PyCAMA report generated by tropl2-proc

tropl2-proc

2025-04-30 (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:

$$\overline{x} = \frac{1}{N}\sum_{i=1}^{N} x_i \tag{1}$$

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 $\sigma(x) = \sqrt{V(x)}$.

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

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:

$$P(x \leq m) = P(x \geq m) = \int_{-\infty}^{m} f(x)\,\mathrm{d}x = \frac{1}{2} \tag{3}$$

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

The median is a special case of a percentile. Instead of ½ 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}.

$$C_{kl} = C(x_{(k)}, x_{(l)}) = \frac{1}{N-1}\sum_{i=1}^{N}(x_{(k),i} - \overline{x_{(k)}})(x_{(l),i} - \overline{x_{(l)}}) \tag{4}$$

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

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

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]	0.586 ± 0.385	18686507	5.000×10^{-3}	0.720	0.730	0.0	1.000
cloud fraction [1]	0.558 ± 0.345	18686507	0.995	0.722	0.541	7.698×10^{-3}	1.000
cloud top height [m]	$(0.368 \pm 0.255) \times 10^4$	18686507	1.575×10^3	3.376×10^3	3.122×10^3	0.0	2.000×10^4
cloud optical thickness [1]	18.3 ± 32.7	18686507	8.91	10.3	9.11	1.000	250
cloud fraction crb [1]	0.557 ± 0.345	18686507	0.995	0.722	0.540	8.266×10^{-3}	1.000
cloud height crb [m]	$(0.283 \pm 0.223) \times 10^4$	18686507	75.0	2.955×10^3	2.364×10^3	0.0	2.000×10^4
cloud albedo crb [1]	0.583 ± 0.209	18686507	0.995	0.267	0.565	0.0	1.000
surface albedo fitted [1]	0.248 ± 0.317	18686507	2.500×10^{-2}	0.351	5.603×10^{-2}	0.0	1.000
surface albedo fitted crb [1]	0.238 ± 0.308	18686507	1.500×10^{-2}	0.374	4.340×10^{-2}	0.0	1.000
fitted root mean square [1]	$(7.058 \pm 10.944) \times 10^{-4}$	18686507	5.000×10^{-5}	8.436×10^{-4}	3.438×10^{-4}	1.007×10^{-6}	0.327
fitted root mean square crb [1]	$(6.353 \pm 9.619) \times 10^{-4}$	18686507	5.000×10^{-5}	8.121×10^{-4}	2.638×10^{-4}	1.114×10^{-6}	1.10
wavelength shift [nm]	$(7.156 \pm 6.930) \times 10^{-3}$	18686507	3.000×10^{-4}	9.891×10^{-3}	6.415×10^{-3}	-6.815×10^{-2}	6.715×10^{-2}
cloud fraction apriori [1]	0.571 ± 0.350	18686507	0.995	0.772	0.569	0.0	1.000
reflectance blue ocra [1]	0.556 ± 0.225	18686507	0.265	0.381	0.523	0.137	1.94
reflectance green ocra [1]	0.503 ± 0.253	18686507	0.185	0.452	0.473	8.157×10^{-2}	2.00
reflectance continuum aband [1]	0.453 ± 0.281	18686507	4.500×10^{-2}	0.474	0.436	1.256×10^{-2}	6.26

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	0.200	0.920	1.000	1.000	1.000	1.000
cloud fraction [1]	2.549×10^{-2}	6.616×10^{-2}	0.101	0.144	0.227	0.948	1.000	1.000	1.000	1.000
cloud top height [m]	173	578	950	1.271×10^{3}	1.709×10^{3}	5.086×10^{3}	6.299×10^{3}	7.376×10^{3}	8.745×10^{3}	1.100×10^{4}
cloud optical thickness [1]	1.09	2.88	3.94	4.71	5.64	15.9	24.1	35.5	61.4	233
cloud fraction crb [1]	2.499×10^{-2}	6.521×10^{-2}	0.100	0.143	0.225	0.947	1.000	1.000	1.000	1.000
cloud height crb [m]	0.0	53.9	395	697	1.095×10^{3}	4.049×10^{3}	5.140×10^{3}	6.104×10^{3}	7.300×10^{3}	9.255×10^{3}
cloud albedo crb [1]	0.0	0.227	0.341	0.407	0.458	0.725	0.811	0.878	0.942	1.000
surface albedo fitted [1]	0.0	9.917×10^{-3}	1.536×10^{-2}	2.021×10^{-2}	2.725×10^{-2}	0.379	0.733	0.824	0.912	0.987
surface albedo fitted crb [1]	1.697×10^{-4}	7.058×10^{-3}	1.084×10^{-2}	1.457×10^{-2}	2.029×10^{-2}	0.394	0.732	0.797	0.849	0.919
fitted root mean square [1]	1.265×10^{-5}	2.537×10^{-5}	3.994×10^{-5}	6.270×10^{-5}	1.085×10^{-4}	9.521×10^{-4}	1.433×10^{-3}	1.912×10^{-3}	2.539×10^{-3}	3.796×10^{-3}
fitted root mean square crb [1]	6.590×10^{-6}	1.498×10^{-5}	2.512×10^{-5}	3.896×10^{-5}	6.877×10^{-5}	8.809×10^{-4}	1.360×10^{-3}	1.842×10^{-3}	2.468×10^{-3}	3.642×10^{-3}
wavelength shift [nm]	-8.343×10^{-3}	-1.421×10^{-3}	-1.690×10^{-4}	5.021×10^{-4}	1.846×10^{-3}	1.174×10^{-2}	1.421×10^{-2}	1.630×10^{-2}	1.907×10^{-2}	2.514×10^{-2}
cloud fraction apriori [1]	2.804×10^{-2}	6.334×10^{-2}	9.580×10^{-2}	0.140	0.228	1.000	1.000	1.000	1.000	1.000
reflectance blue ocra [1]	0.233	0.259	0.282	0.310	0.357	0.739	0.810	0.864	0.920	1.09
reflectance green ocra [1]	0.151	0.173	0.192	0.218	0.266	0.718	0.798	0.855	0.911	1.04
reflectance continuum aband [1]	2.894×10^{-2}	5.165×10^{-2}	8.162×10^{-2}	0.123	0.208	0.682	0.770	0.833	0.896	1.04

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]	0.544 ± 0.383	11218197	0.840	0.670	0.0	1.000	6.000×10^{-2}	0.900
cloud fraction [1]	0.574 ± 0.349	11218197	0.753	0.565	7.698×10^{-3}	1.000	0.233	0.987
cloud top height [m]	$(0.346 \pm 0.256) \times 10^4$	11218197	3.348×10^3	2.866×10^3	0.0	2.000×10^4	1.487×10^3	4.836×10^3
cloud optical thickness [1]	14.6 ± 27.1	11218197	7.55	8.10	1.000	250	5.15	12.7
cloud fraction crb [1]	0.574 ± 0.350	11218197	0.754	0.566	8.266×10^{-3}	1.000	0.233	0.987
cloud height crb [m]	$(0.253 \pm 0.219) \times 10^4$	11218197	2.860×10^3	2.046×10^3	0.0	2.000×10^4	798	3.658×10^3
cloud albedo crb [1]	0.595 ± 0.229	11218197	0.320	0.583	0.0	1.000	0.452	0.772
surface albedo fitted [1]	0.360 ± 0.353	11218197	0.706	0.217	0.0	1.000	3.507×10^{-2}	0.741
surface albedo fitted crb [1]	0.349 ± 0.341	11218197	0.711	0.215	0.0	1.000	2.845×10^{-2}	0.740
fitted root mean square [1]	$(9.339 \pm 13.016) \times 10^{-4}$	11218197	1.188×10^{-3}	5.666×10^{-4}	1.591×10^{-6}	0.327	1.722×10^{-4}	1.360×10^{-3}
fitted root mean square crb [1]	$(8.425 \pm 11.273) \times 10^{-4}$	11218197	1.159×10^{-3}	4.680×10^{-4}	1.451×10^{-6}	1.10	1.188×10^{-4}	1.278×10^{-3}
wavelength shift [nm]	$(8.494 \pm 6.979) \times 10^{-3}$	11218197	9.937×10^{-3}	8.250×10^{-3}	-6.815×10^{-2}	6.715×10^{-2}	3.294×10^{-3}	1.323×10^{-2}
cloud fraction apriori [1]	0.595 ± 0.353	11218197	0.755	0.616	0.0	1.000	0.245	1.000
reflectance blue ocra [1]	0.589 ± 0.239	11218197	0.430	0.598	0.137	1.94	0.359	0.790
reflectance green ocra [1]	0.547 ± 0.266	11218197	0.501	0.569	8.623×10^{-2}	1.82	0.278	0.779
reflectance continuum aband [1]	0.511 ± 0.283	11218197	0.480	0.536	1.256×10^{-2}	3.85	0.267	0.747

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]	0.650 ± 0.380	7468310	0.670	0.880	0.0	1.000	0.330	1.000
cloud fraction [1]	0.534 ± 0.336	7468310	0.658	0.510	7.843×10^{-3}	1.000	0.217	0.875
cloud top height [m]	$(0.402 \pm 0.249) \times 10^4$	7468310	3.442×10^3	3.499×10^3	0.0	2.000×10^4	2.031×10^3	5.474×10^3
cloud optical thickness [1]	23.9 ± 39.0	7468310	15.2	11.3	1.000	250	6.87	22.1
cloud fraction crb [1]	0.532 ± 0.336	7468310	0.657	0.506	8.386×10^{-3}	1.000	0.215	0.872
cloud height crb [m]	$(0.328 \pm 0.220) \times 10^4$	7468310	3.074×10^3	2.816×10^3	0.0	2.000×10^4	1.515×10^3	4.589×10^3
cloud albedo crb [1]	0.565 ± 0.174	7468310	0.199	0.550	0.0	1.000	0.465	0.663
surface albedo fitted [1]	$(8.169 \pm 13.288) \times 10^{-2}$	7468310	4.409×10^{-2}	3.625×10^{-2}	0.0	1.000	2.120×10^{-2}	6.529×10^{-2}
surface albedo fitted crb [1]	$(7.198 \pm 13.064) \times 10^{-2}$	7468310	3.431×10^{-2}	2.622×10^{-2}	0.0	1.000	1.437×10^{-2}	4.868×10^{-2}
fitted root mean square [1]	$(3.632 \pm 5.067) \times 10^{-4}$	7468310	3.770×10^{-4}	1.810×10^{-4}	1.007×10^{-6}	3.485×10^{-2}	6.730×10^{-5}	4.443×10^{-4}
fitted root mean square crb [1]	$(3.239 \pm 4.945) \times 10^{-4}$	7468310	3.555×10^{-4}	1.218×10^{-4}	1.114×10^{-6}	3.147×10^{-2}	4.156×10^{-5}	3.971×10^{-4}
wavelength shift [nm]	$(5.146 \pm 6.347) \times 10^{-3}$	7468310	7.969×10^{-3}	3.909×10^{-3}	-4.464×10^{-2}	6.453×10^{-2}	7.523×10^{-4}	8.722×10^{-3}
cloud fraction apriori [1]	0.534 ± 0.343	7468310	0.684	0.508	0.0	1.000	0.206	0.889
reflectance blue ocra [1]	0.506 ± 0.193	7468310	0.266	0.469	0.150	1.92	0.355	0.621
reflectance green ocra [1]	0.437 ± 0.218	7468310	0.323	0.397	8.157×10^{-2}	2.00	0.256	0.579
reflectance continuum aband [1]	0.366 ± 0.253	7468310	0.385	0.335	1.257×10^{-2}	6.26	0.149	0.534

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]	0.598 ± 0.386	13475958	0.710	0.780	0.0	1.000	0.240	0.950
cloud fraction [1]	0.534 ± 0.345	13475958	0.709	0.498	7.843×10^{-3}	1.000	0.204	0.913
cloud top height [m]	$(0.356 \pm 0.248) \times 10^4$	13475958	3.180×10^3	2.971×10^3	0.0	2.000×10^4	1.657×10^3	4.837×10^3
cloud optical thickness [1]	19.8 ± 34.2	13475958	11.1	9.77	1.000	250	6.15	17.3
cloud fraction crb [1]	0.533 ± 0.345	13475958	0.709	0.496	8.478×10^{-3}	1.000	0.203	0.911
cloud height crb [m]	$(0.280 \pm 0.222) \times 10^4$	13475958	2.838×10^3	2.325×10^3	0.0	2.000×10^4	1.087×10^3	3.925×10^3
cloud albedo crb [1]	0.558 ± 0.193	13475958	0.231	0.541	0.0	1.000	0.448	0.678
surface albedo fitted [1]	0.159 ± 0.277	13475958	4.664×10^{-2}	3.694×10^{-2}	0.0	1.000	2.197×10^{-2}	6.861×10^{-2}
surface albedo fitted crb [1]	0.149 ± 0.269	13475958	3.726×10^{-2}	2.824×10^{-2}	0.0	1.000	1.596×10^{-2}	5.322×10^{-2}
fitted root mean square [1]	$(5.132 \pm 9.060) \times 10^{-4}$	13475958	5.147×10^{-4}	2.167×10^{-4}	1.007×10^{-6}	0.107	7.909×10^{-5}	5.938×10^{-4}
fitted root mean square crb [1]	$(4.561 \pm 7.108) \times 10^{-4}$	13475958	4.663×10^{-4}	1.621×10^{-4}	1.114×10^{-6}	9.623×10^{-2}	5.330×10^{-5}	5.196×10^{-4}
wavelength shift [nm]	$(6.374 \pm 6.800) \times 10^{-3}$	13475958	9.180×10^{-3}	5.398×10^{-3}	-4.941×10^{-2}	6.715×10^{-2}	1.408×10^{-3}	1.059×10^{-2}
cloud fraction apriori [1]	0.541 ± 0.350	13475958	0.744	0.511	0.0	1.000	0.201	0.945
reflectance blue ocra [1]	0.530 ± 0.208	13475958	0.343	0.494	0.155	1.92	0.351	0.694
reflectance green ocra [1]	0.470 ± 0.236	13475958	0.412	0.434	8.157×10^{-2}	2.00	0.253	0.666
reflectance continuum aband [1]	0.397 ± 0.271	13475958	0.476	0.368	1.256×10^{-2}	6.26	0.143	0.618

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]	0.598 ± 0.378	3426602	0.700	0.710	0.0	1.000	0.210	0.910
cloud fraction [1]	0.594 ± 0.340	3426602	0.706	0.610	7.698×10^{-3}	1.000	0.274	0.980
cloud top height [m]	$(0.429 \pm 0.268) \times 10^4$	3426602	3.649×10^3	3.871×10^3	0.0	2.000×10^4	2.218×10^3	5.868×10^3
cloud optical thickness [1]	12.9 ± 22.6	3426602	7.25	7.37	1.000	250	4.83	12.1
cloud fraction crb [1]	0.594 ± 0.340	3426602	0.707	0.610	8.266×10^{-3}	1.000	0.273	0.980
cloud height crb [m]	$(0.317 \pm 0.223) \times 10^4$	3426602	3.178×10^3	2.697×10^3	0.0	2.000×10^4	1.419×10^3	4.598×10^3
cloud albedo crb [1]	0.634 ± 0.228	3426602	0.316	0.635	0.0	1.000	0.497	0.813
surface albedo fitted [1]	0.451 ± 0.281	3426602	0.477	0.313	4.633×10^{-3}	1.000	0.235	0.713
surface albedo fitted crb [1]	0.442 ± 0.264	3426602	0.481	0.314	6.765×10^{-3}	1.000	0.231	0.712
fitted root mean square [1]	$(1.177 \pm 1.364) \times 10^{-3}$	3426602	1.163×10^{-3}	9.026×10^{-4}	5.997×10^{-6}	0.327	4.798×10^{-4}	1.643×10^{-3}
fitted root mean square crb [1]	$(1.081 \pm 1.411) \times 10^{-3}$	3426602	1.149×10^{-3}	8.546×10^{-4}	2.888×10^{-6}	1.10	4.048×10^{-4}	1.554×10^{-3}
wavelength shift [nm]	$(8.871 \pm 6.686) \times 10^{-3}$	3426602	9.563×10^{-3}	8.749×10^{-3}	-6.815×10^{-2}	6.089×10^{-2}	3.889×10^{-3}	1.345×10^{-2}
cloud fraction apriori [1]	0.616 ± 0.345	3426602	0.712	0.659	0.0	1.000	0.288	1.000
reflectance blue ocra [1]	0.592 ± 0.260	3426602	0.463	0.571	0.137	1.94	0.350	0.813
reflectance green ocra [1]	0.556 ± 0.282	3426602	0.525	0.546	8.623×10^{-2}	1.93	0.281	0.806
reflectance continuum aband [1]	0.577 ± 0.248	3426602	0.428	0.553	1.478×10^{-2}	4.13	0.358	0.786

3 Granule outlines

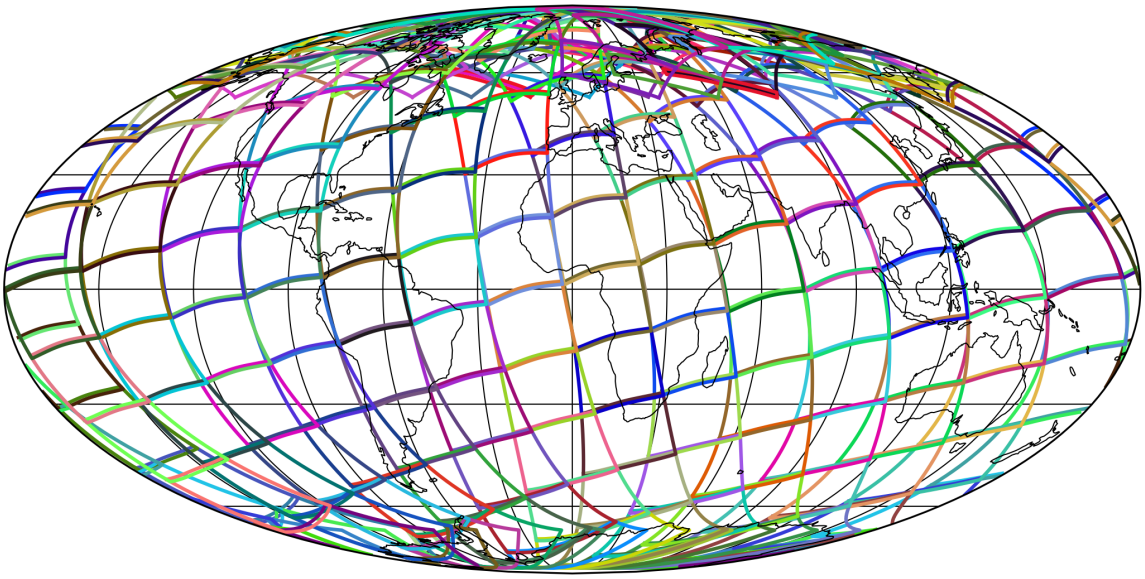

Figure 1: Outline of the granules.

