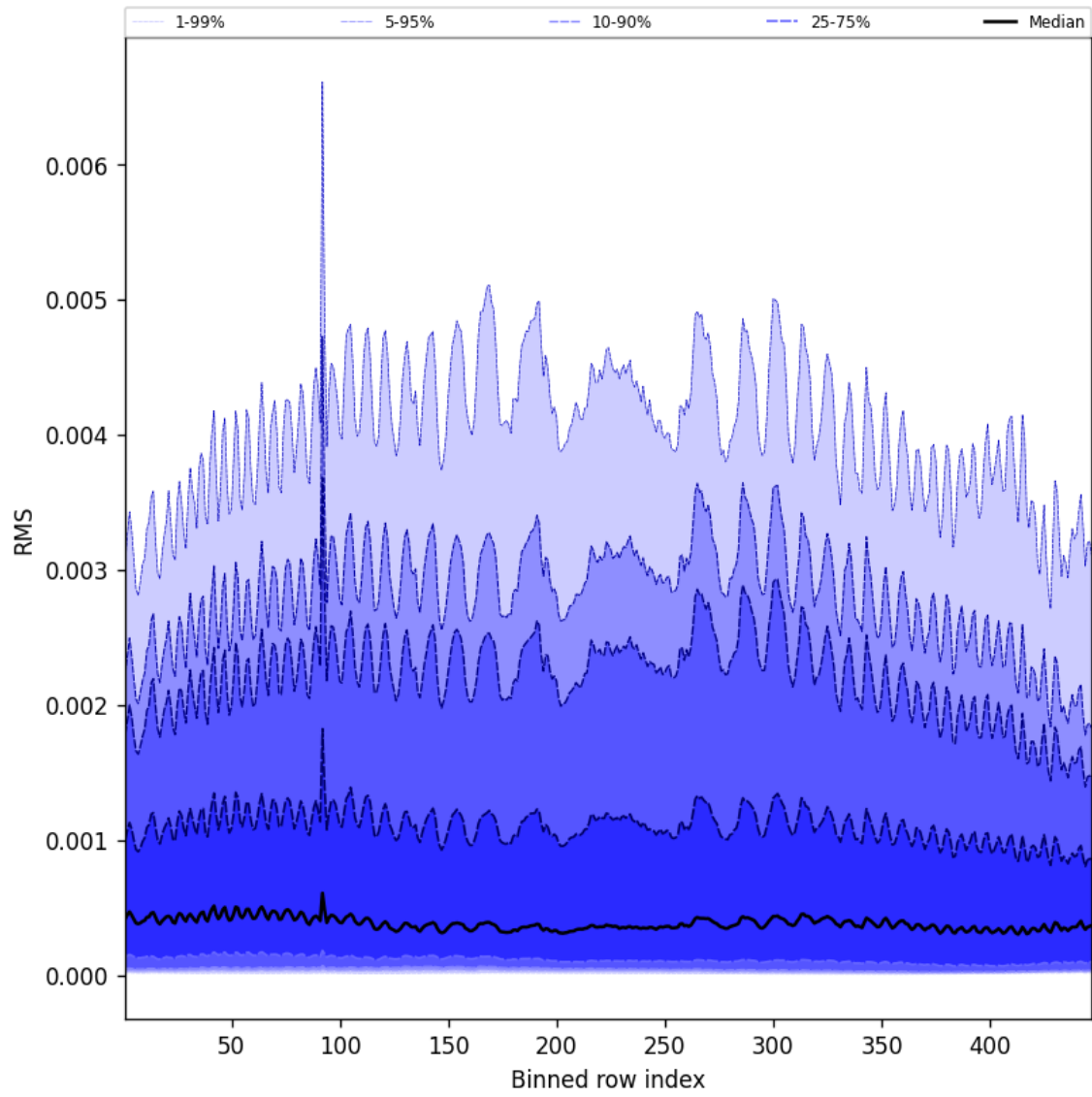


Figure 61: Along track statistics of “RMS” for 2025-05-12 to 2025-05-13