4 Input data monitoring

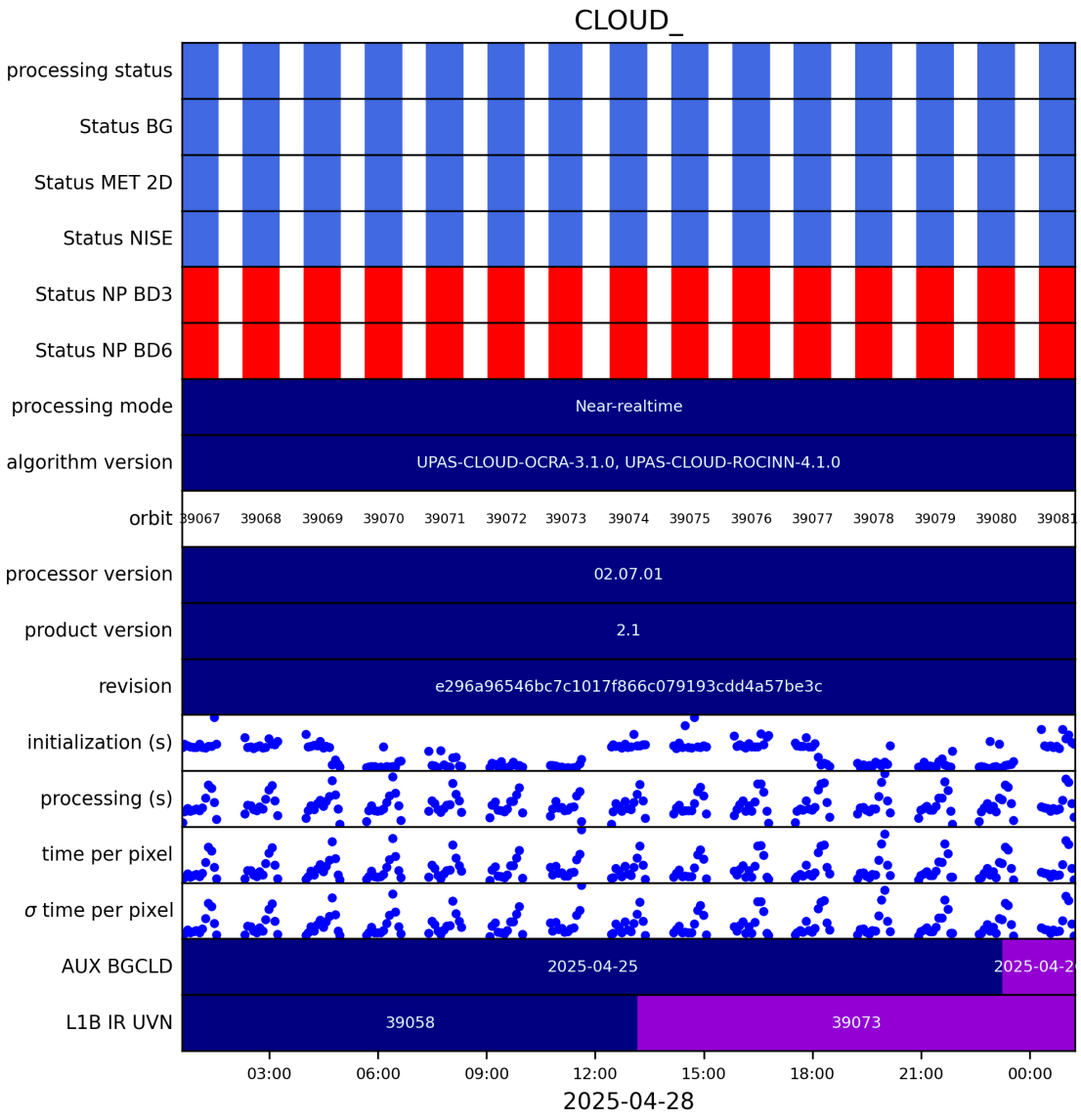

Figure 2: Input data per granule

5 Warnings and errors

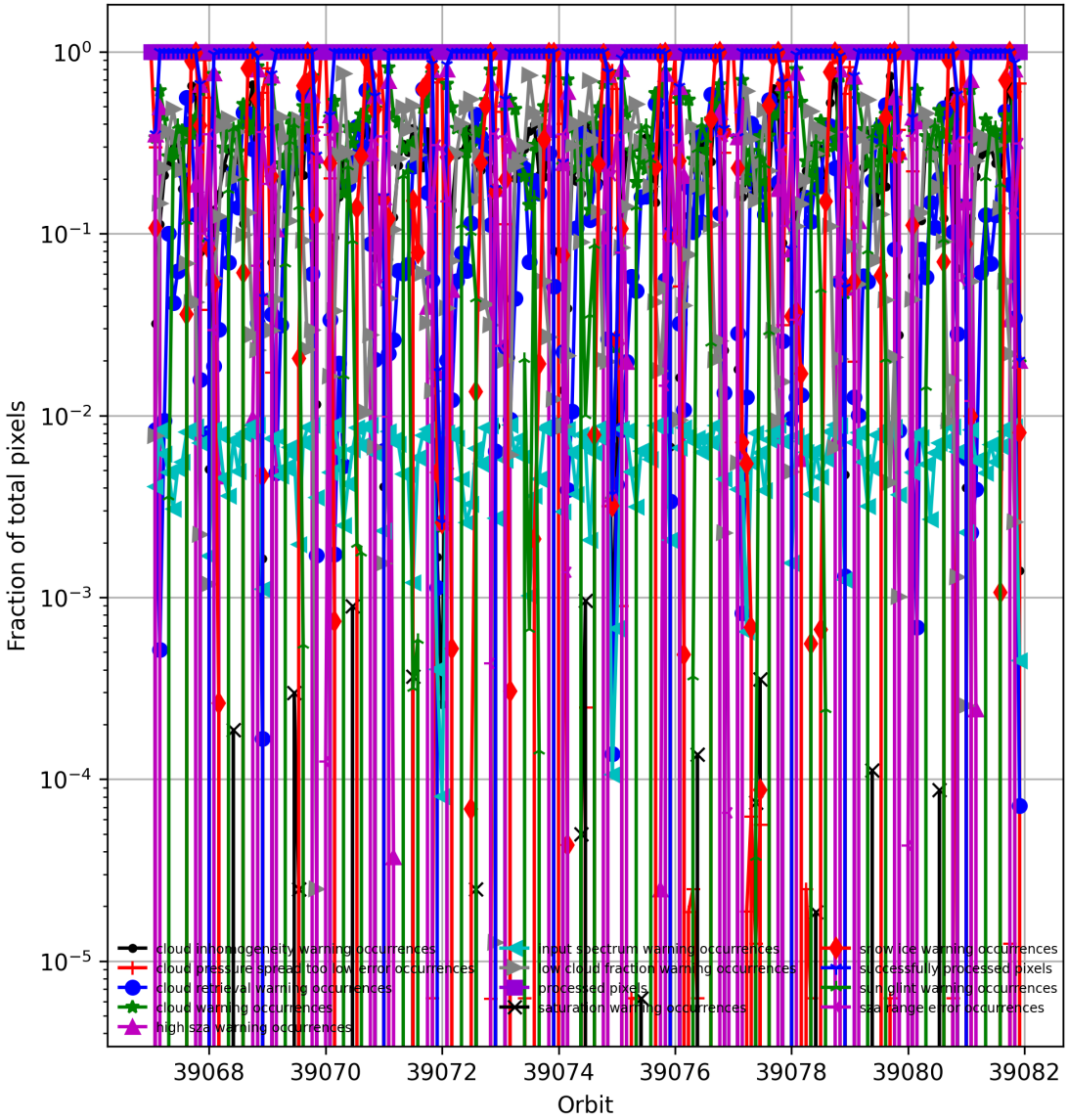

Figure 3: Fraction of pixels with specific warnings and errors during processing

6 World maps

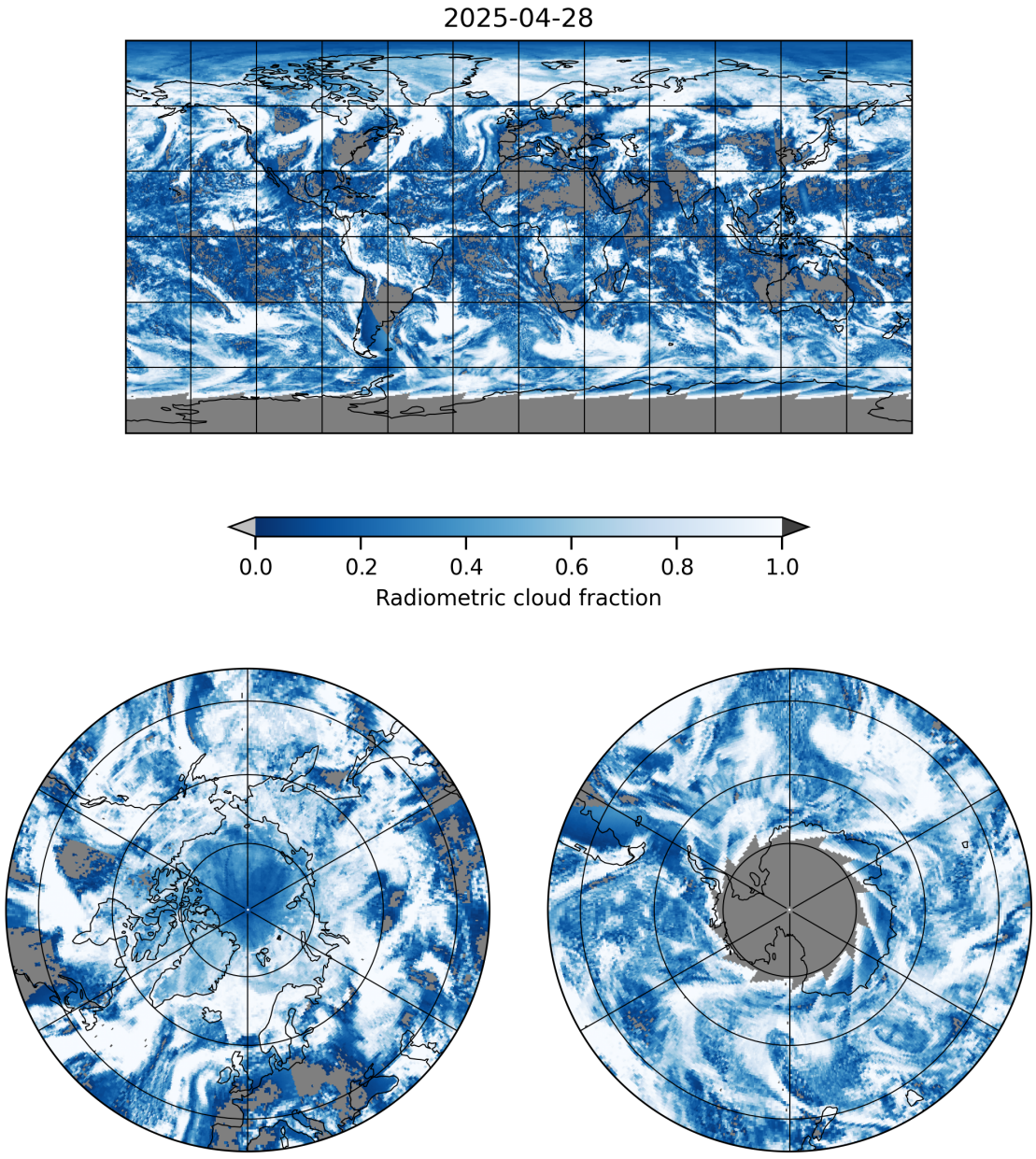

Figure 4: Map of “Radiometric cloud fraction” for 2025-04-28 to 2025-04-29

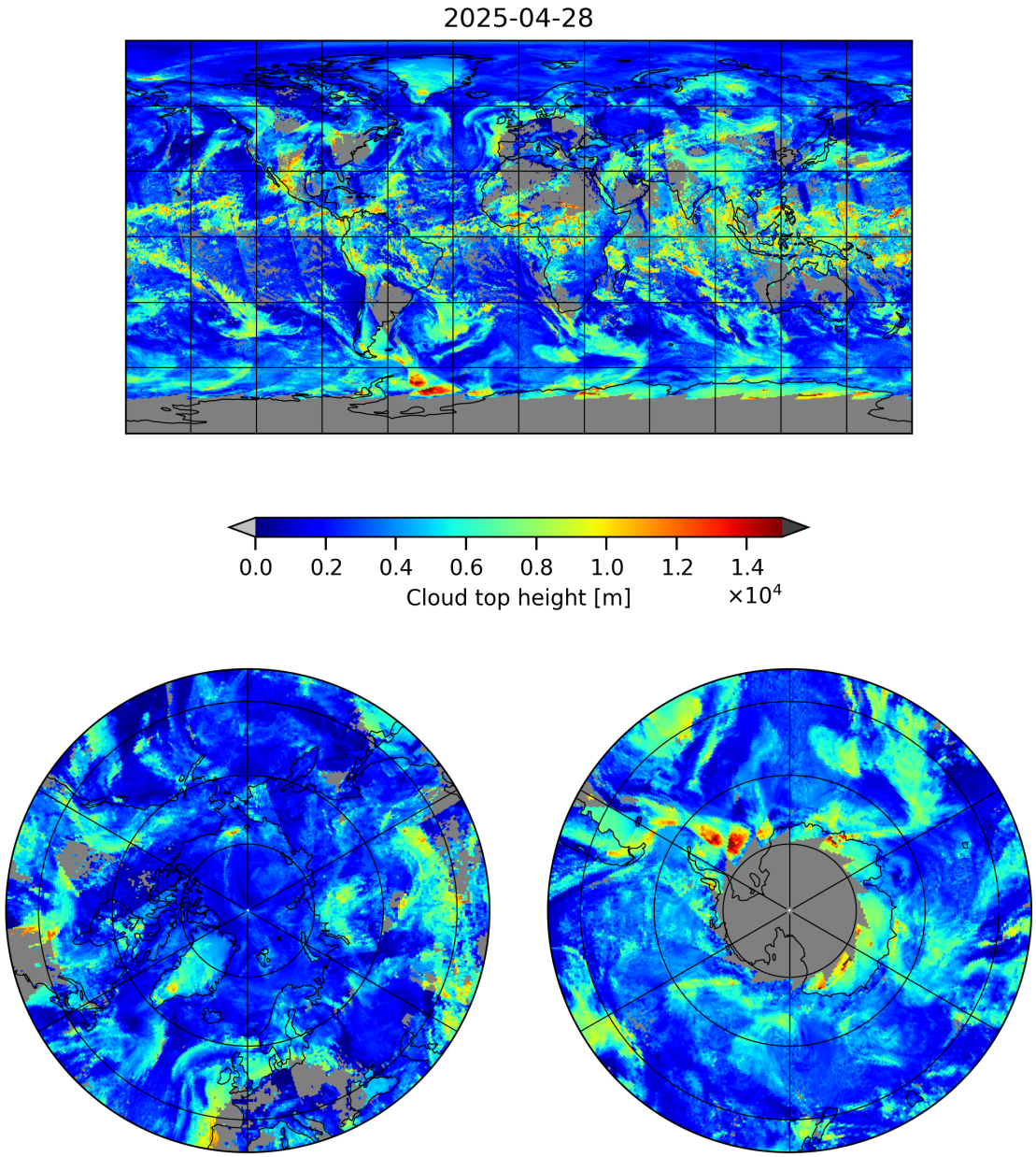

Figure 5: Map of “Cloud top height” for 2025-04-28 to 2025-04-29

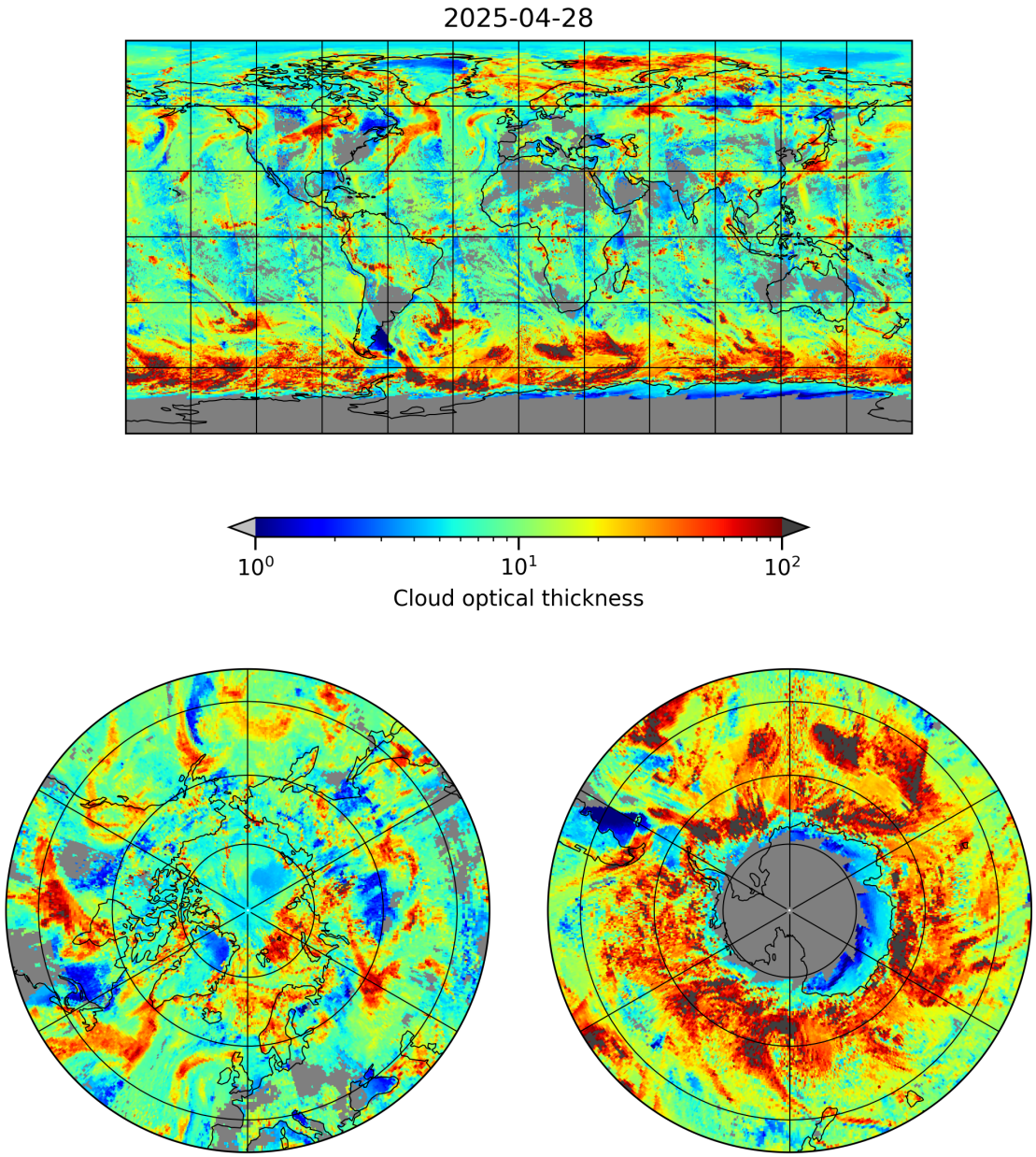

Figure 6: Map of “Cloud optical thickness” for 2025-04-28 to 2025-04-29

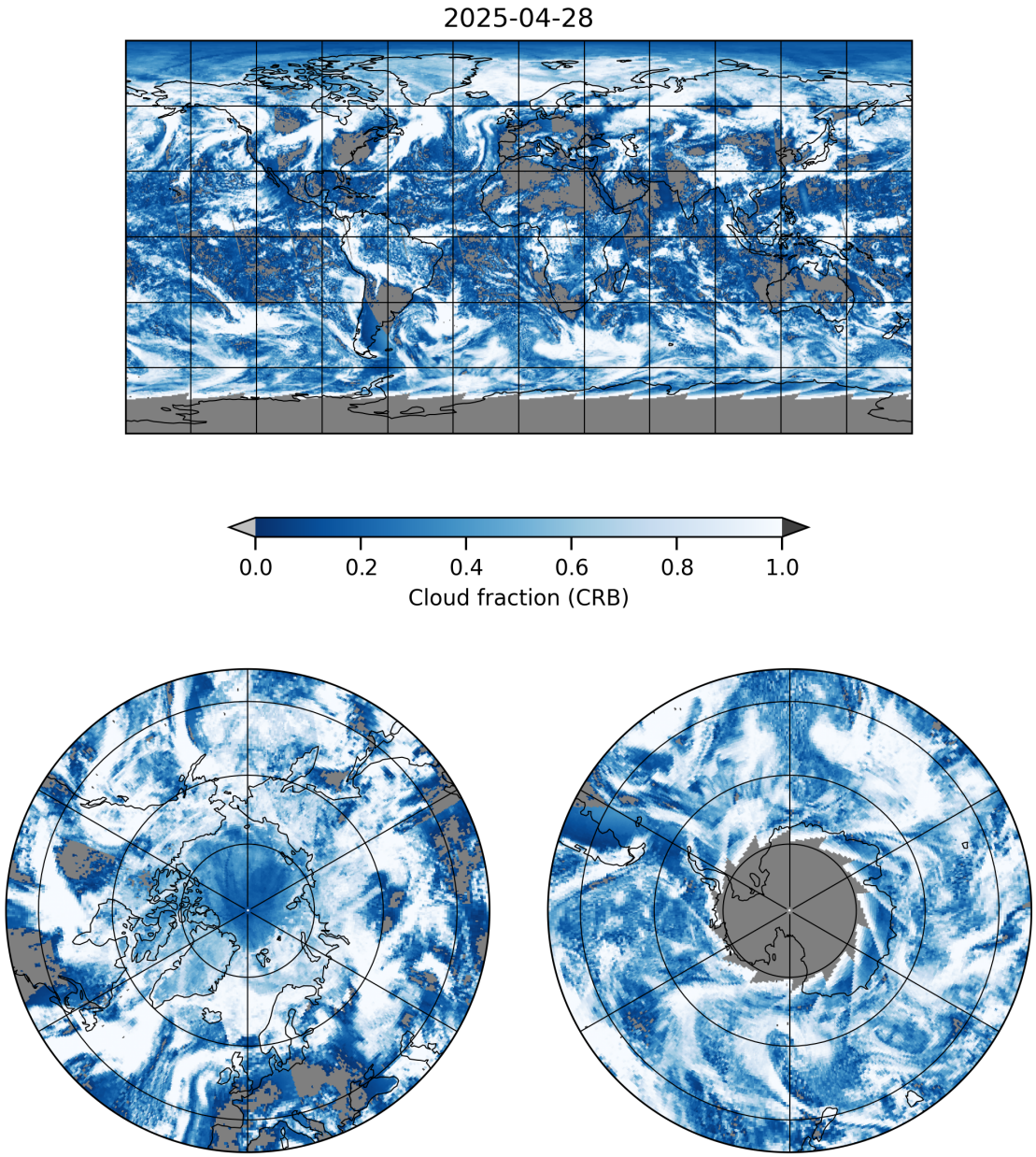

Figure 7: Map of “Cloud fraction (CRB)” for 2025-04-28 to 2025-04-29

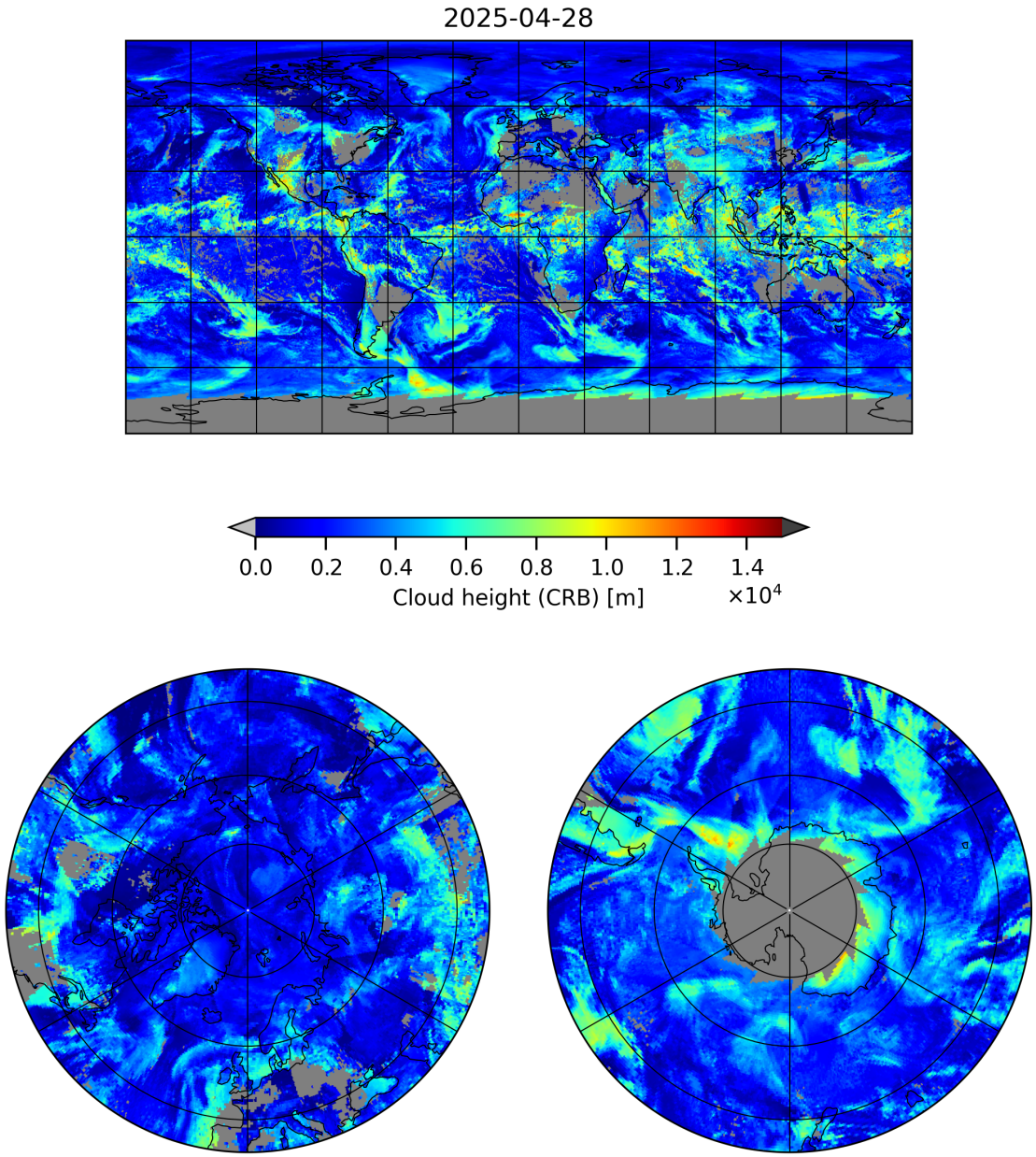

Figure 8: Map of “Cloud height (CRB)” for 2025-04-28 to 2025-04-29

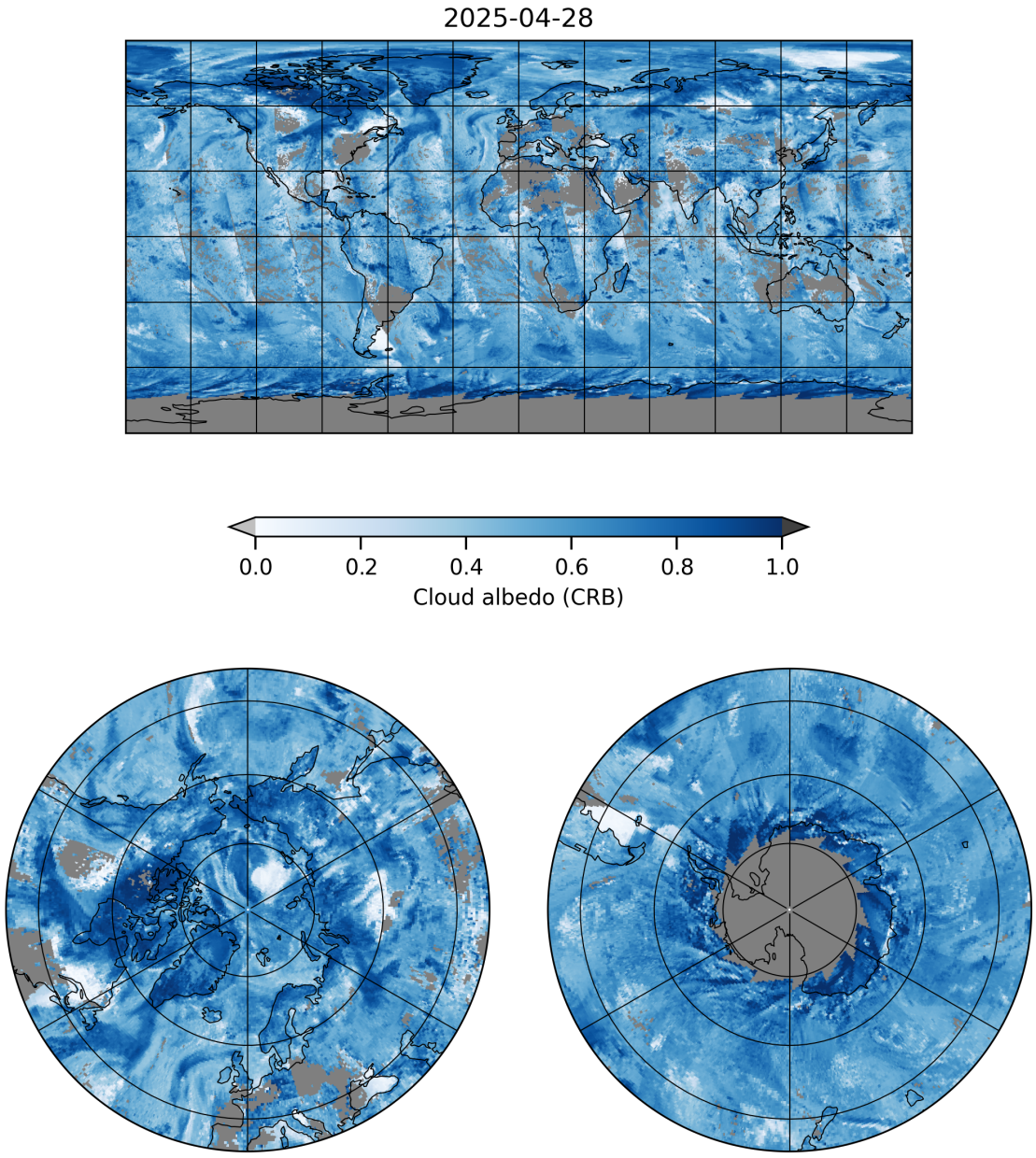

Figure 9: Map of “Cloud albedo (CRB)” for 2025-04-28 to 2025-04-29

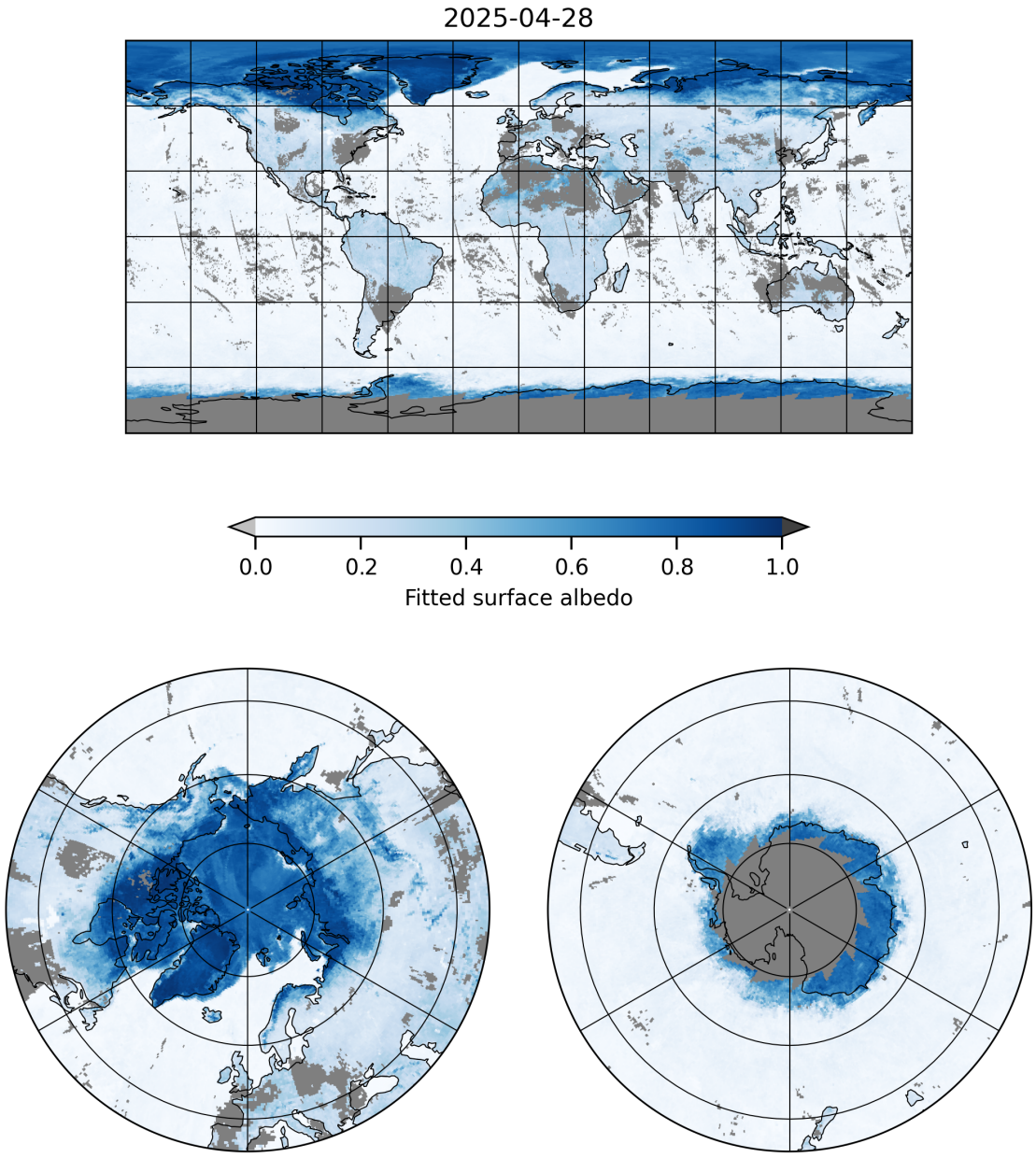

Figure 10: Map of “Fitted surface albedo” for 2025-04-28 to 2025-04-29

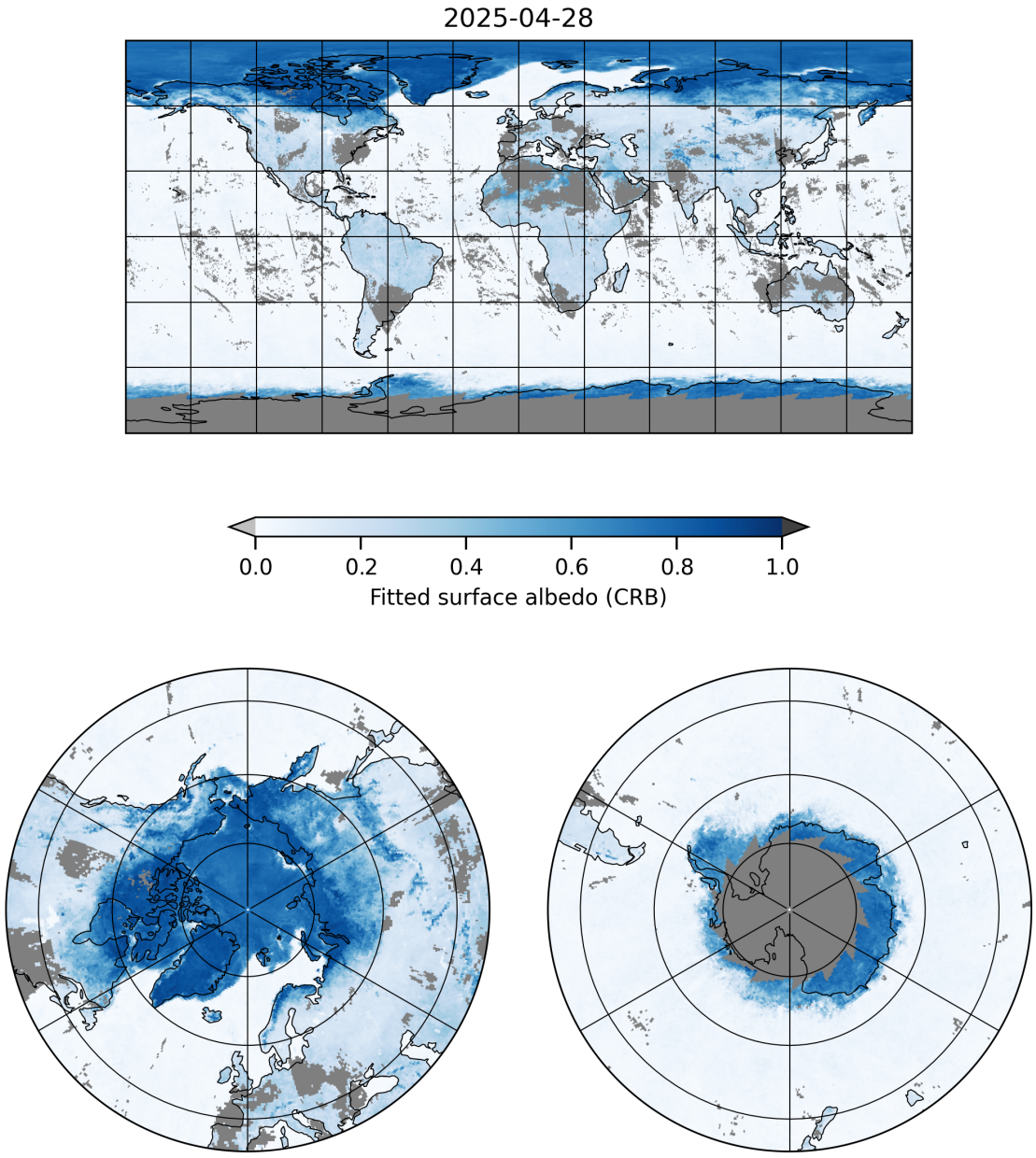

Figure 11: Map of “Fitted surface albedo (CRB)” for 2025-04-28 to 2025-04-29

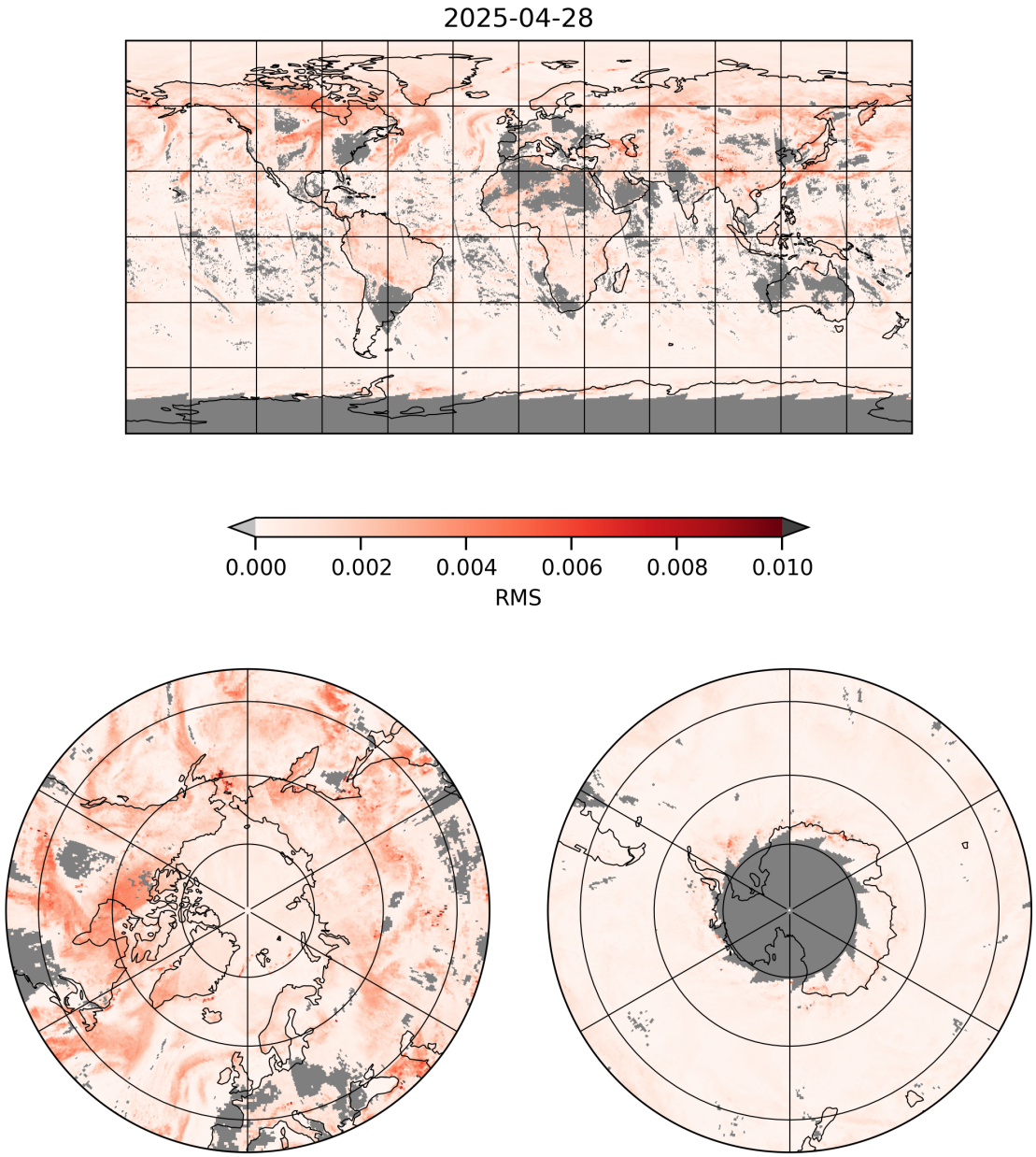

Figure 12: Map of “RMS” for 2025-04-28 to 2025-04-29

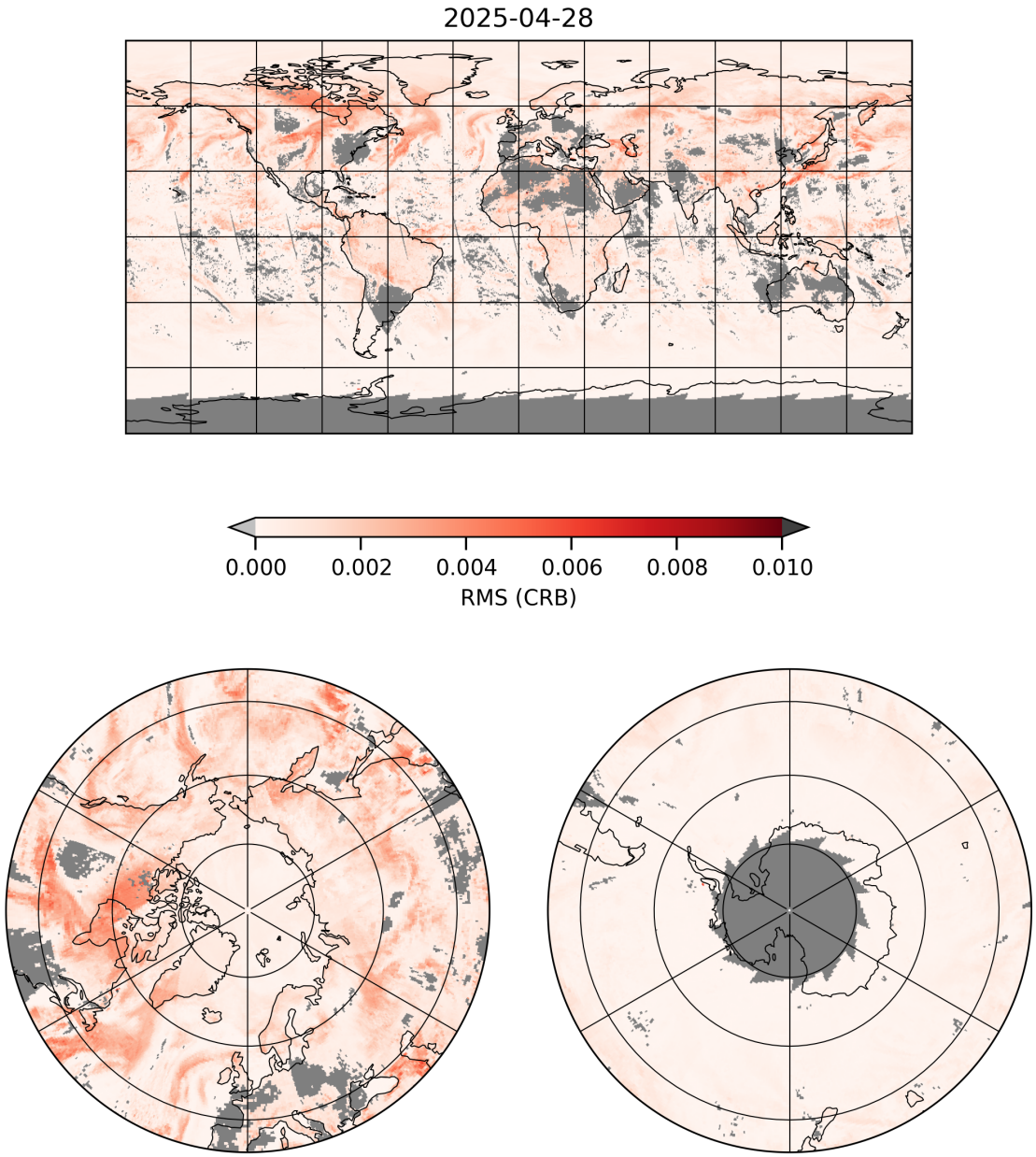

Figure 13: Map of “RMS (CRB)” for 2025-04-28 to 2025-04-29

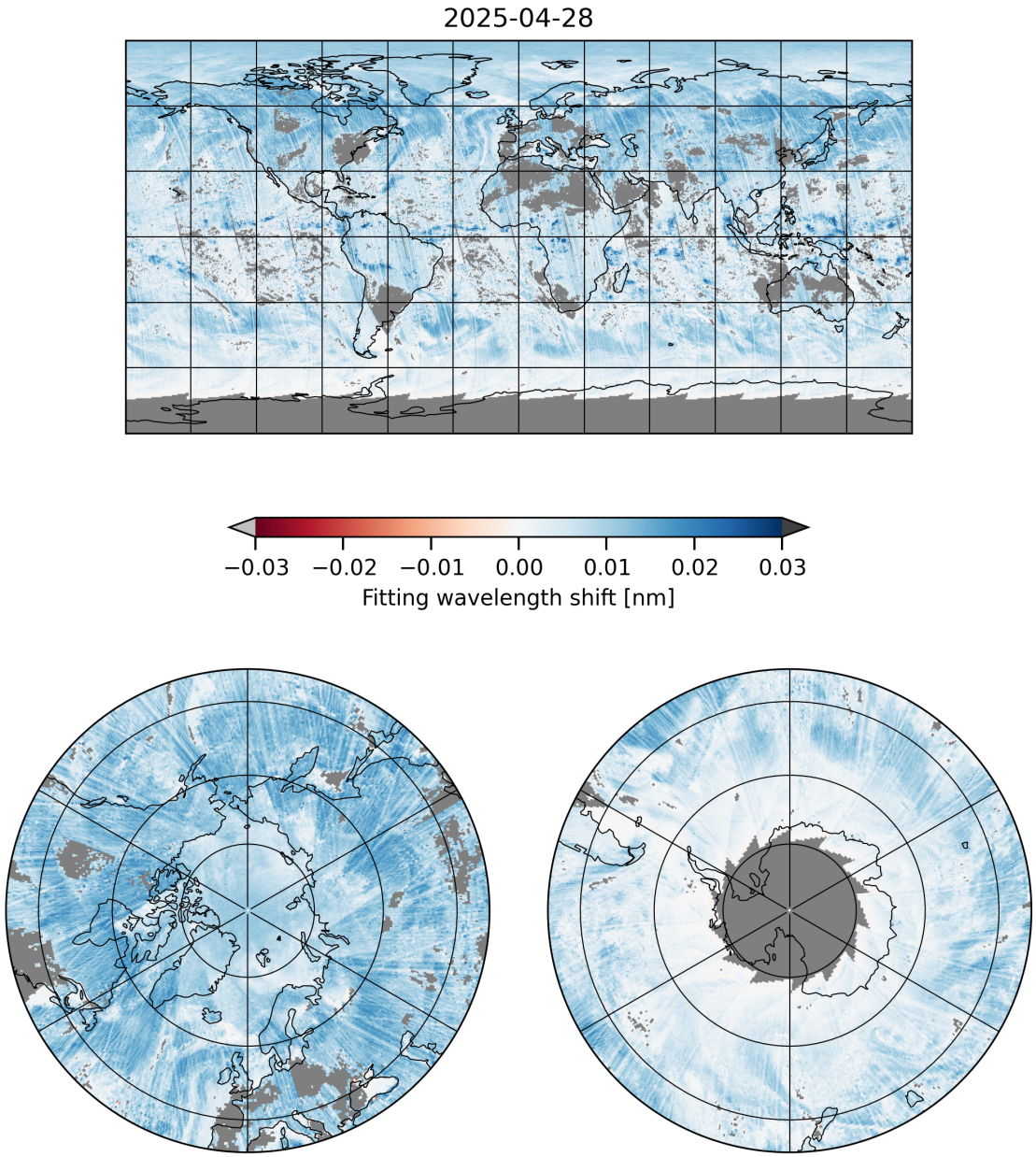

Figure 14: Map of “Fitting wavelength shift” for 2025-04-28 to 2025-04-29