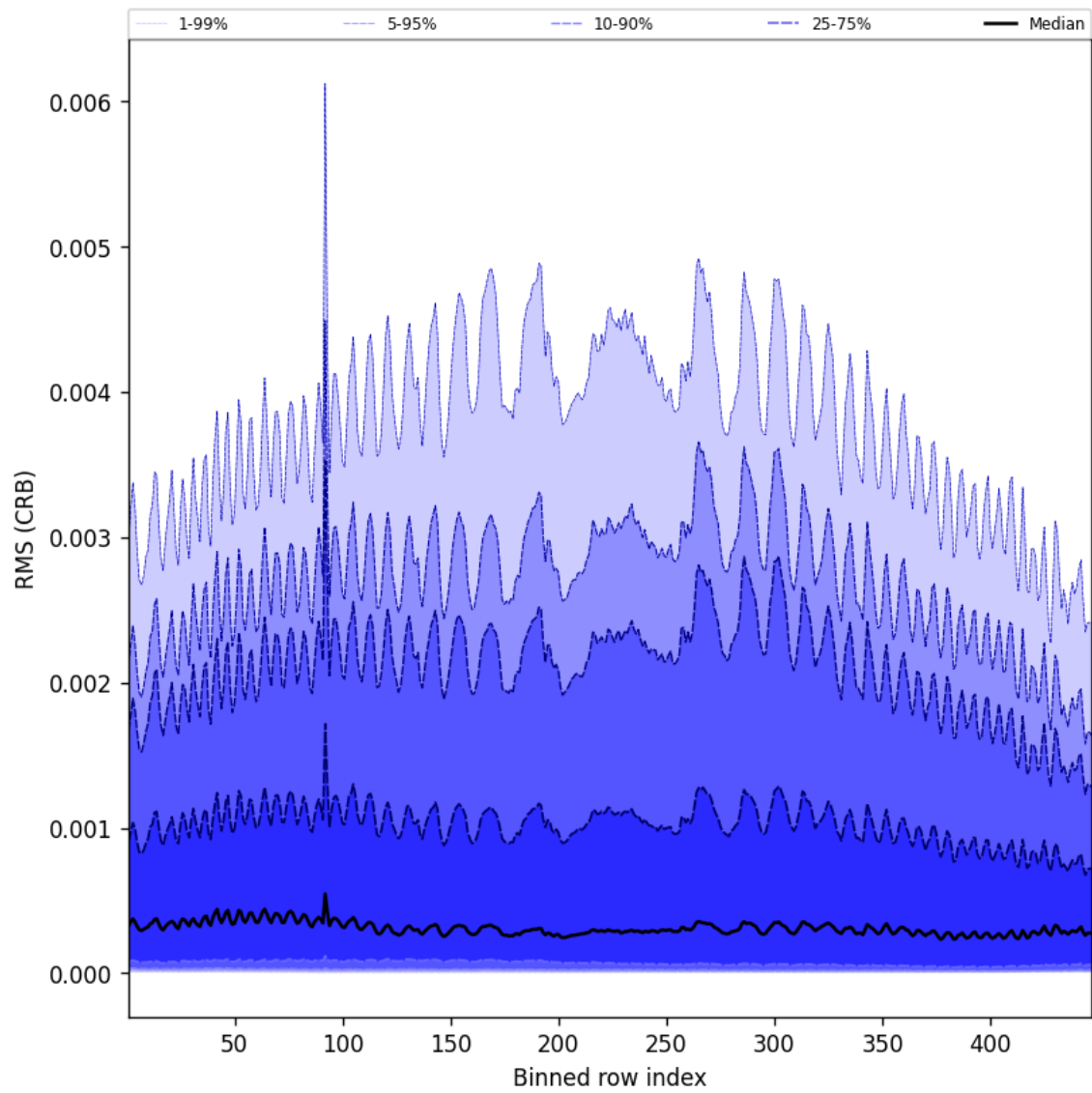


Figure 62: Along track statistics of “RMS (CRB)” for 2025-05-12 to 2025-05-13