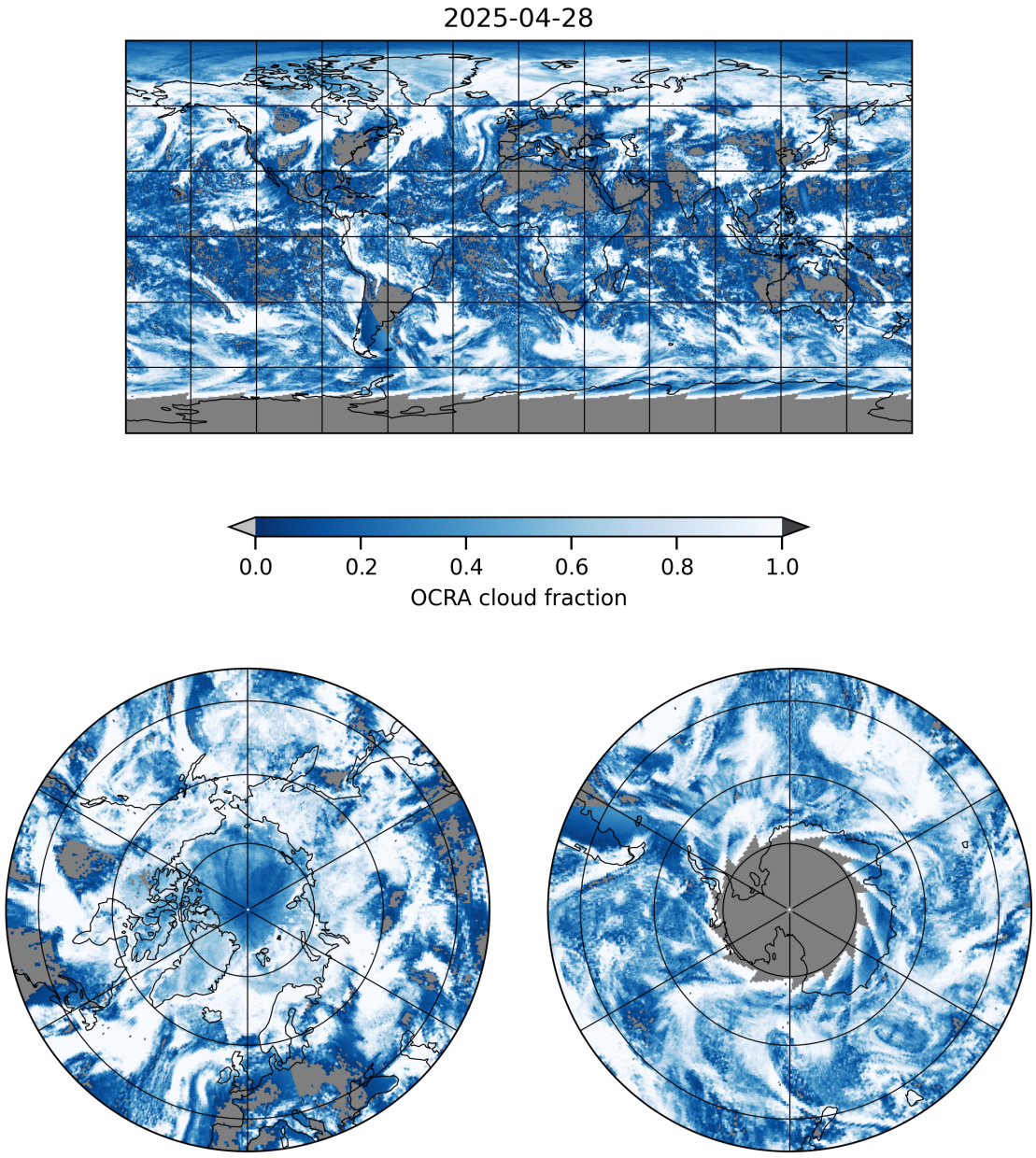

Figure 15: Map of “OCRA cloud fraction” for 2025-04-28 to 2025-04-29

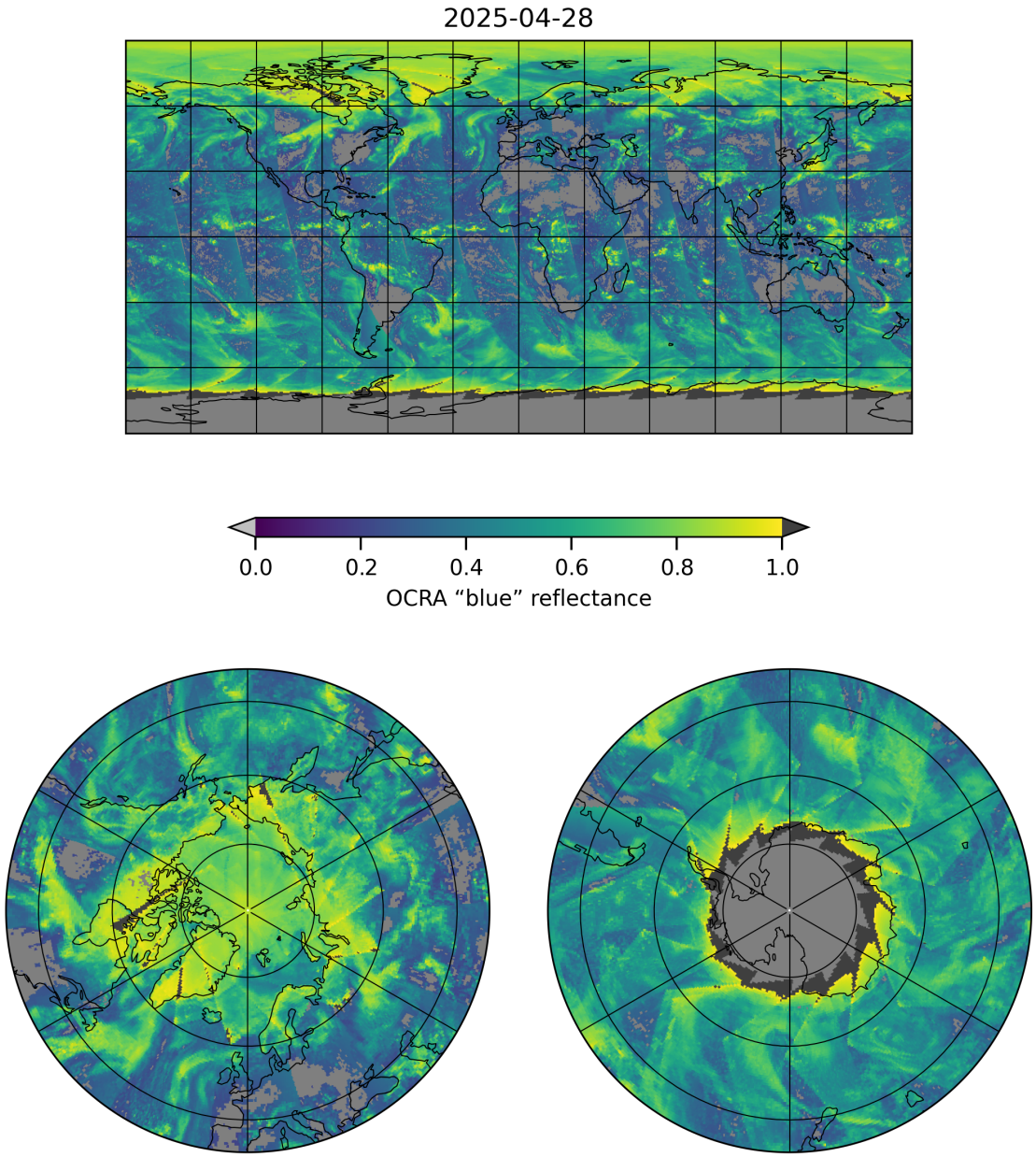

Figure 16: Map of “OCRA “blue” reflectance” for 2025-04-28 to 2025-04-29

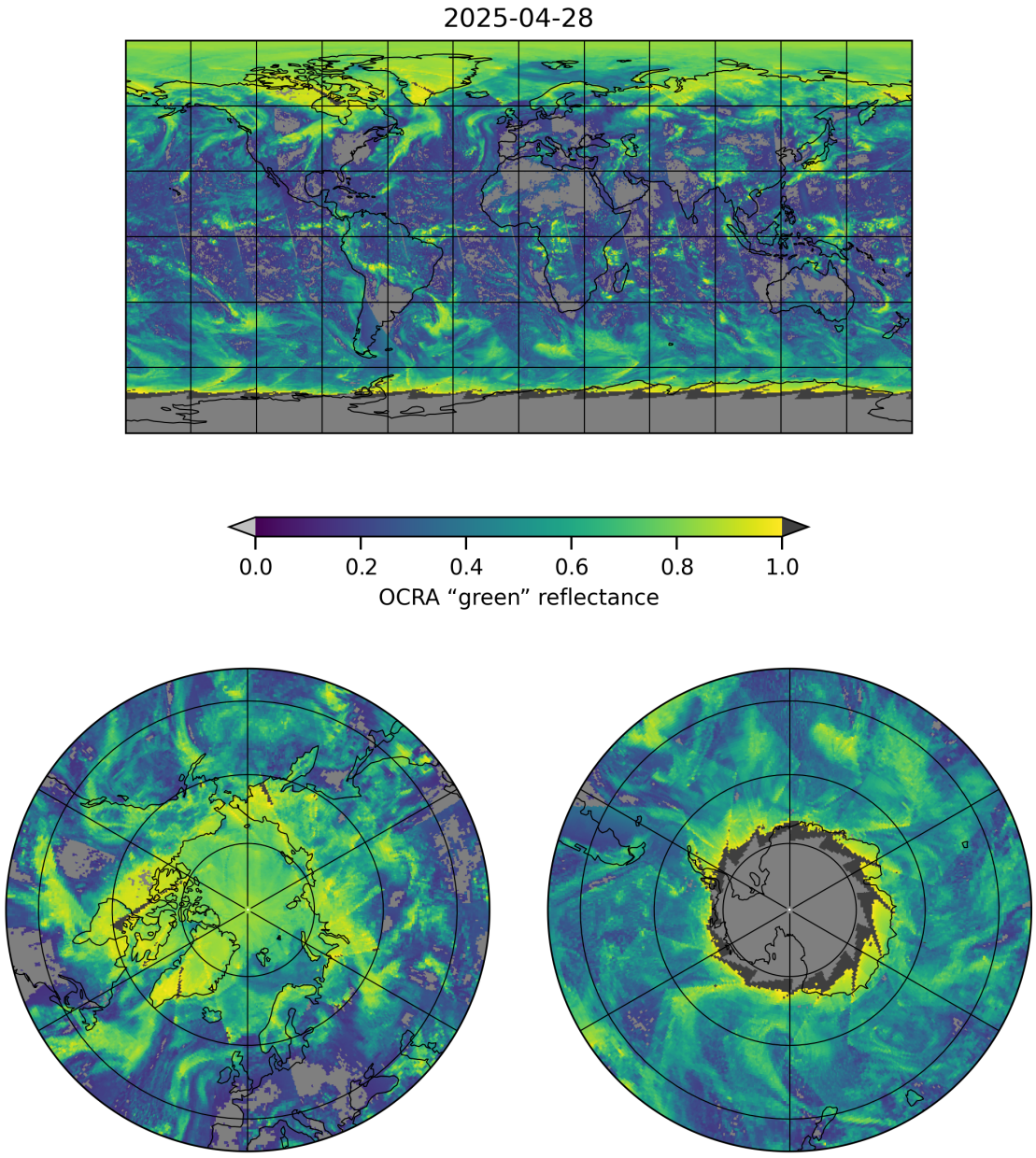

Figure 17: Map of “OCRA “green” reflectance” for 2025-04-28 to 2025-04-29

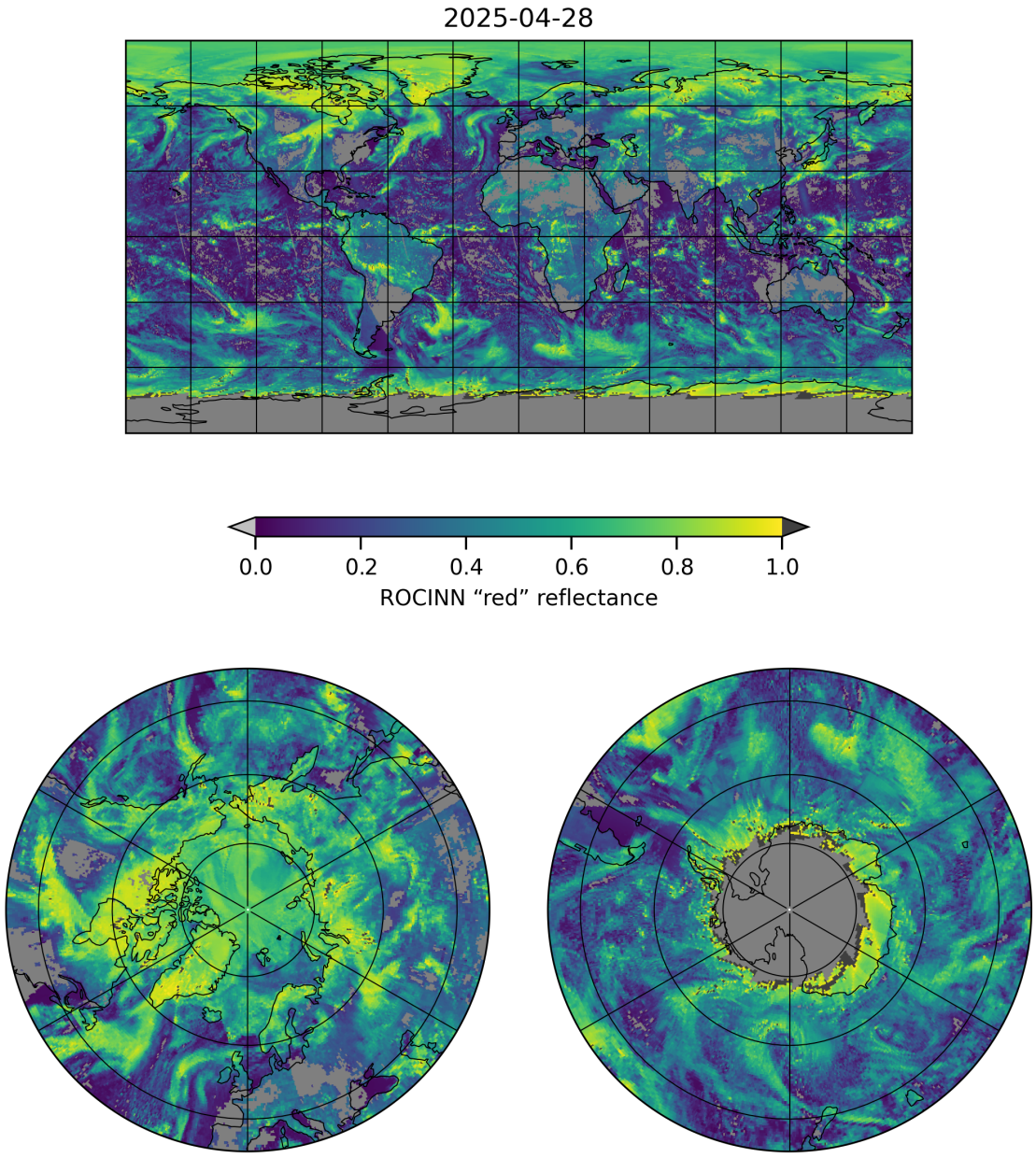

Figure 18: Map of “ROCINN “red” reflectance” for 2025-04-28 to 2025-04-29

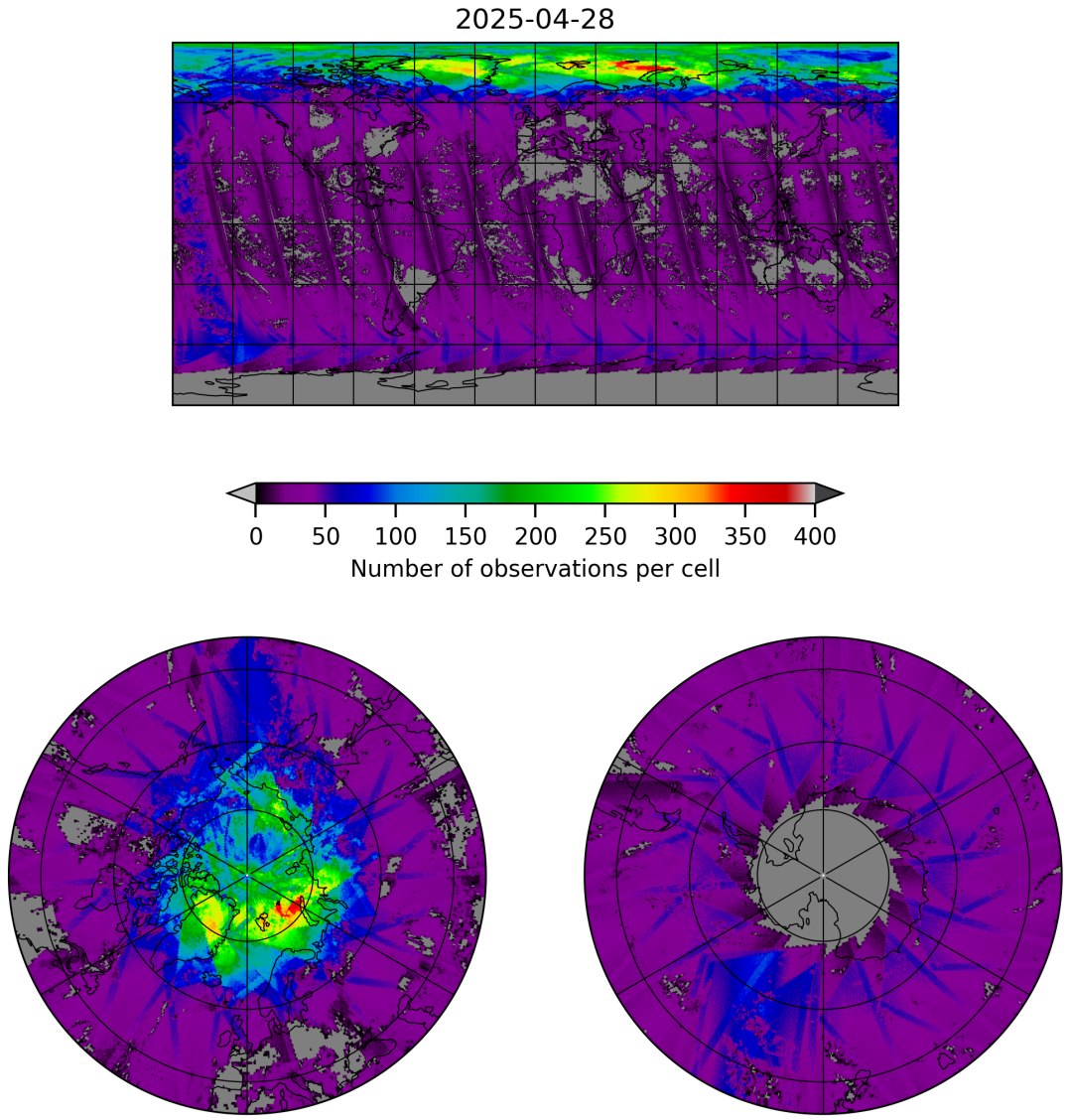

Figure 19: Map of the number of observations for 2025-04-28 to 2025-04-29

7 Zonal average

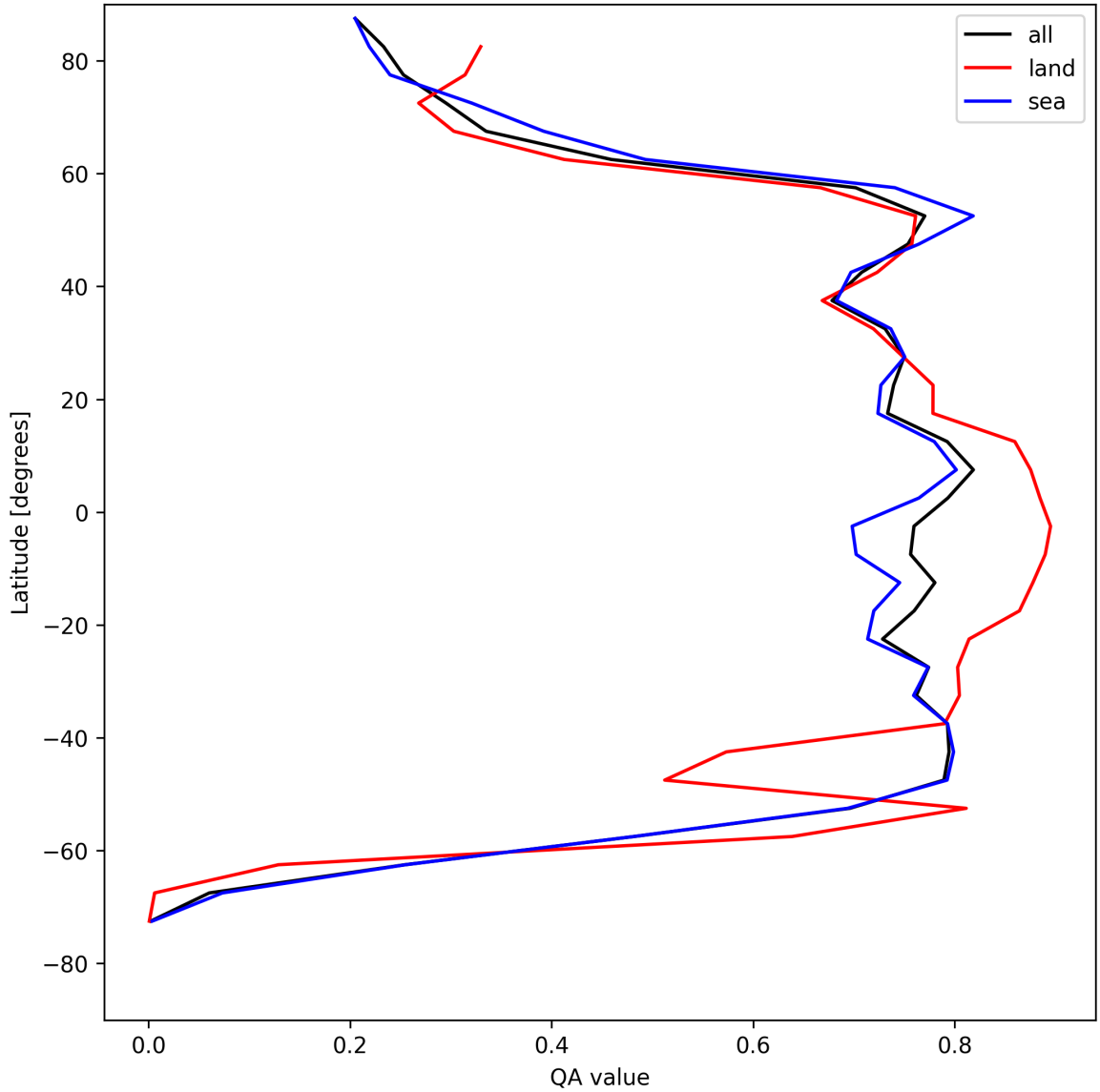

Figure 20: Zonal average of “QA value” for 2025-04-28 to 2025-04-29.

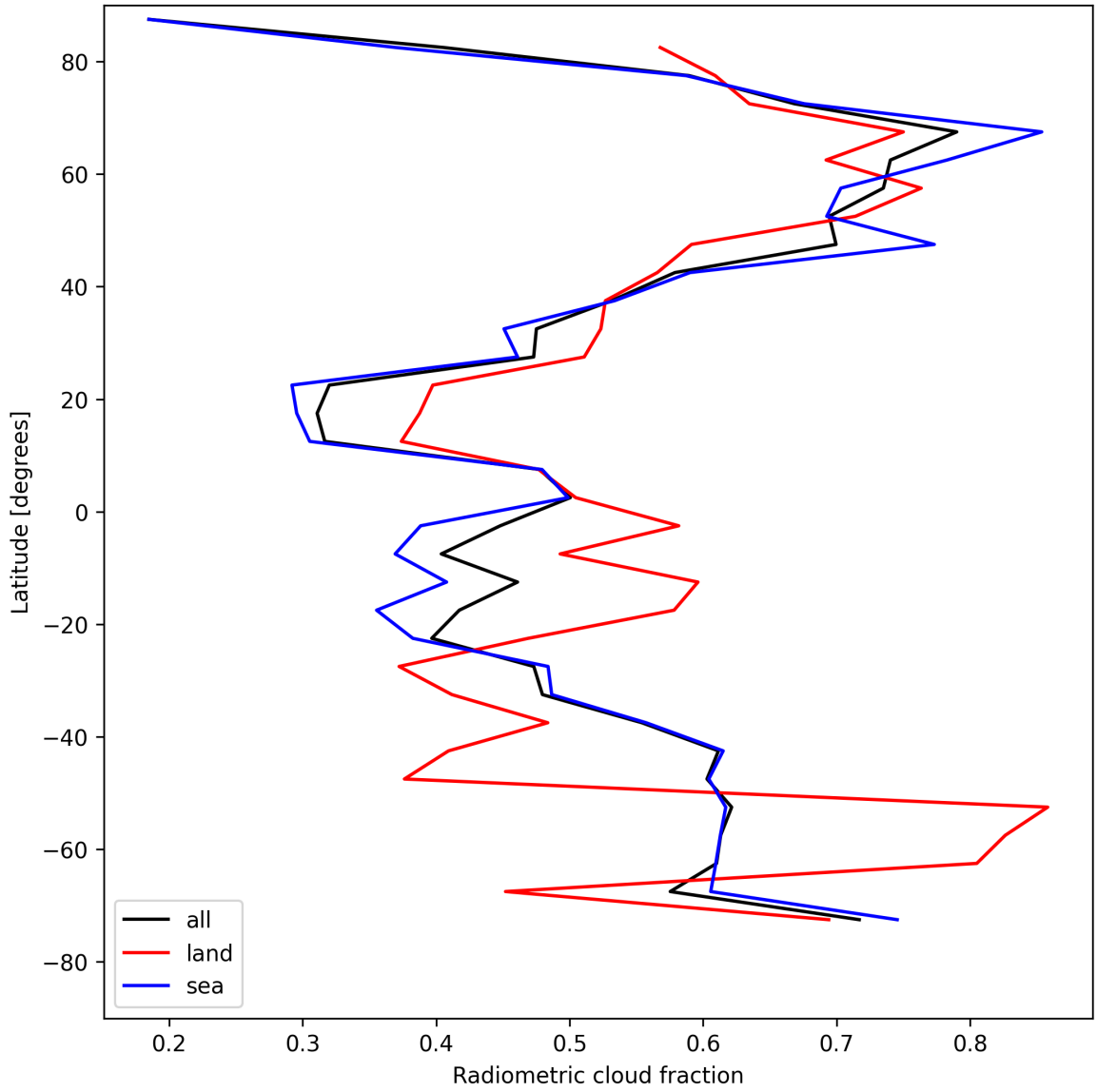

Figure 21: Zonal average of “Radiometric cloud fraction” for 2025-04-28 to 2025-04-29.

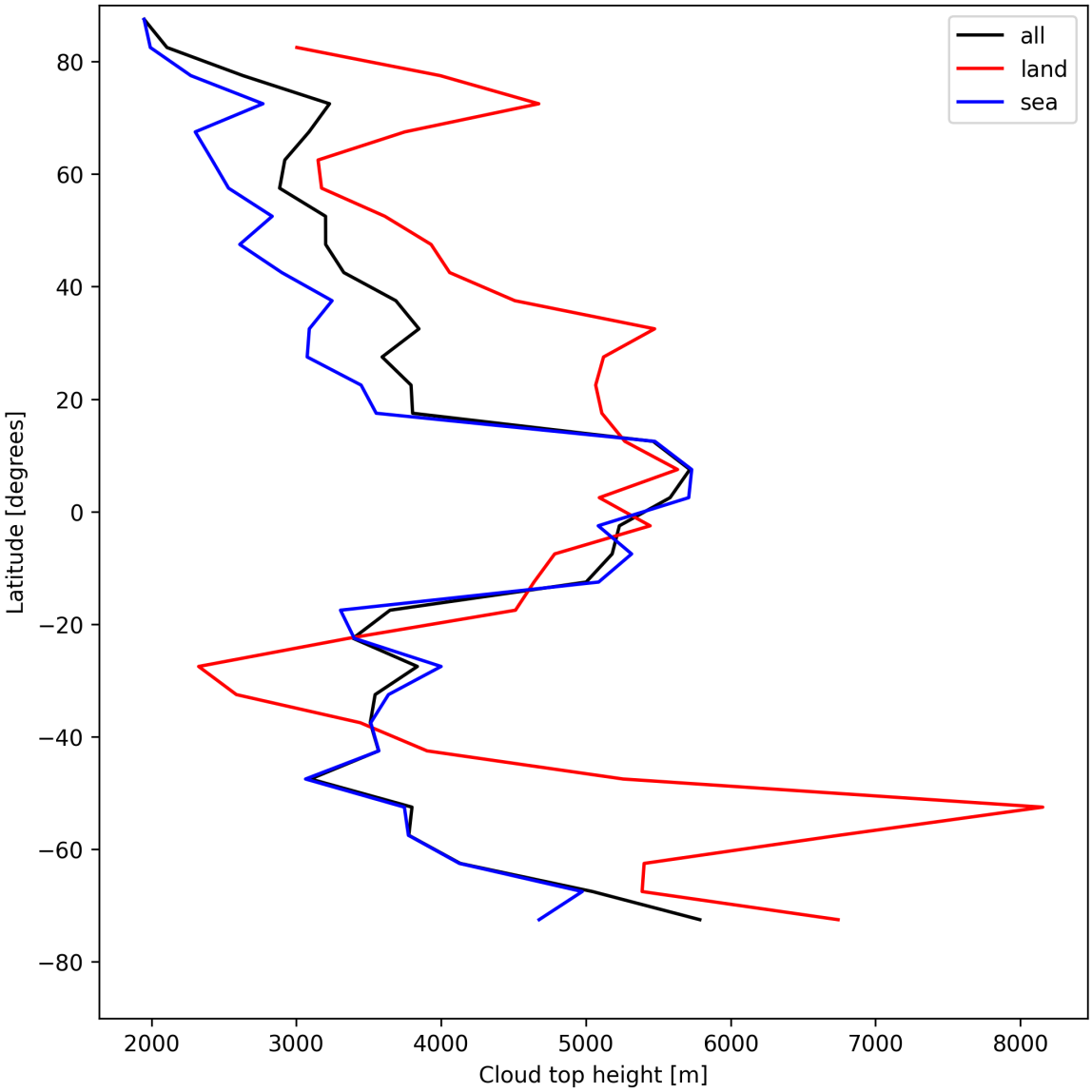

Figure 22: Zonal average of “Cloud top height” for 2025-04-28 to 2025-04-29.

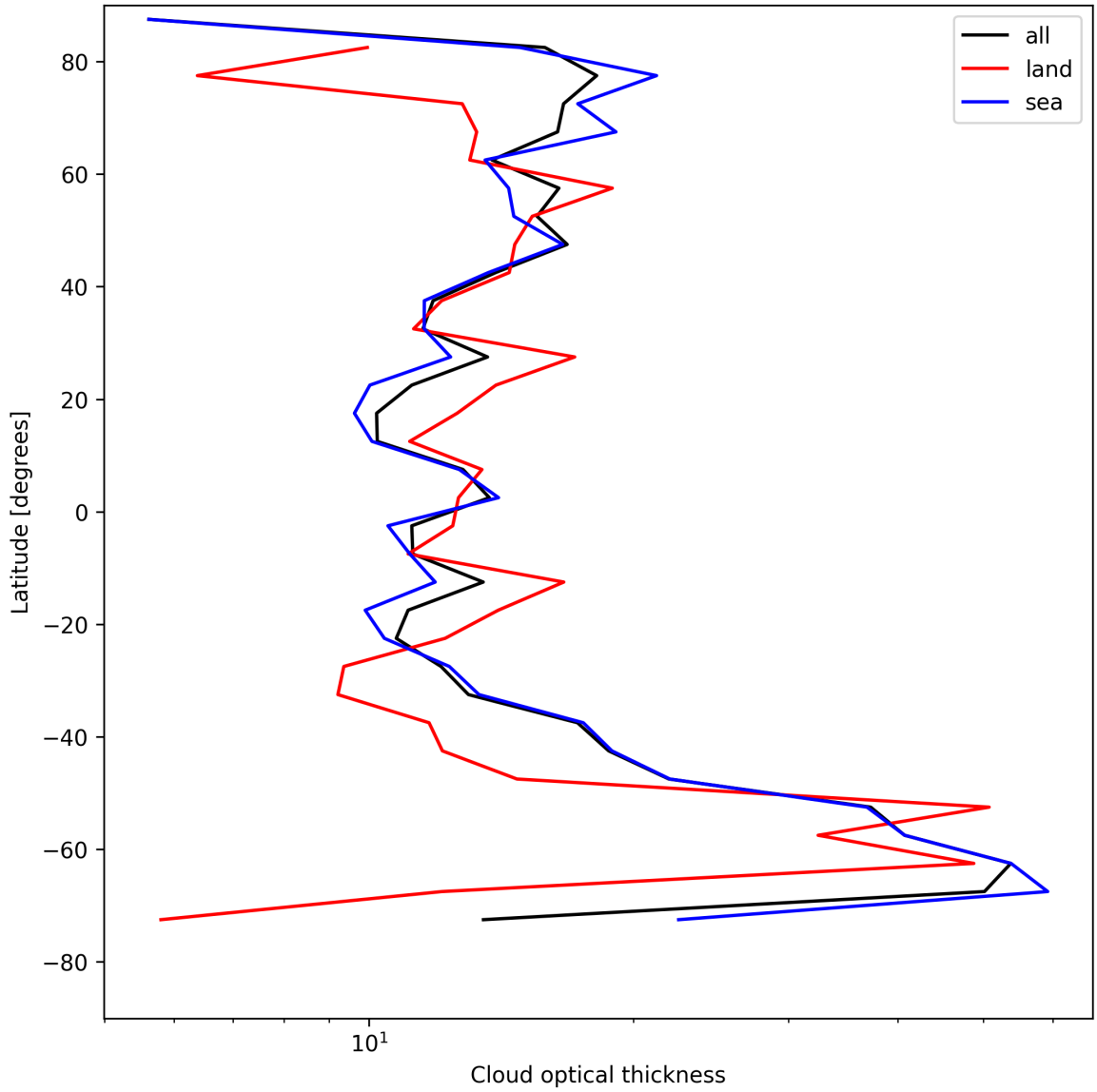

Figure 23: Zonal average of “Cloud optical thickness” for 2025-04-28 to 2025-04-29.

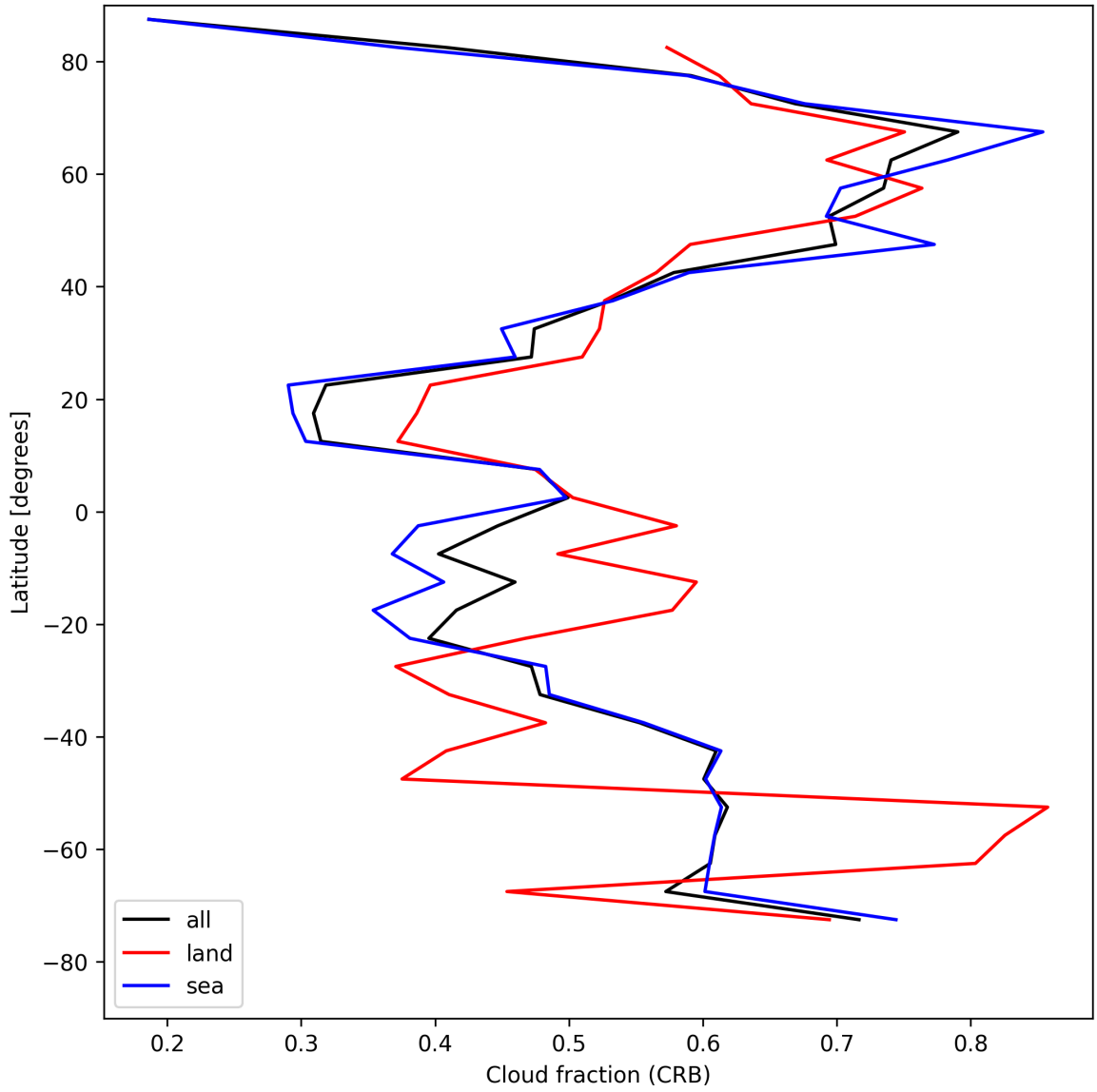

Figure 24: Zonal average of “Cloud fraction (CRB)” for 2025-04-28 to 2025-04-29.

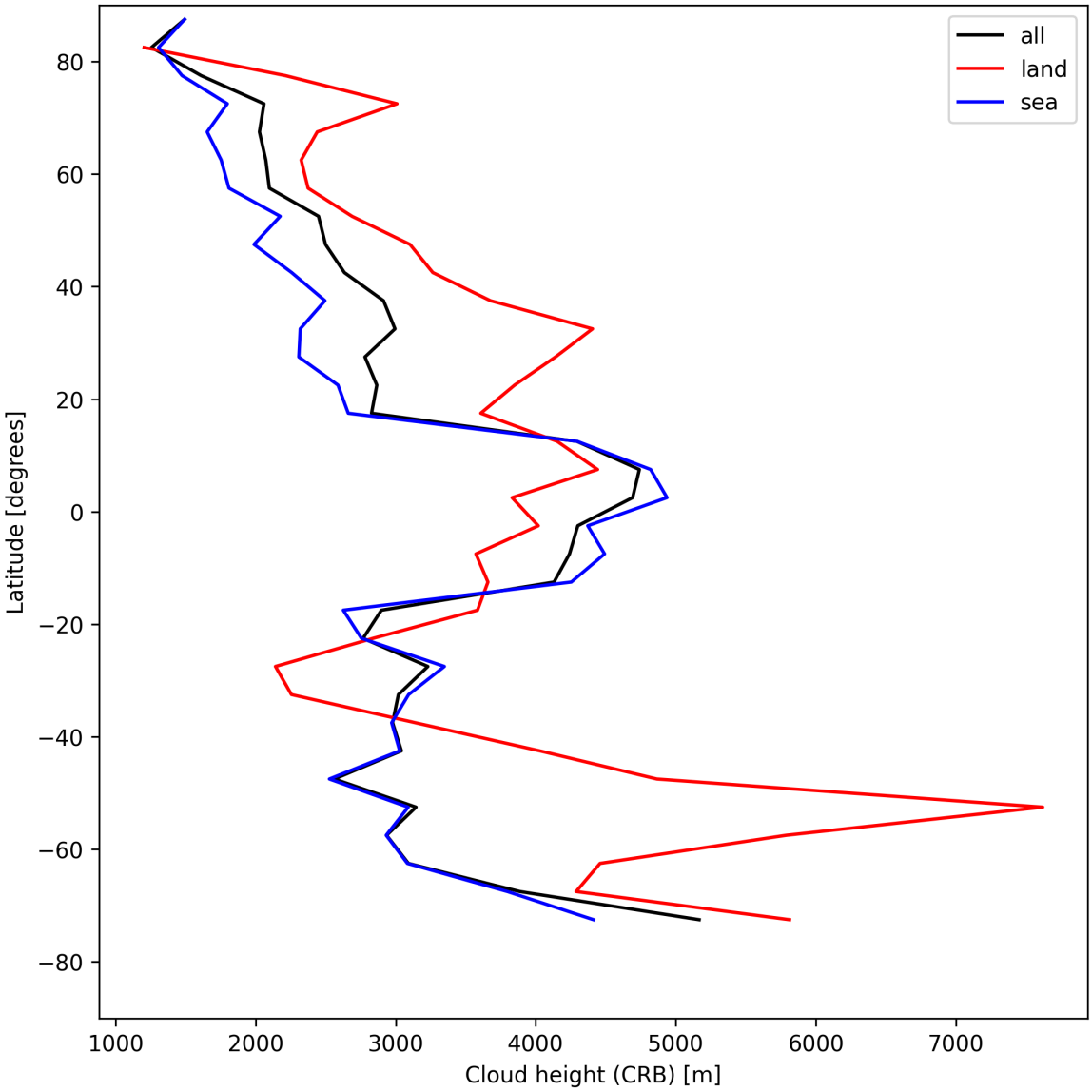

Figure 25: Zonal average of “Cloud height (CRB)” for 2025-04-28 to 2025-04-29.

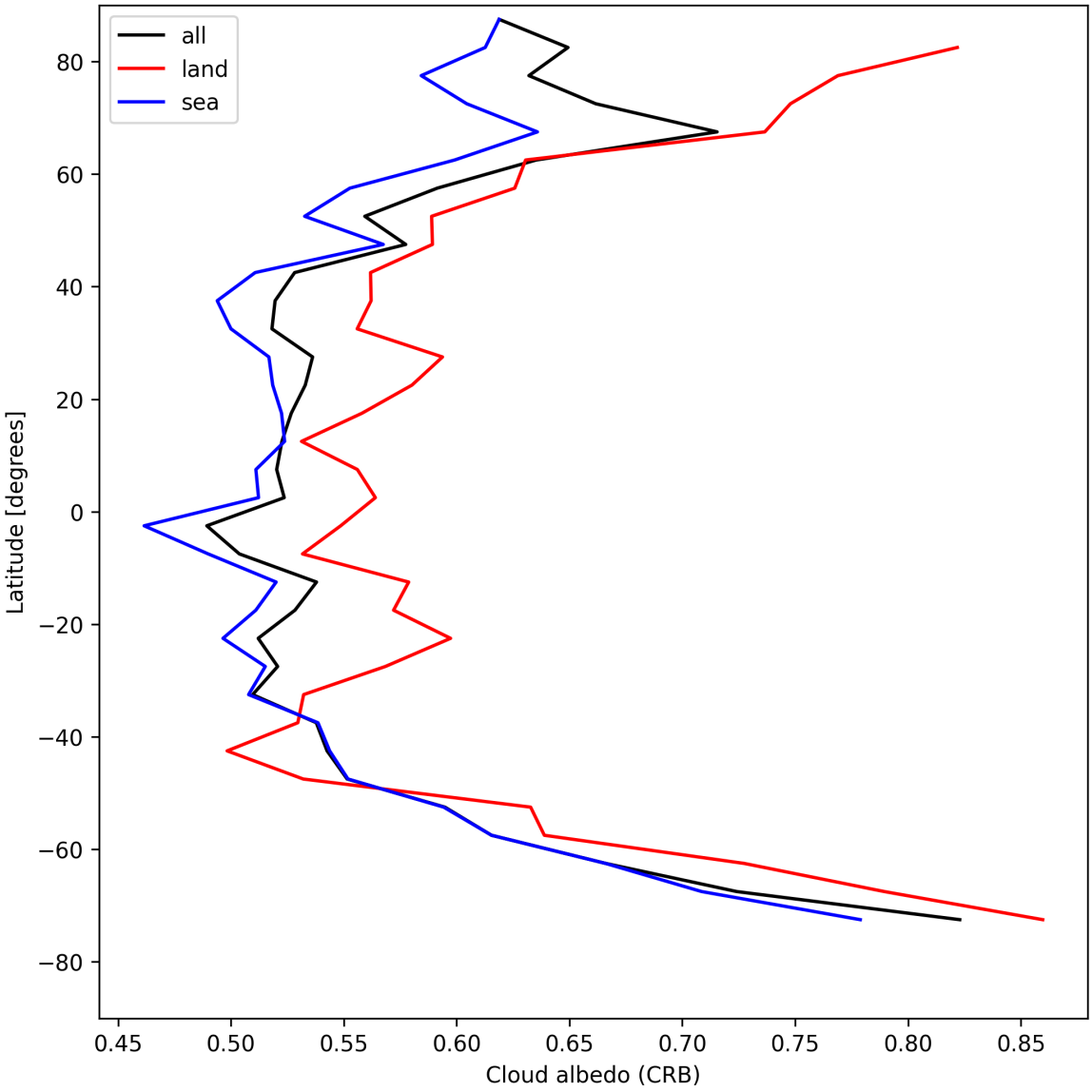

Figure 26: Zonal average of “Cloud albedo (CRB)” for 2025-04-28 to 2025-04-29.