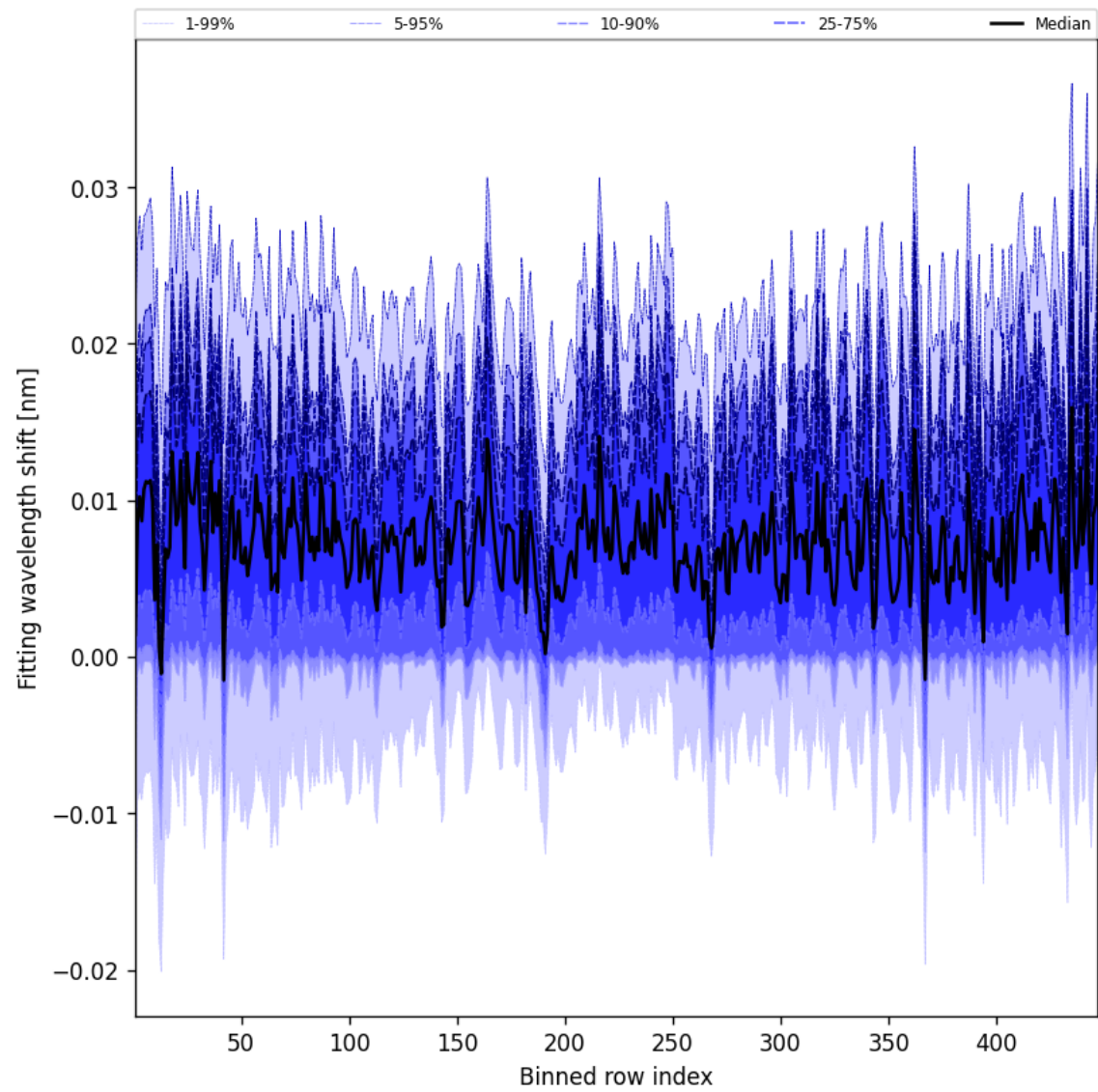


Figure 63: Along track statistics of “Fitting wavelength shift” for 2025-05-12 to 2025-05-13