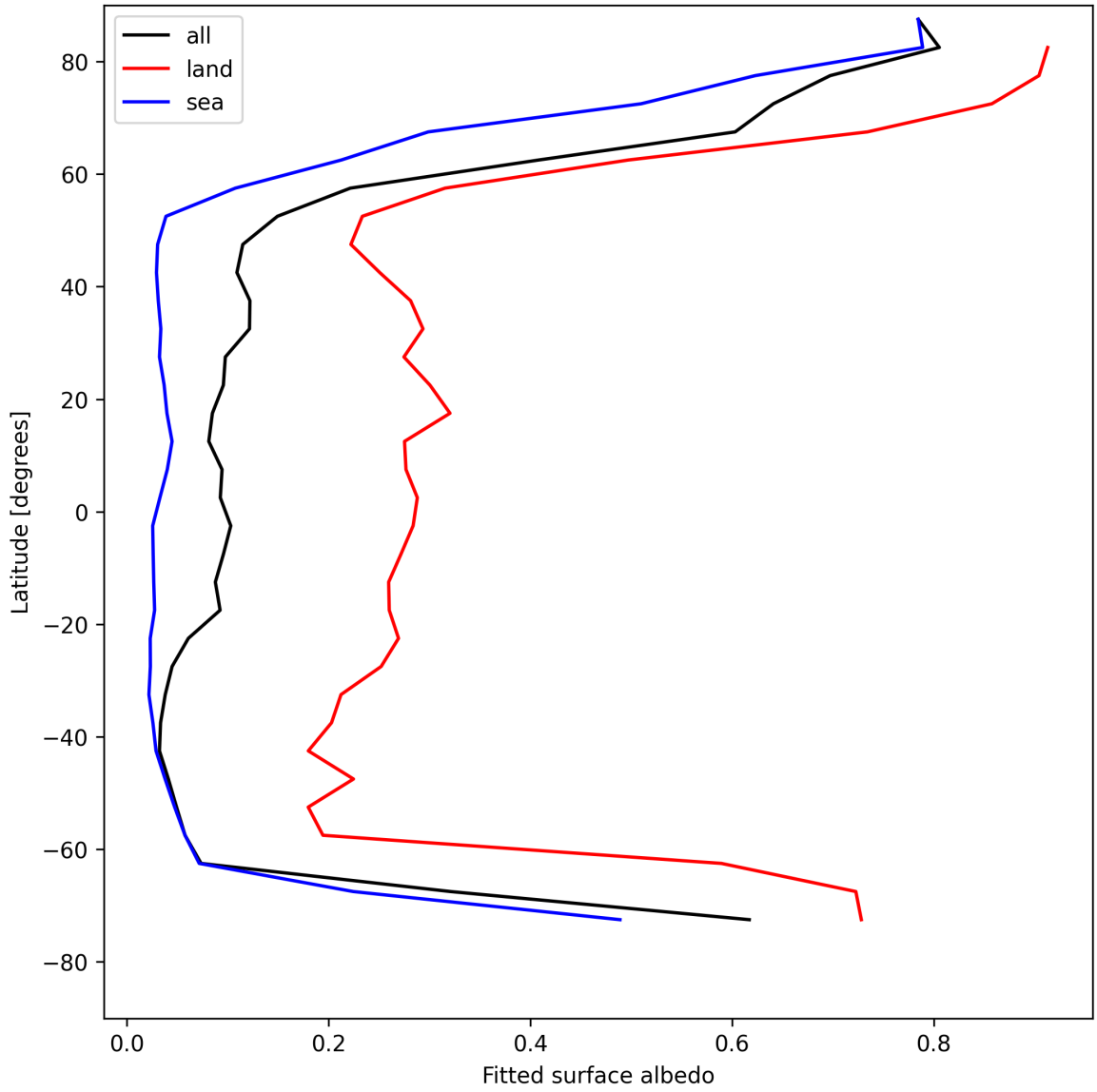

Figure 27: Zonal average of “Fitted surface albedo” for 2025-04-28 to 2025-04-29.

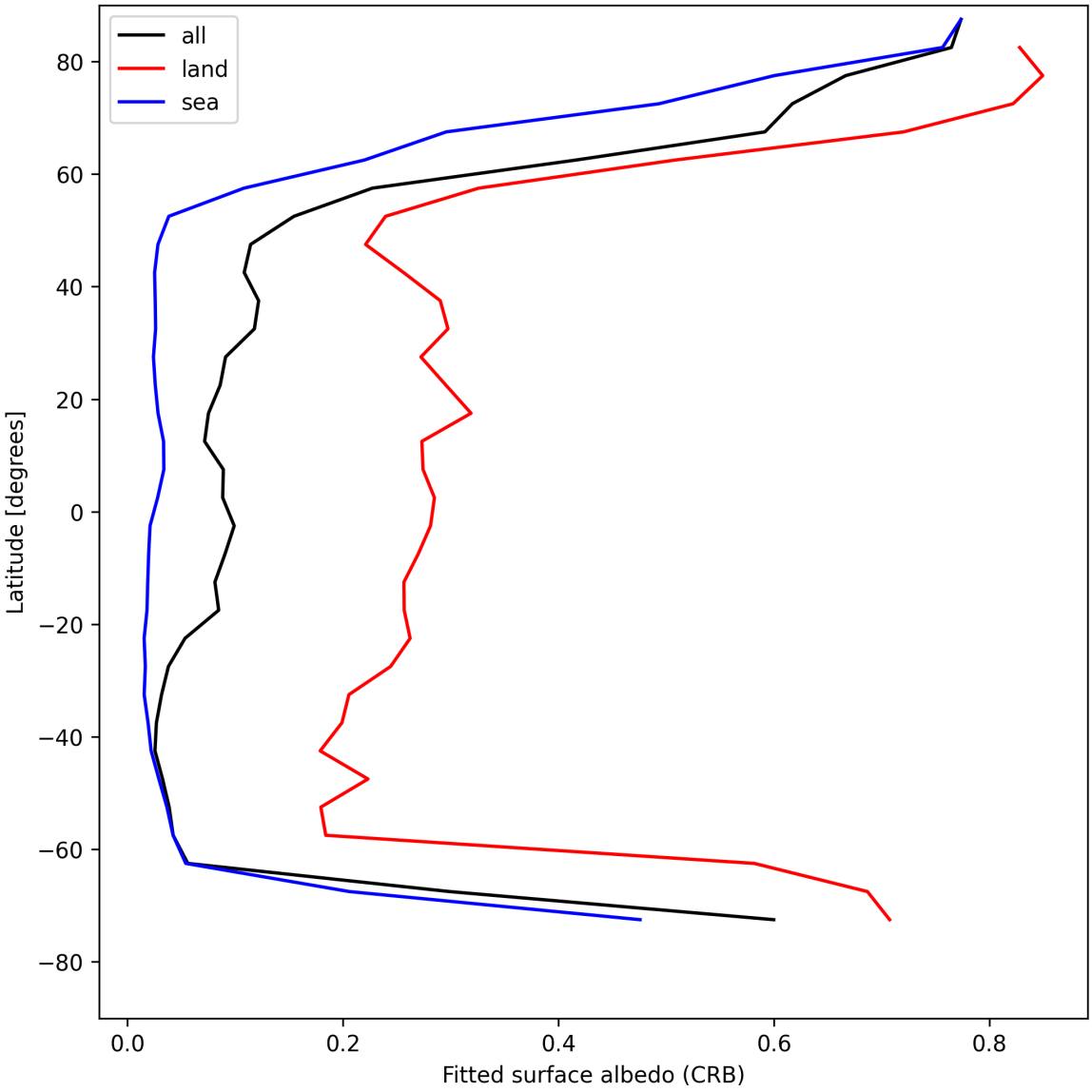

Figure 28: Zonal average of “Fitted surface albedo (CRB)” for 2025-04-28 to 2025-04-29.

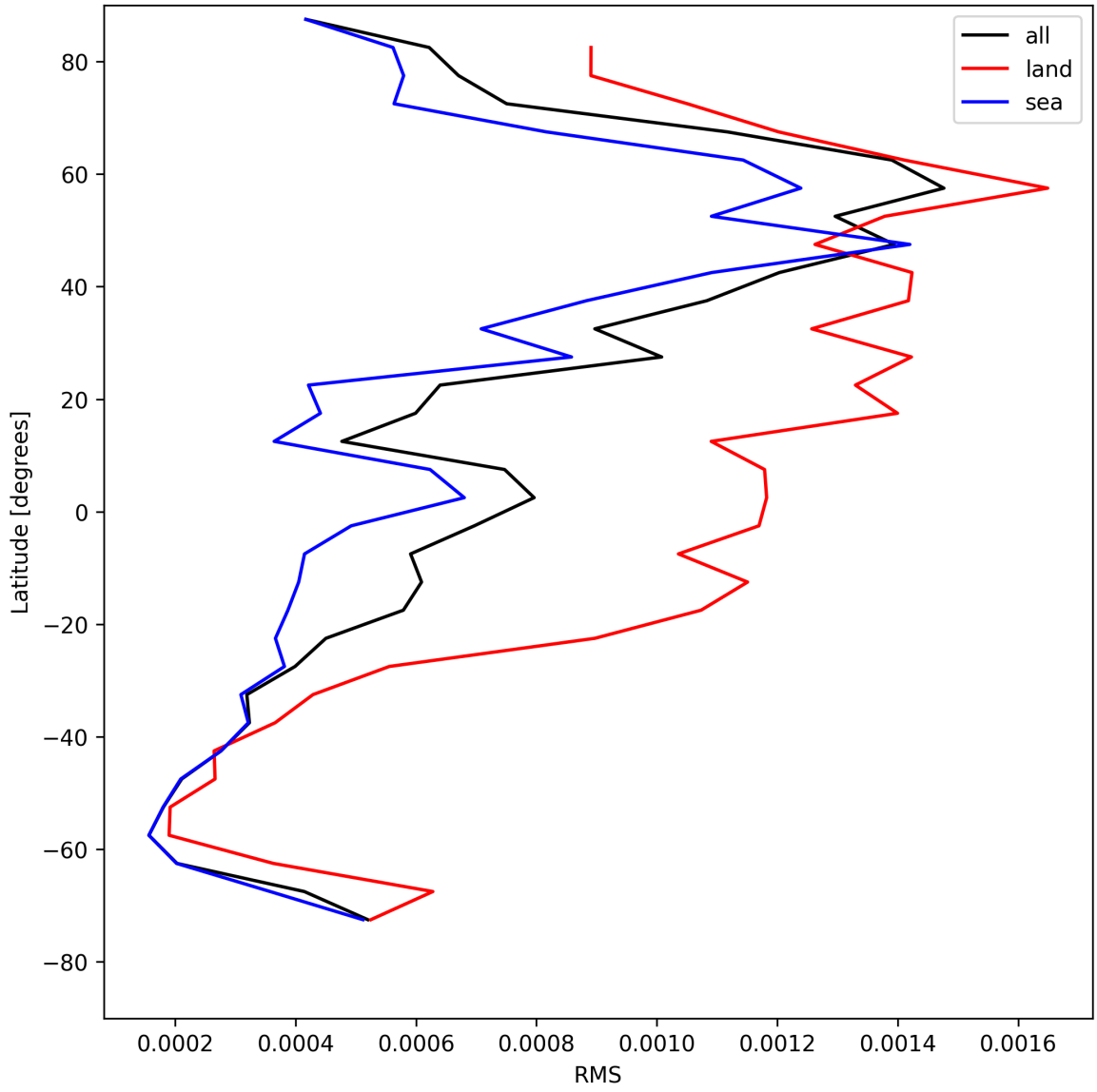

Figure 29: Zonal average of “RMS” for 2025-04-28 to 2025-04-29.

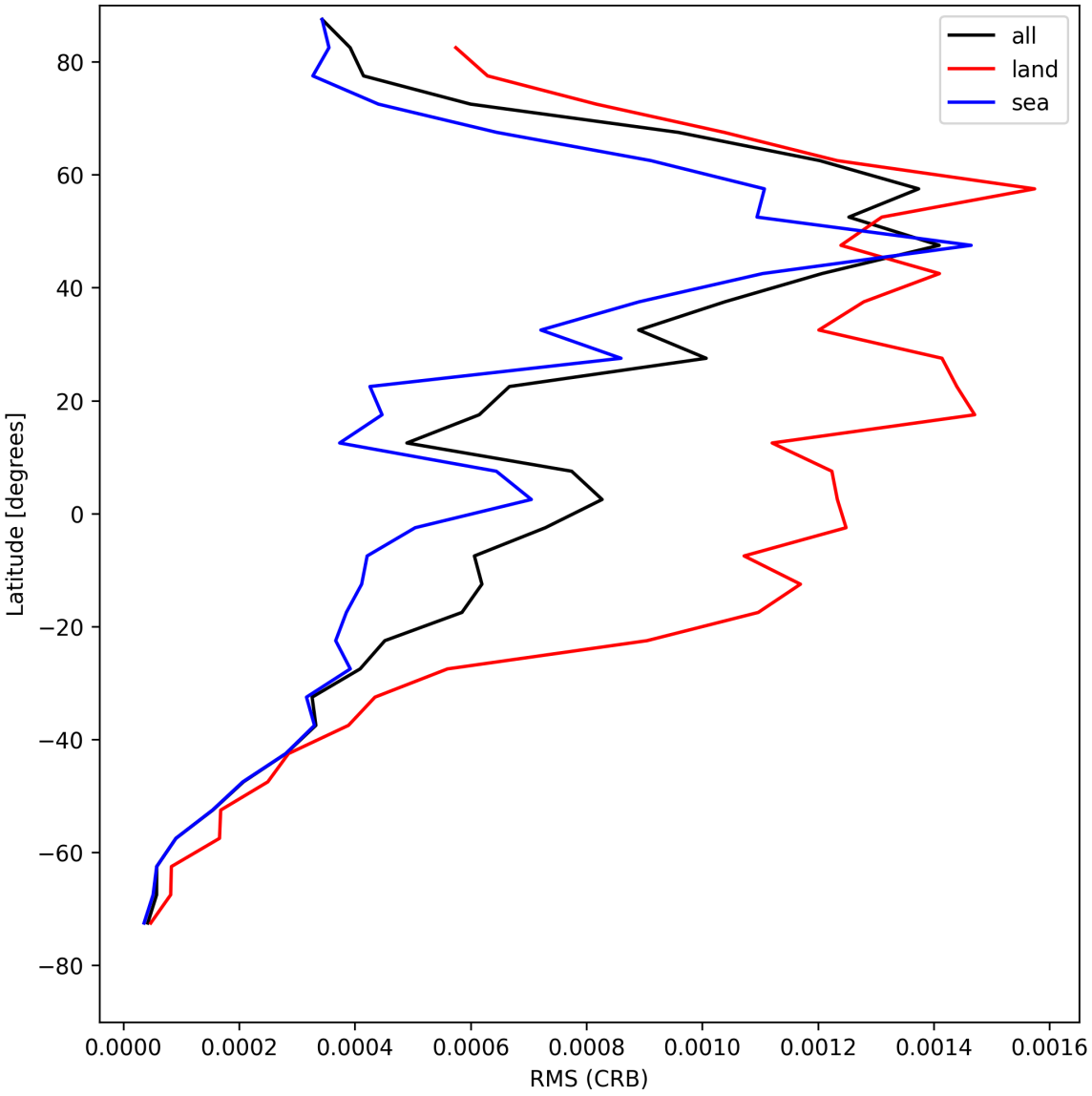

Figure 30: Zonal average of “RMS (CRB)” for 2025-04-28 to 2025-04-29.

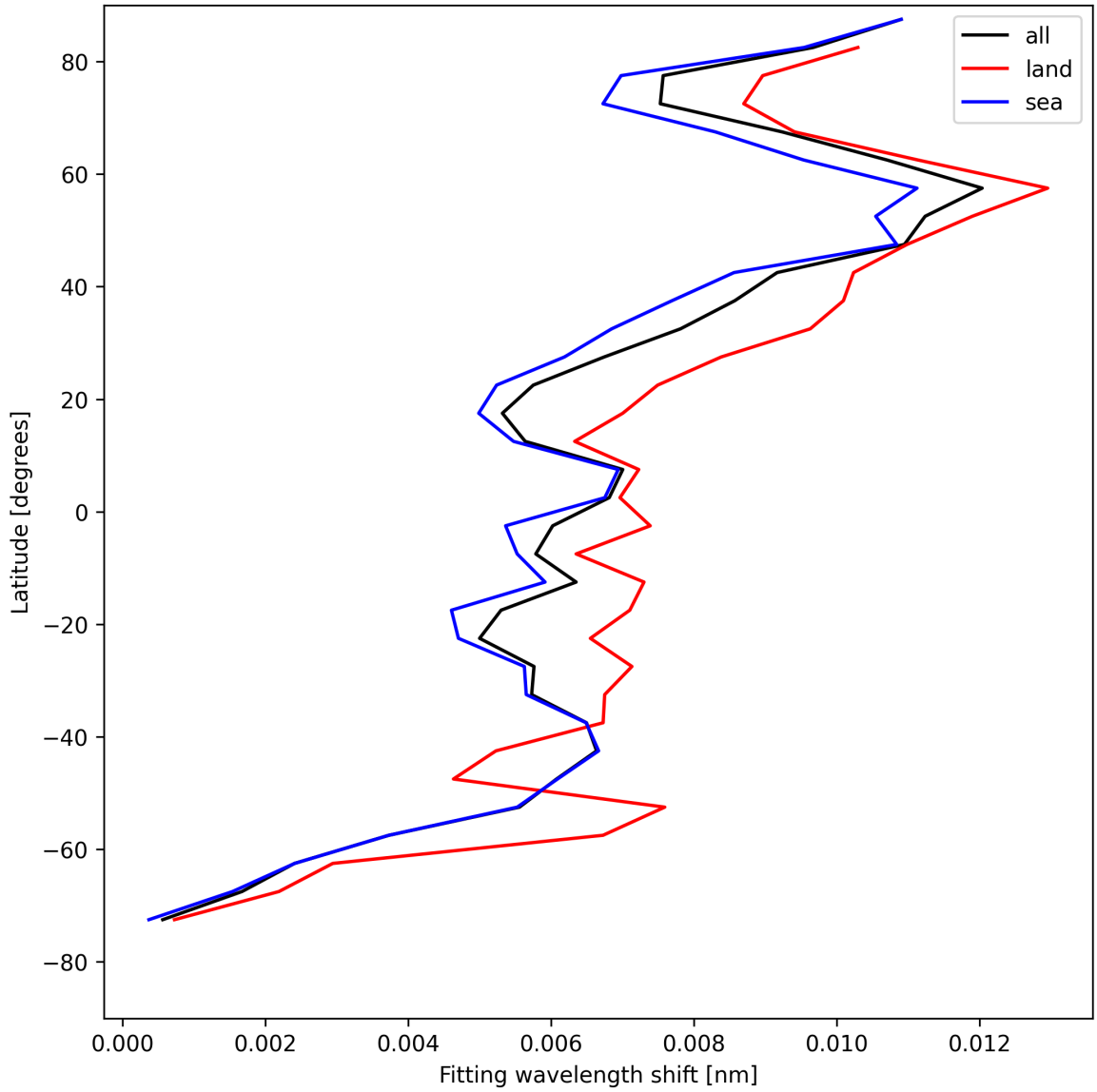

Figure 31: Zonal average of “Fitting wavelength shift” for 2025-04-28 to 2025-04-29.

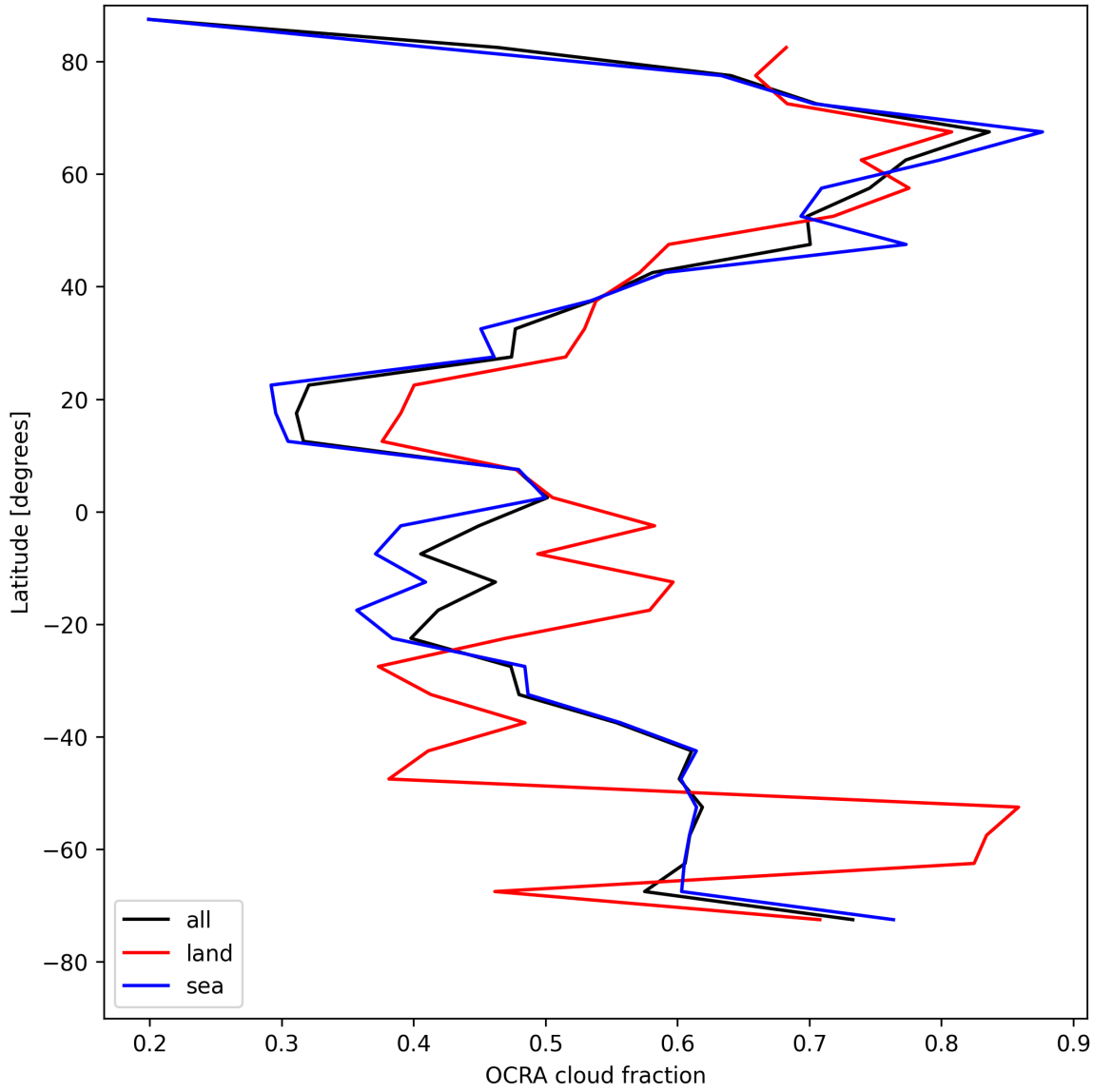

Figure 32: Zonal average of “OCRA cloud fraction” for 2025-04-28 to 2025-04-29.