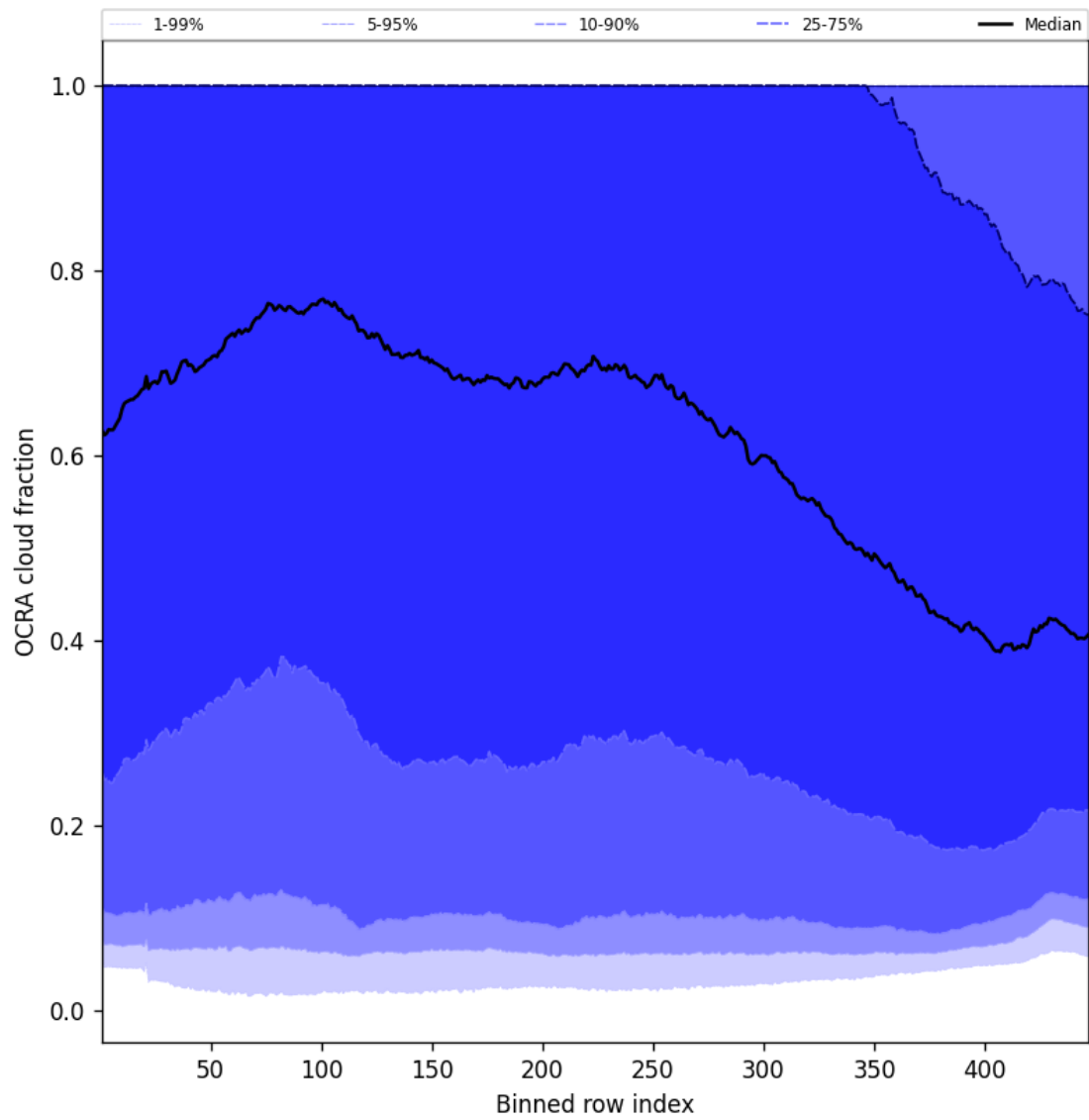


Figure 64: Along track statistics of “OCRA cloud fraction” for 2025-05-12 to 2025-05-13

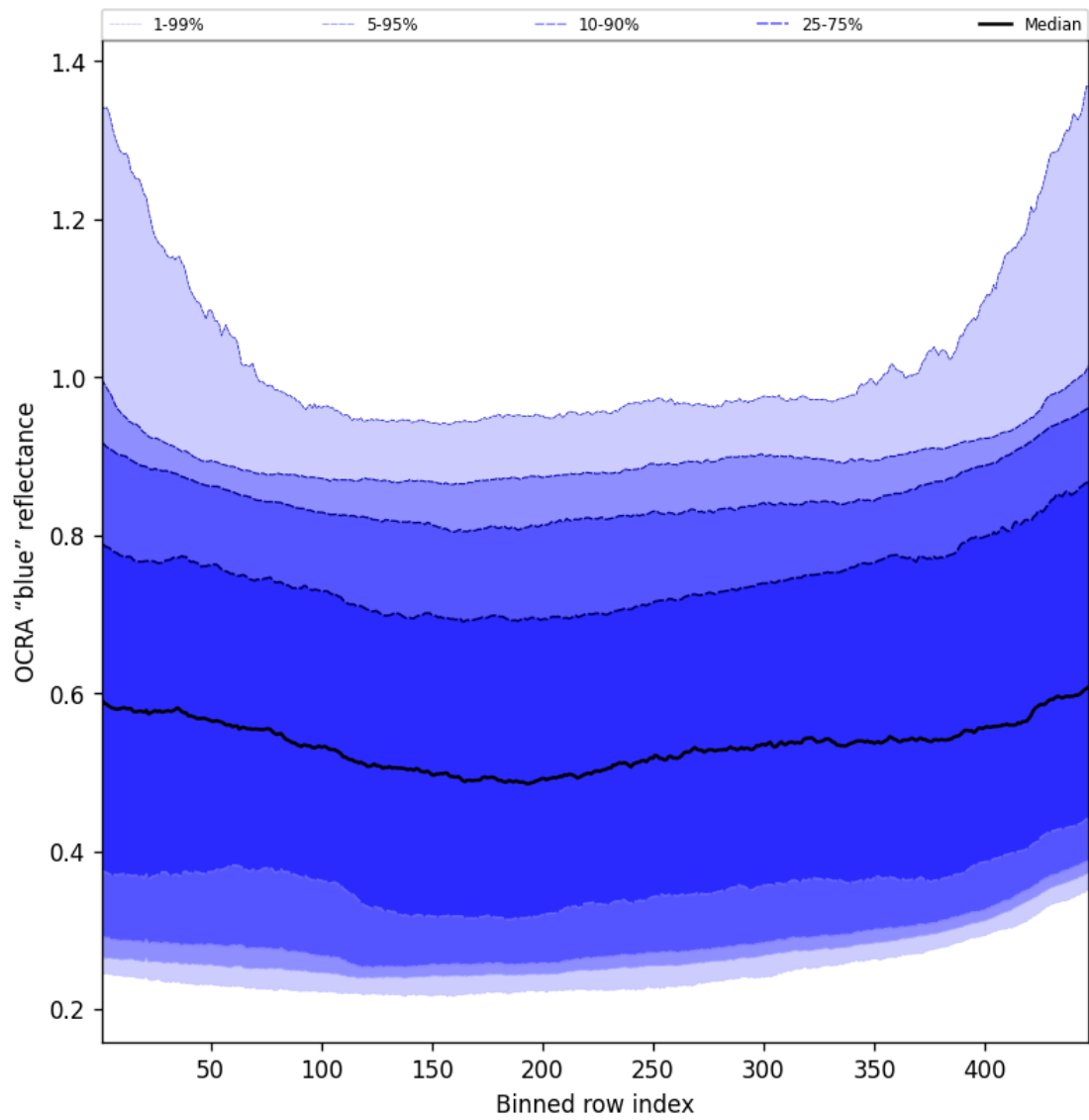


Figure 65: Along track statistics of “OCRA “blue” reflectance” for 2025-05-12 to 2025-05-13