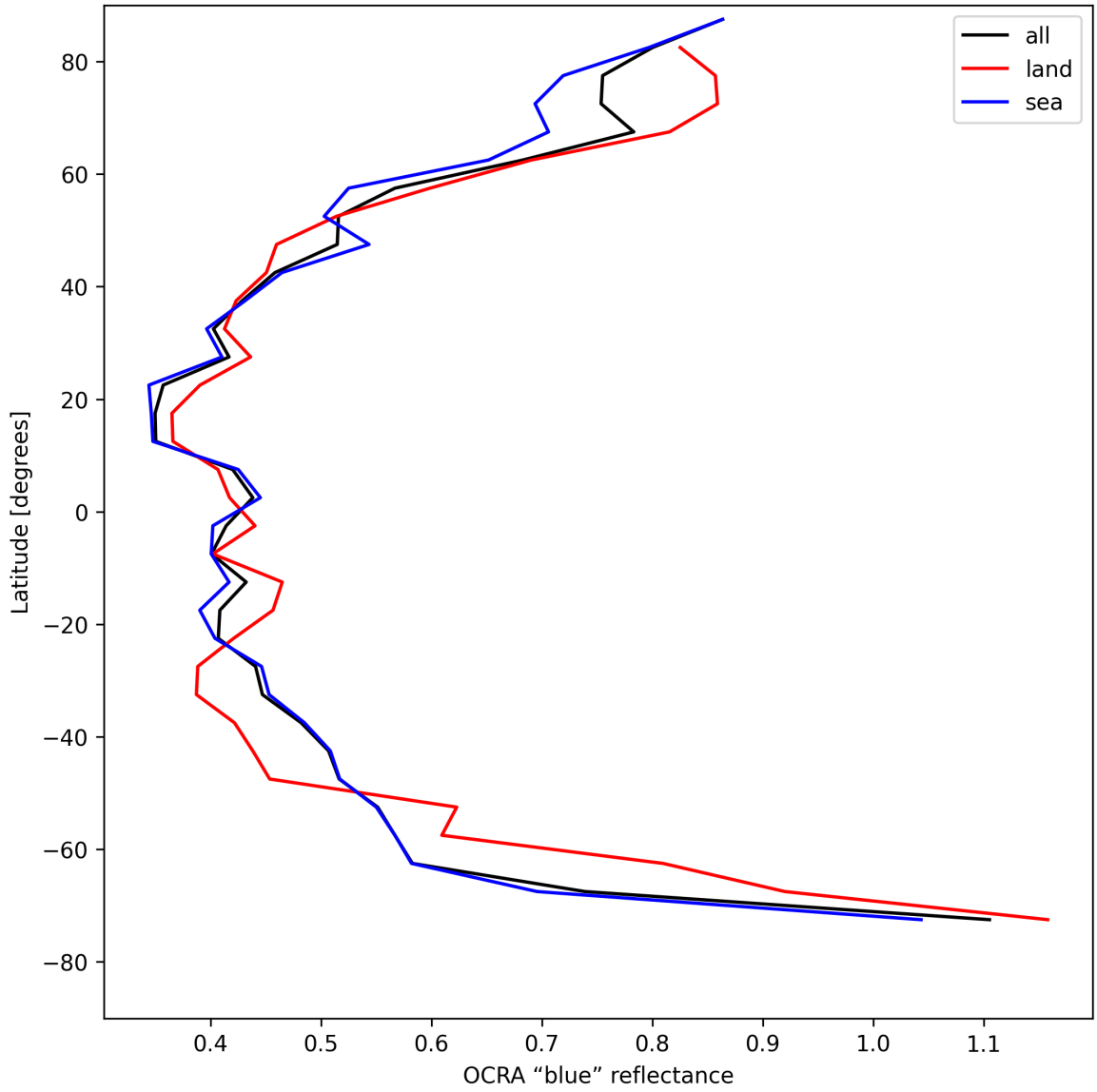

Figure 33: Zonal average of “OCRA “blue” reflectance” for 2025-04-28 to 2025-04-29.

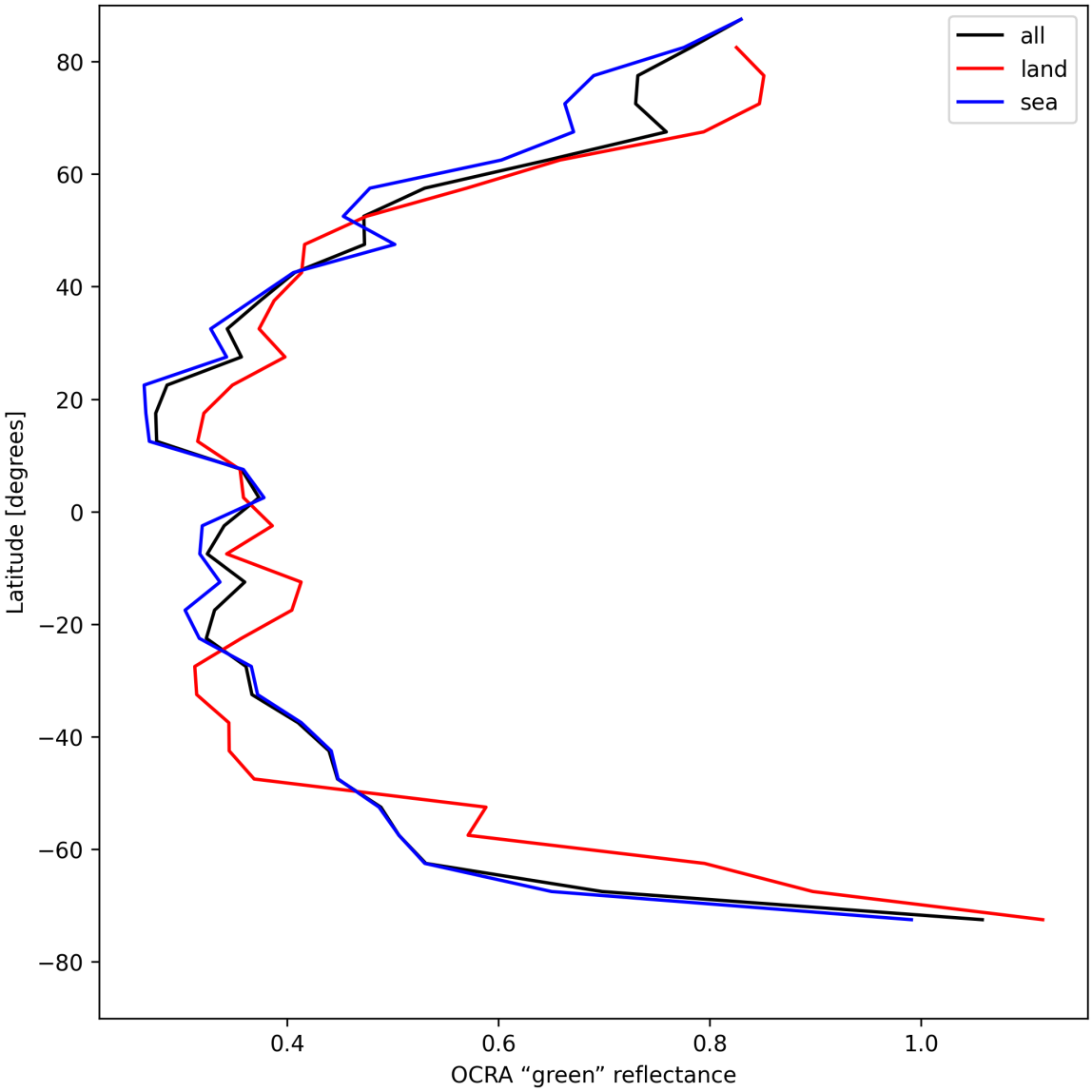

Figure 34: Zonal average of “OCRA “green” reflectance” for 2025-04-28 to 2025-04-29.

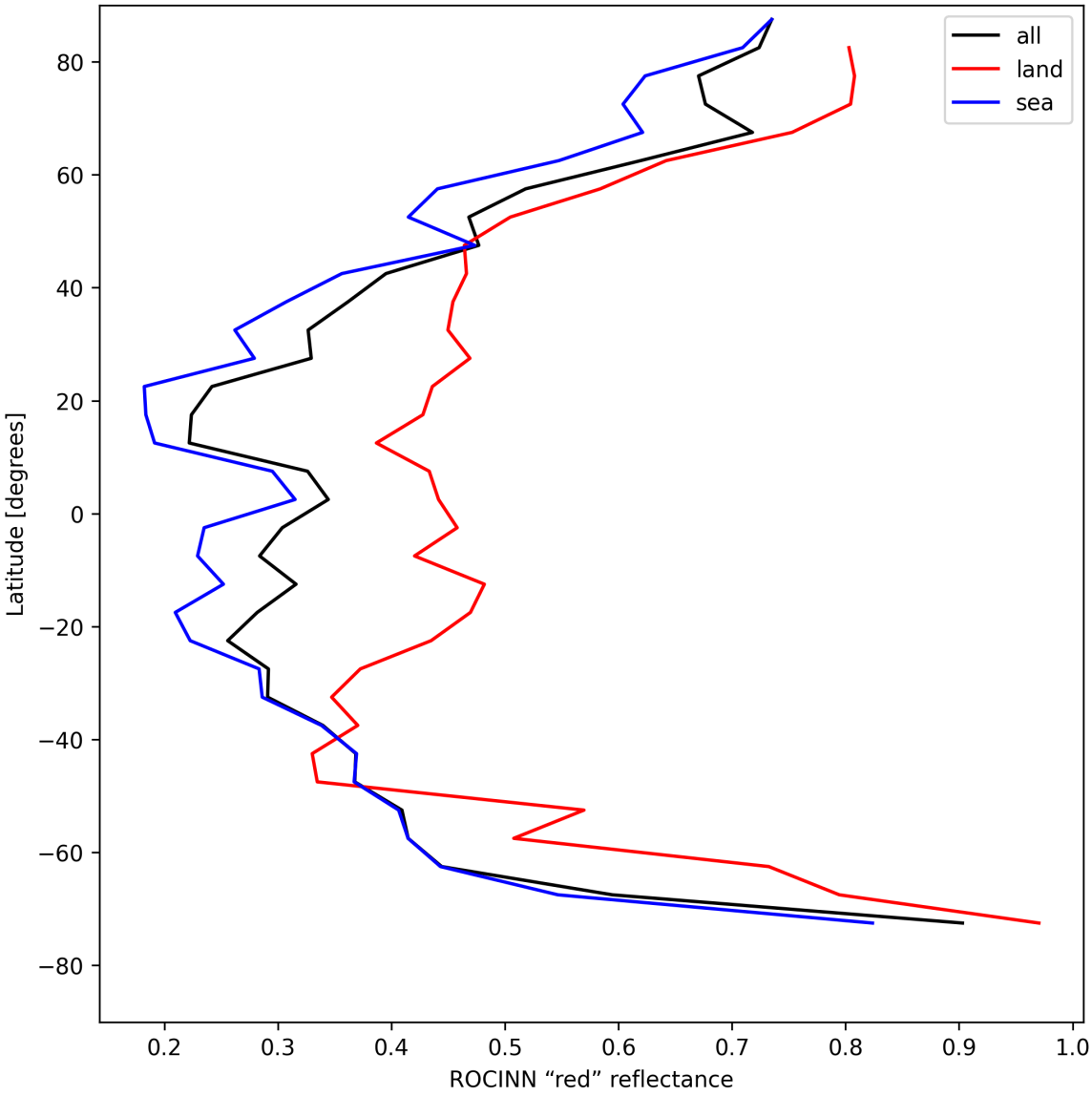

Figure 35: Zonal average of “ROCINN “red” reflectance” for 2025-04-28 to 2025-04-29.

8 Histograms

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

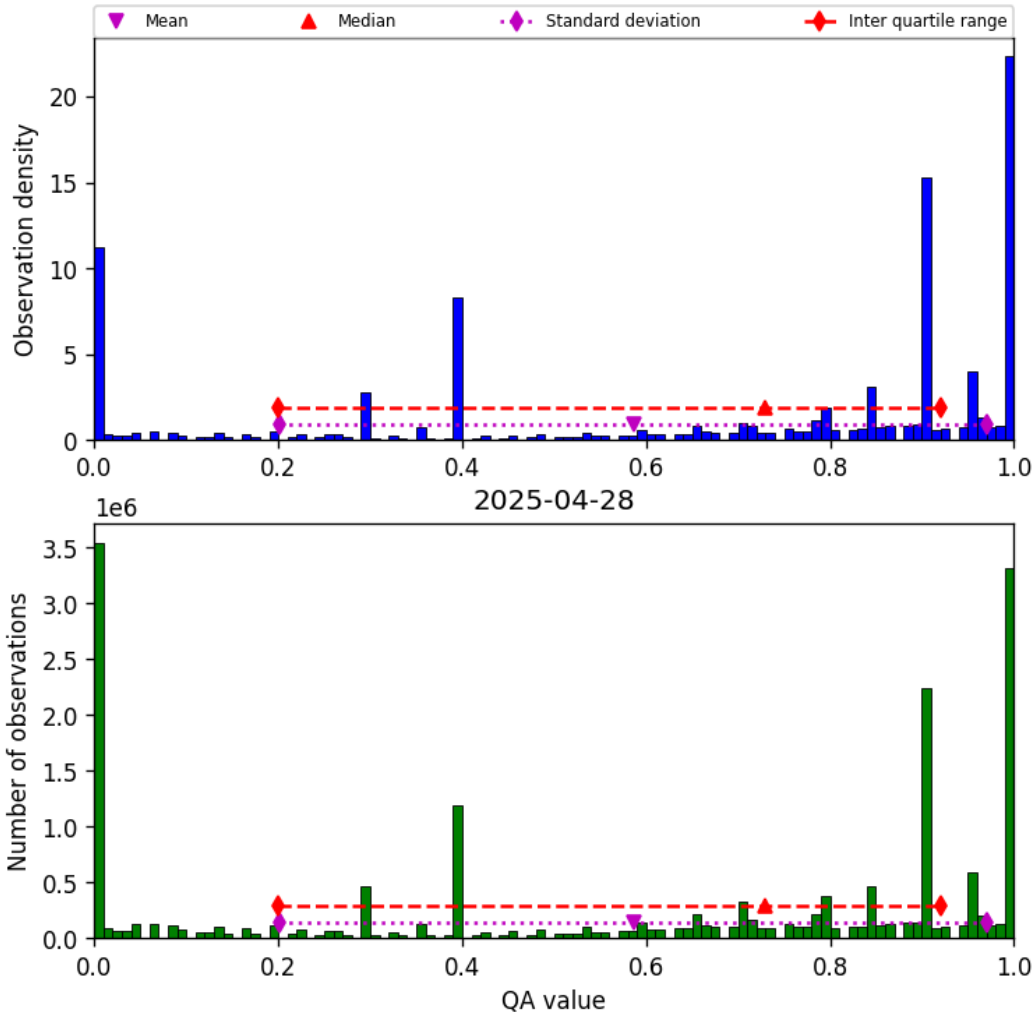

Figure 36: Histogram of “QA value” for 2025-04-28 to 2025-04-29

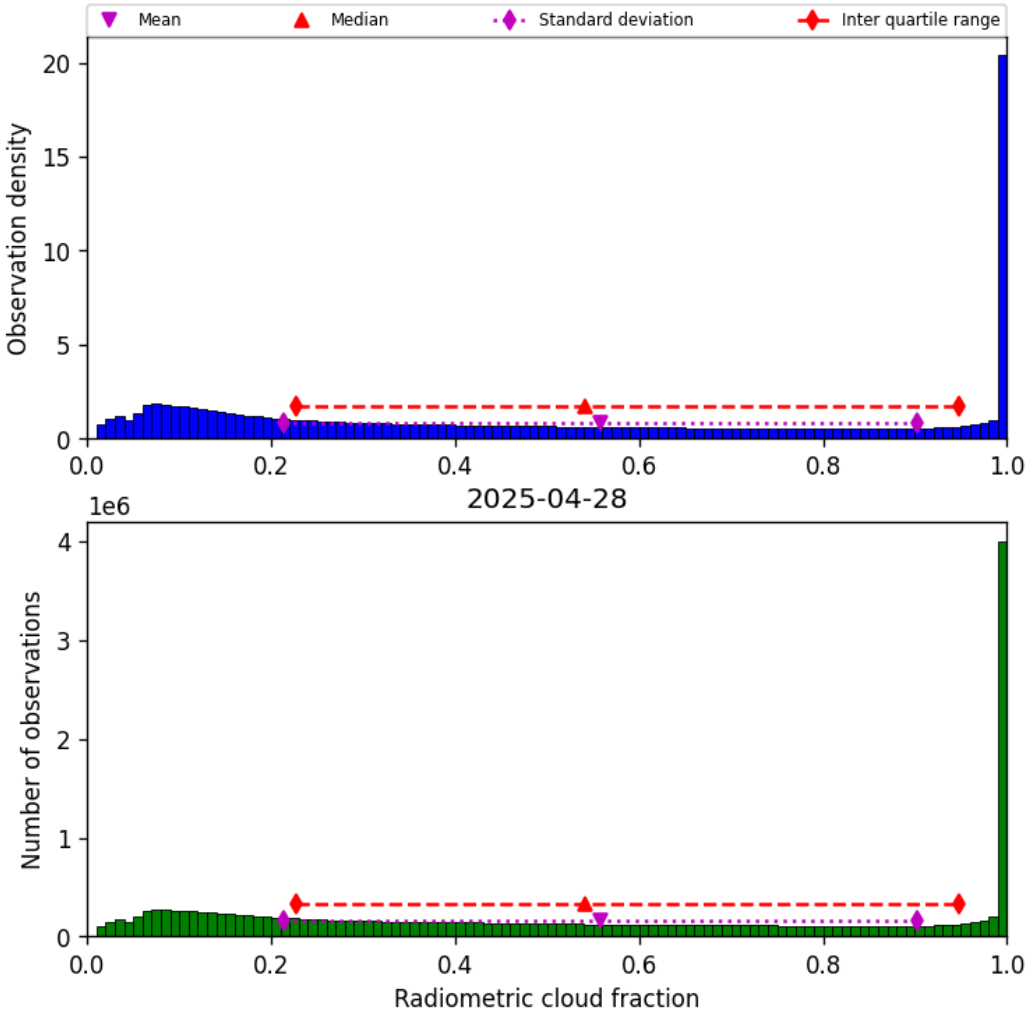

Figure 37: Histogram of “Radiometric cloud fraction” for 2025-04-28 to 2025-04-29