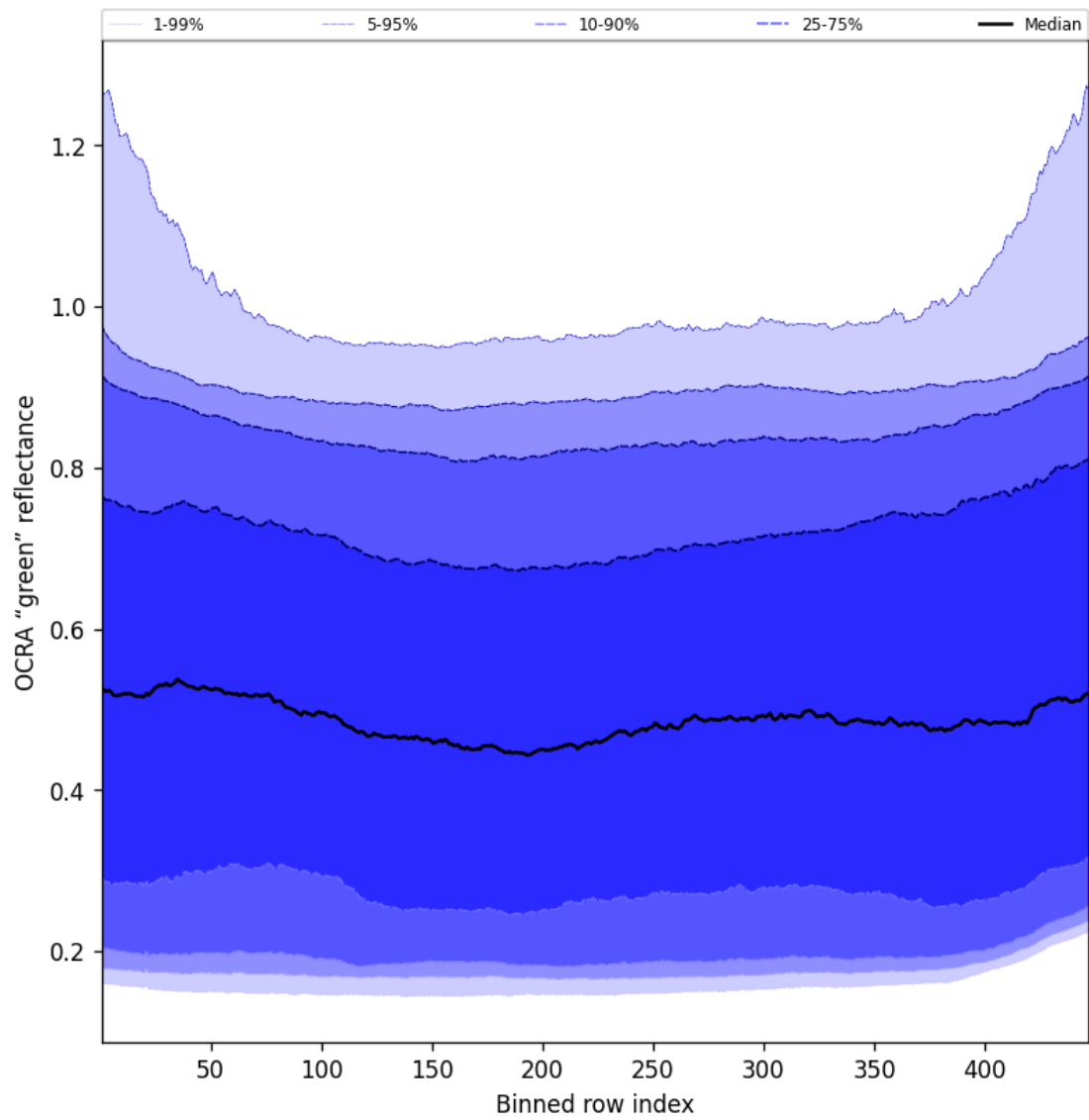


Figure 66: Along track statistics of "OCRA "green" reflectance" for 2025-05-12 to 2025-05-13

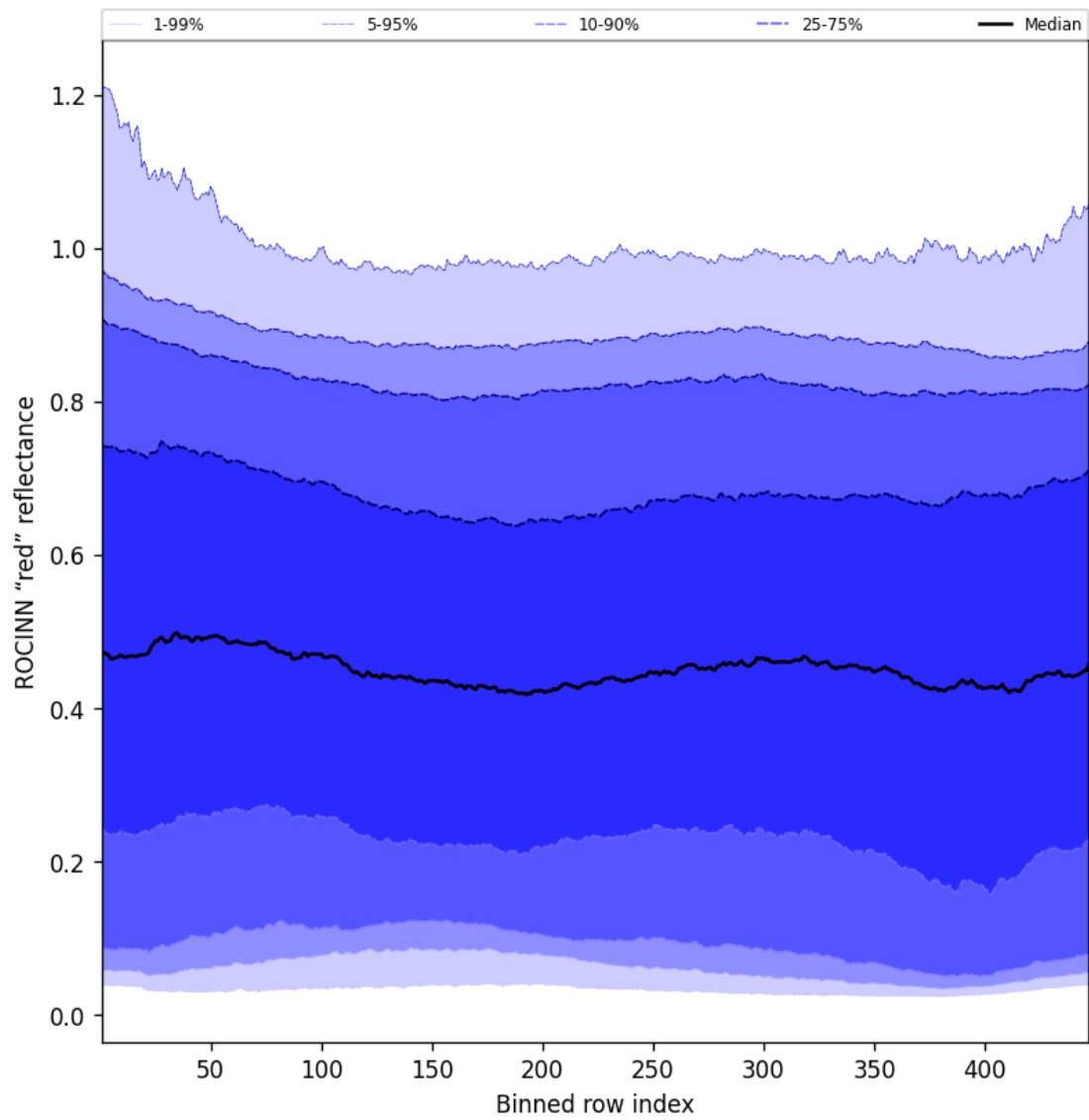


Figure 67: Along track statistics of "ROCINN "red" reflectance" for 2025-05-12 to 2025-05-13

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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