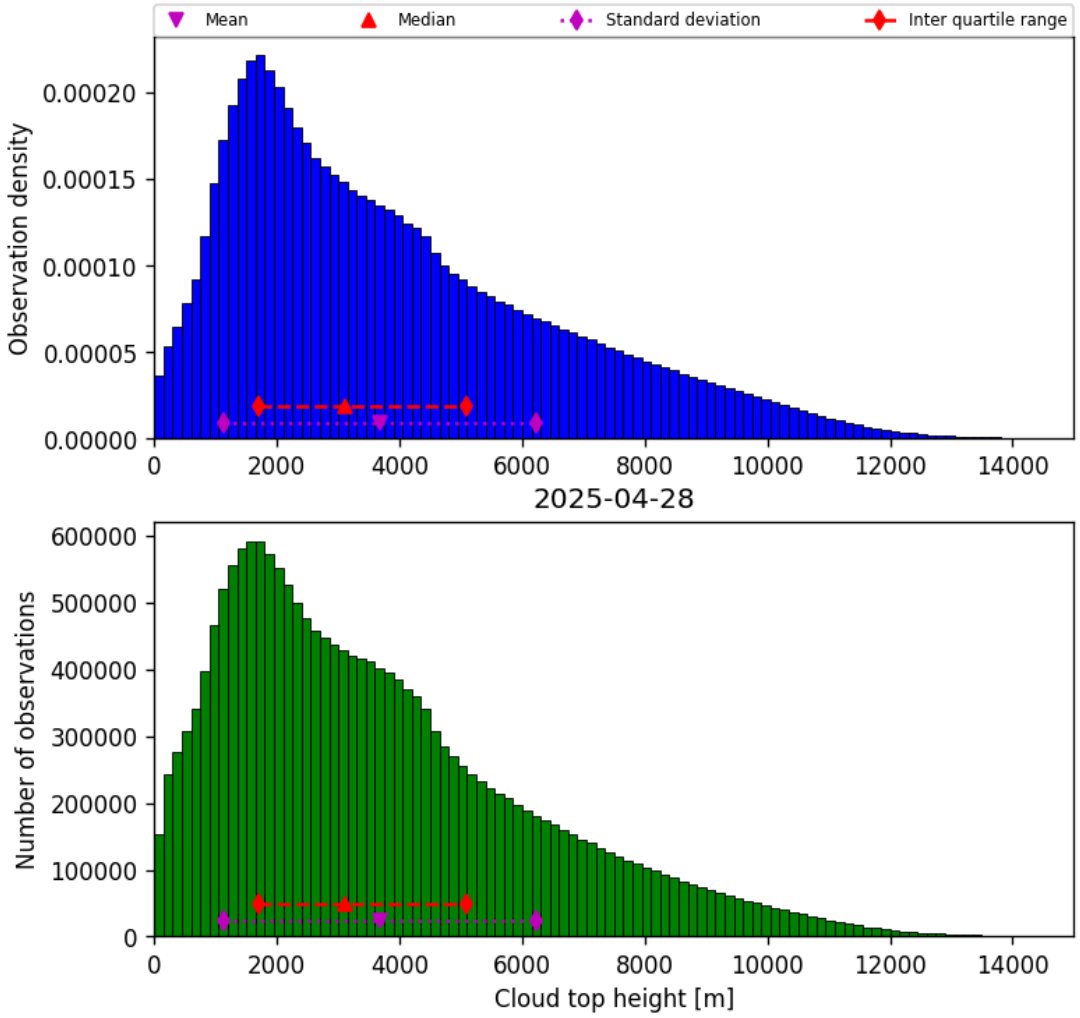

Figure 38: Histogram of “Cloud top height” for 2025-04-28 to 2025-04-29

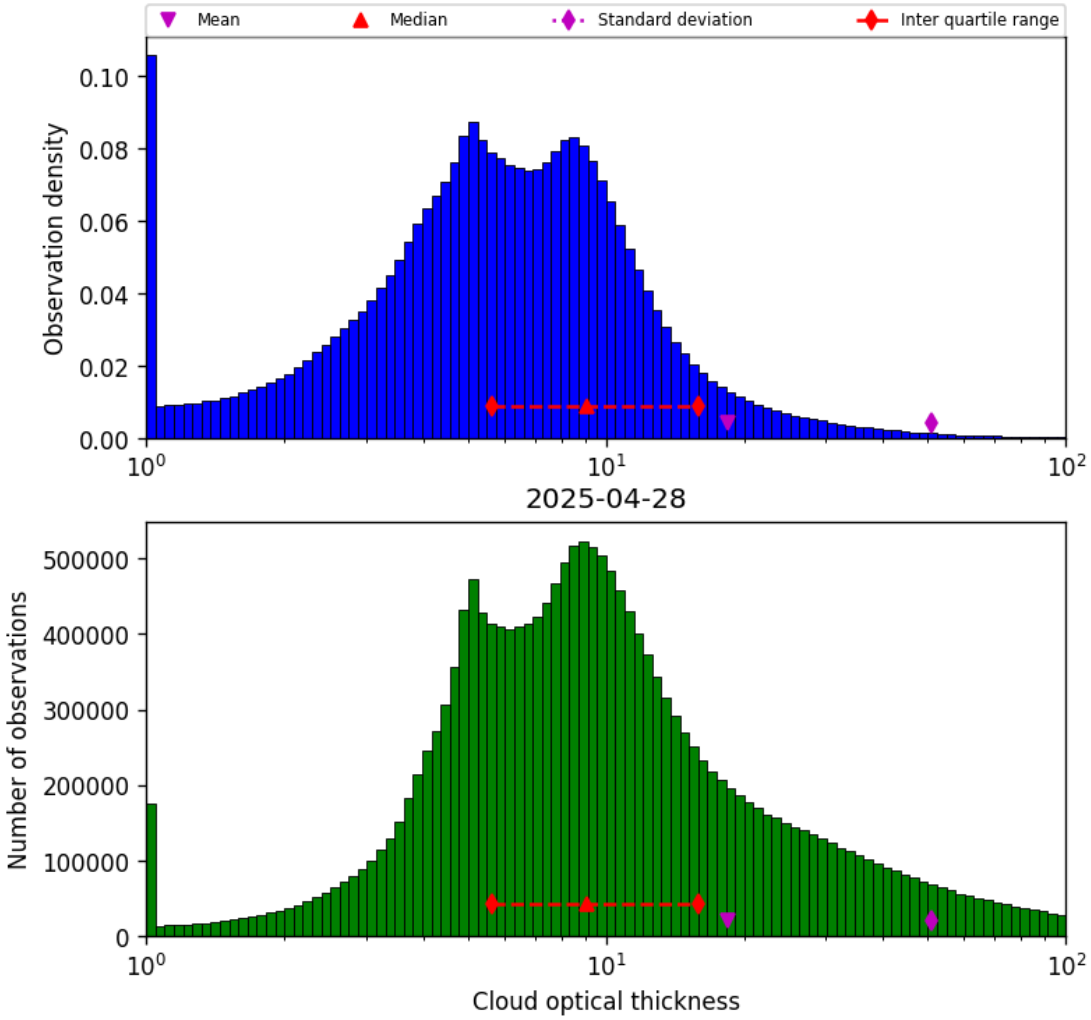

Figure 39: Histogram of “Cloud optical thickness” for 2025-04-28 to 2025-04-29

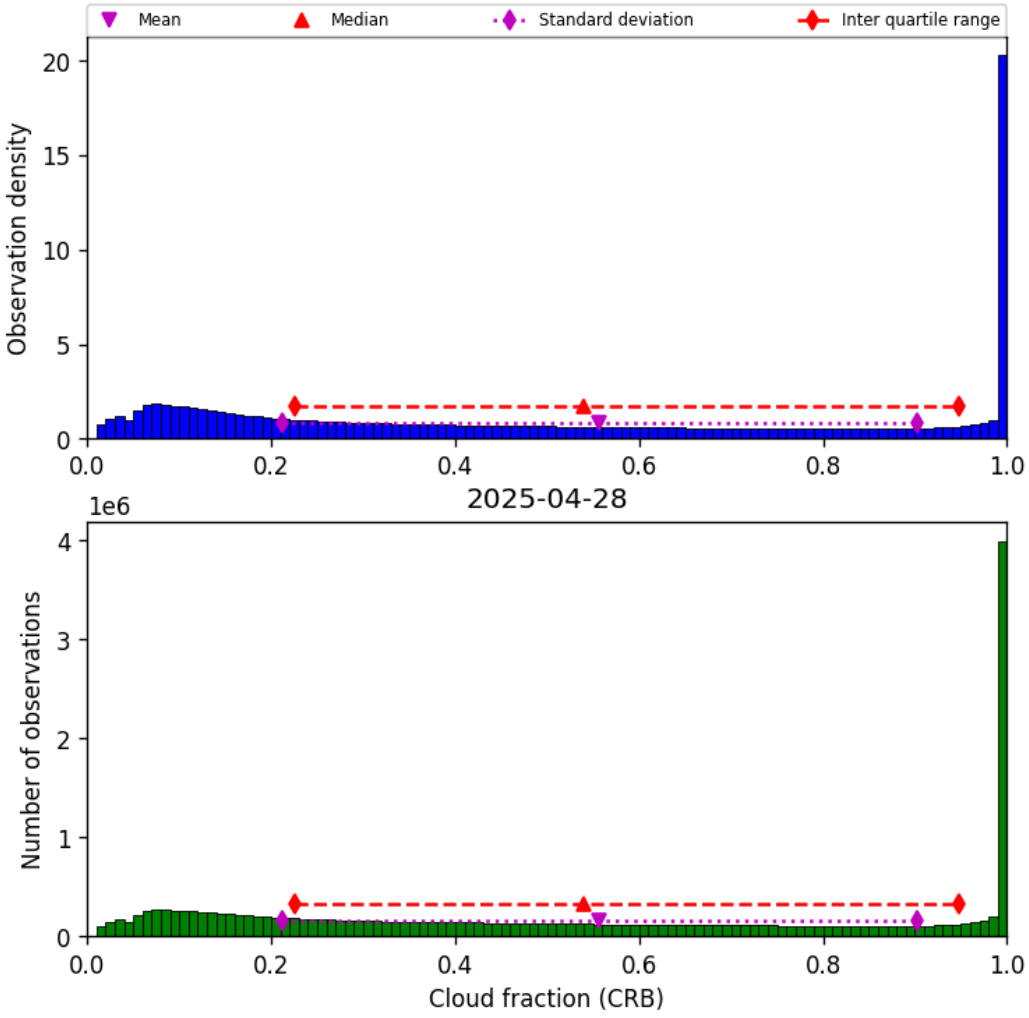

Figure 40: Histogram of “Cloud fraction (CRB)” for 2025-04-28 to 2025-04-29

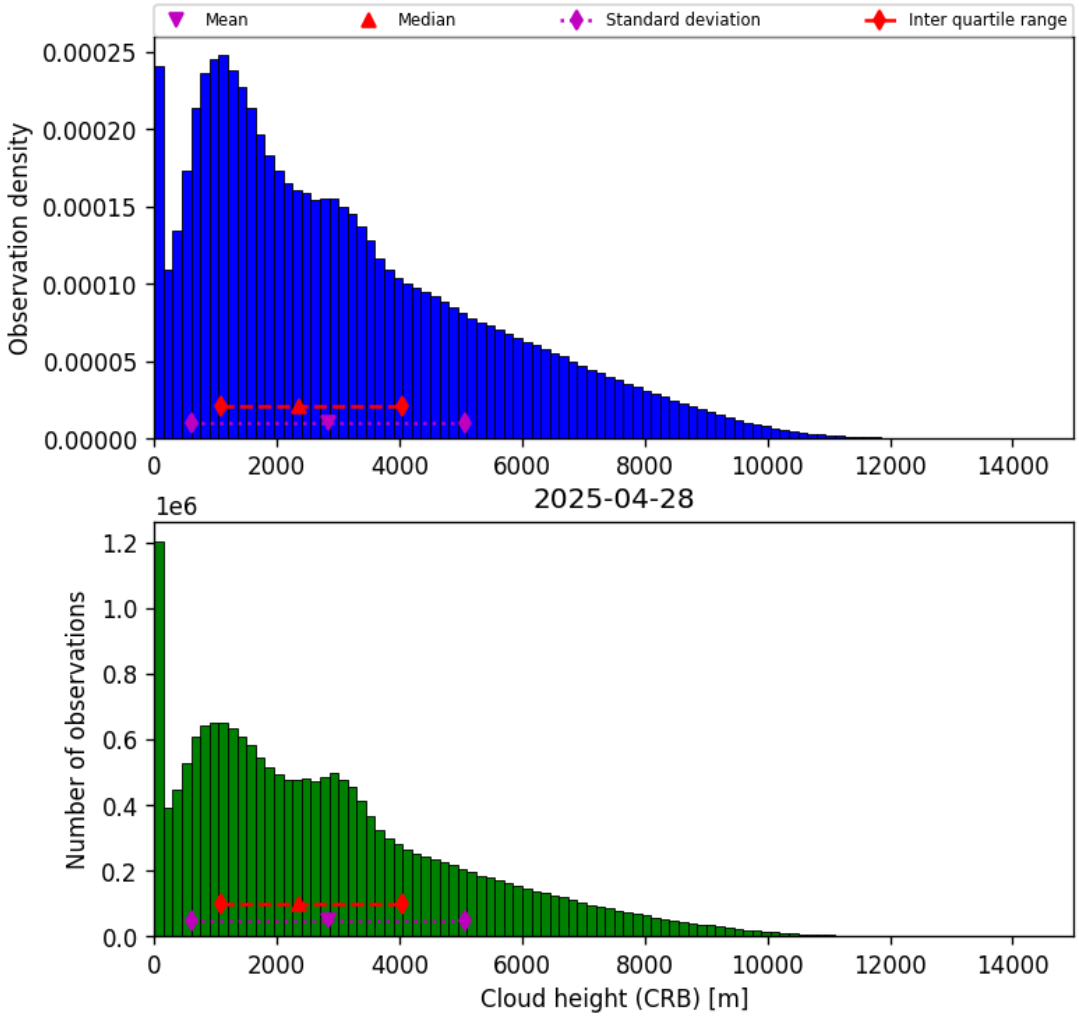

Figure 41: Histogram of “Cloud height (CRB)” for 2025-04-28 to 2025-04-29

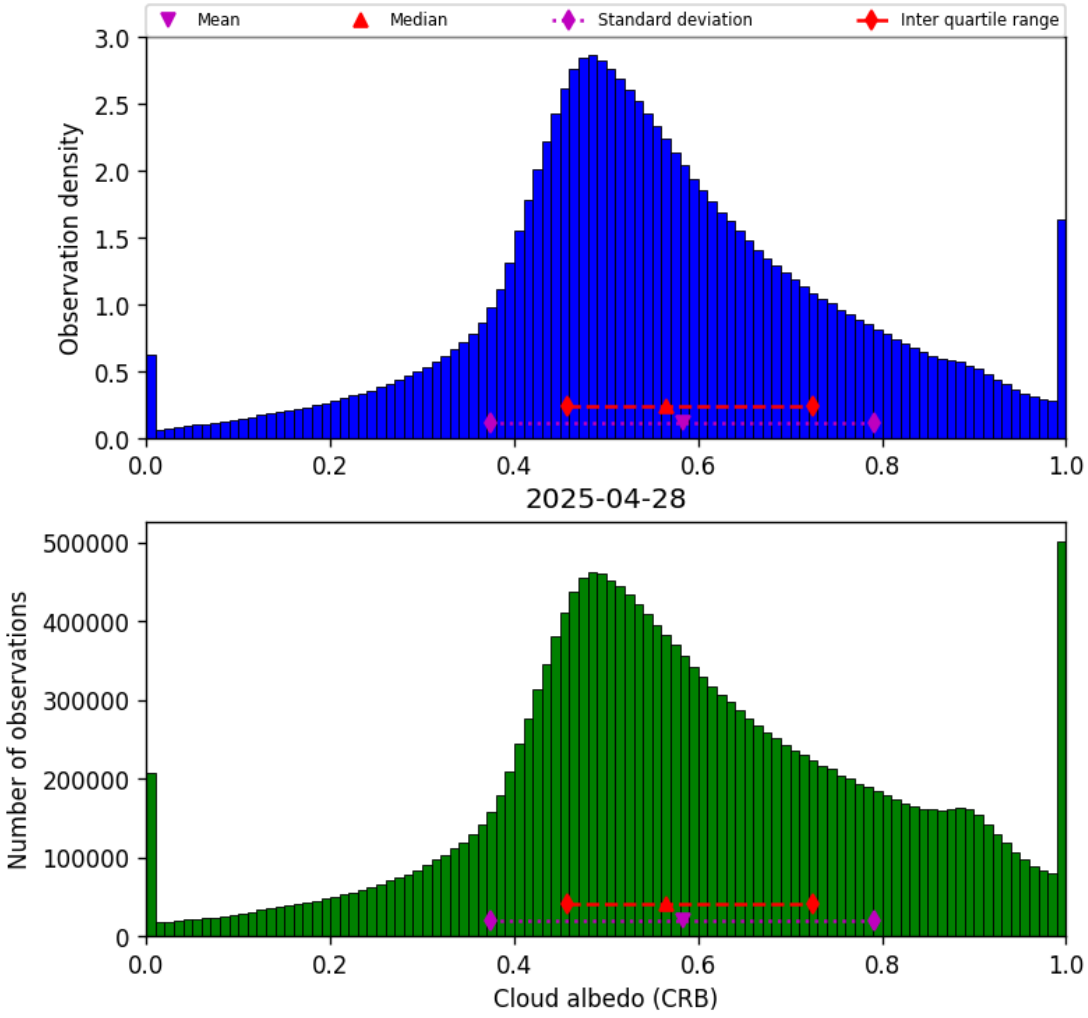

Figure 42: Histogram of “Cloud albedo (CRB)” for 2025-04-28 to 2025-04-29

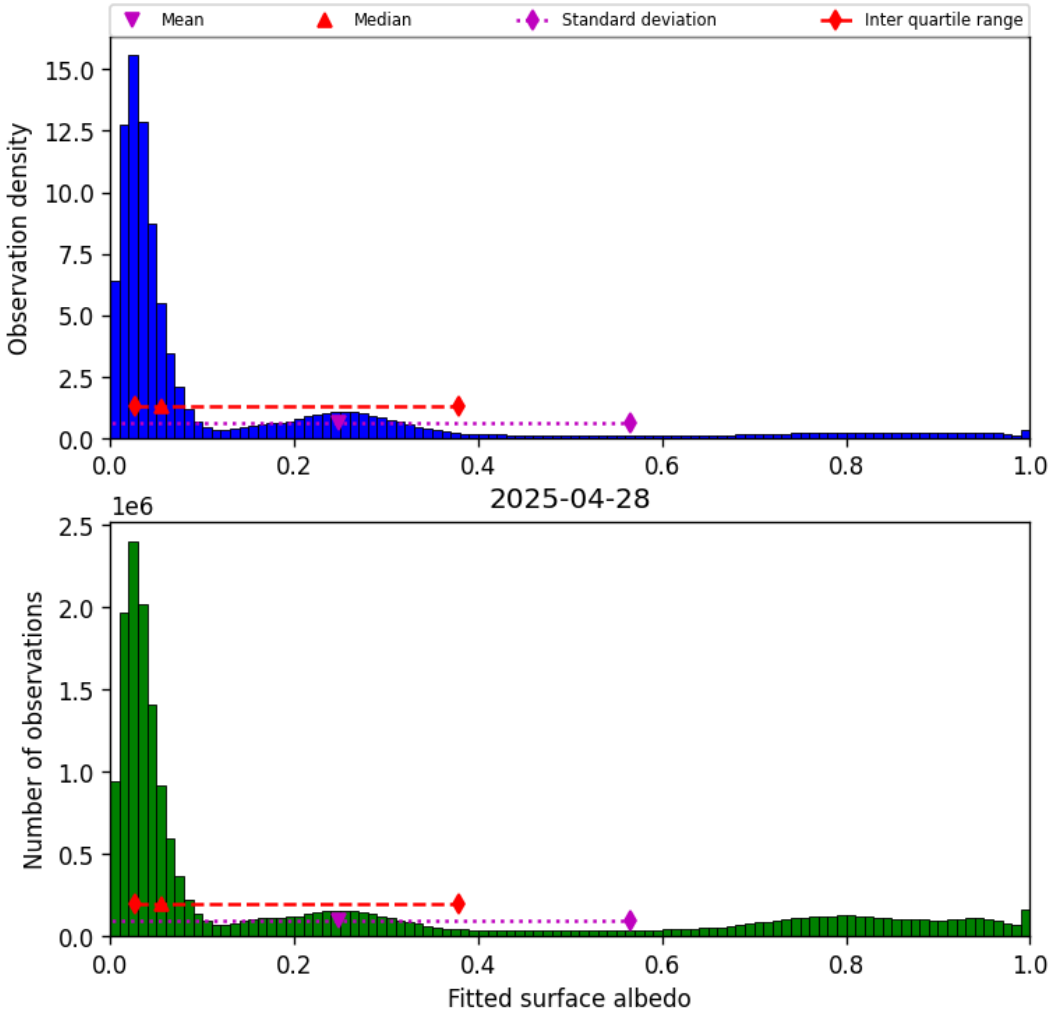

Figure 43: Histogram of “Fitted surface albedo” for 2025-04-28 to 2025-04-29

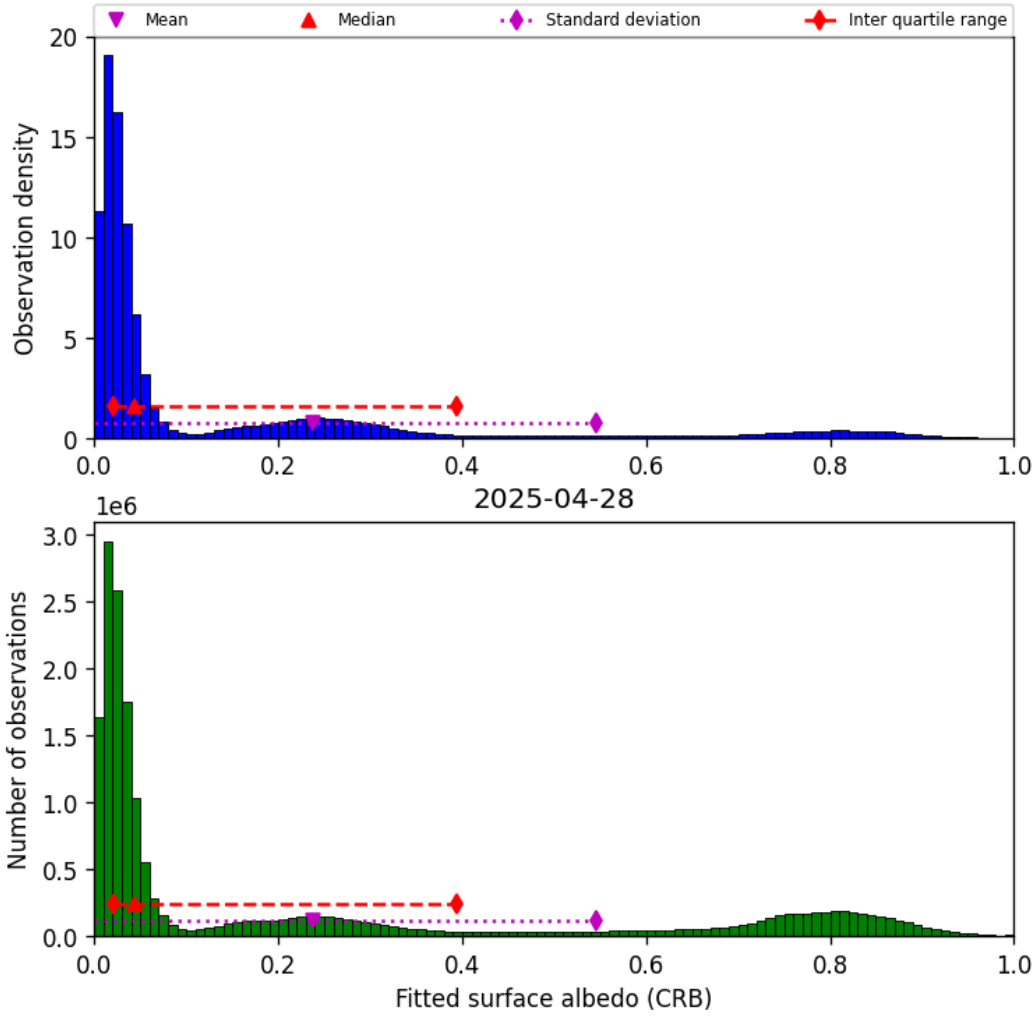

Figure 44: Histogram of “Fitted surface albedo (CRB)” for 2025-04-28 to 2025-04-29

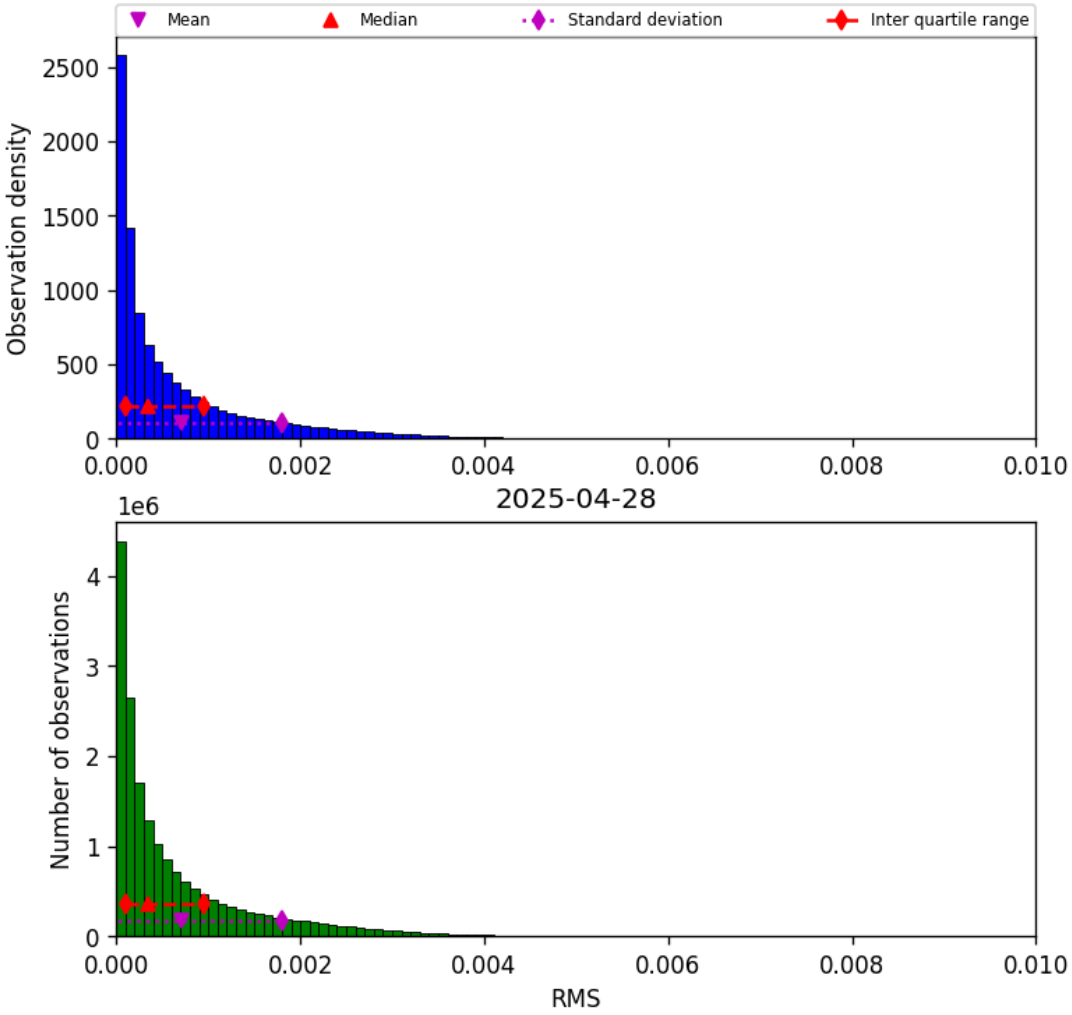

Figure 45: Histogram of “RMS” for 2025-04-28 to 2025-04-29

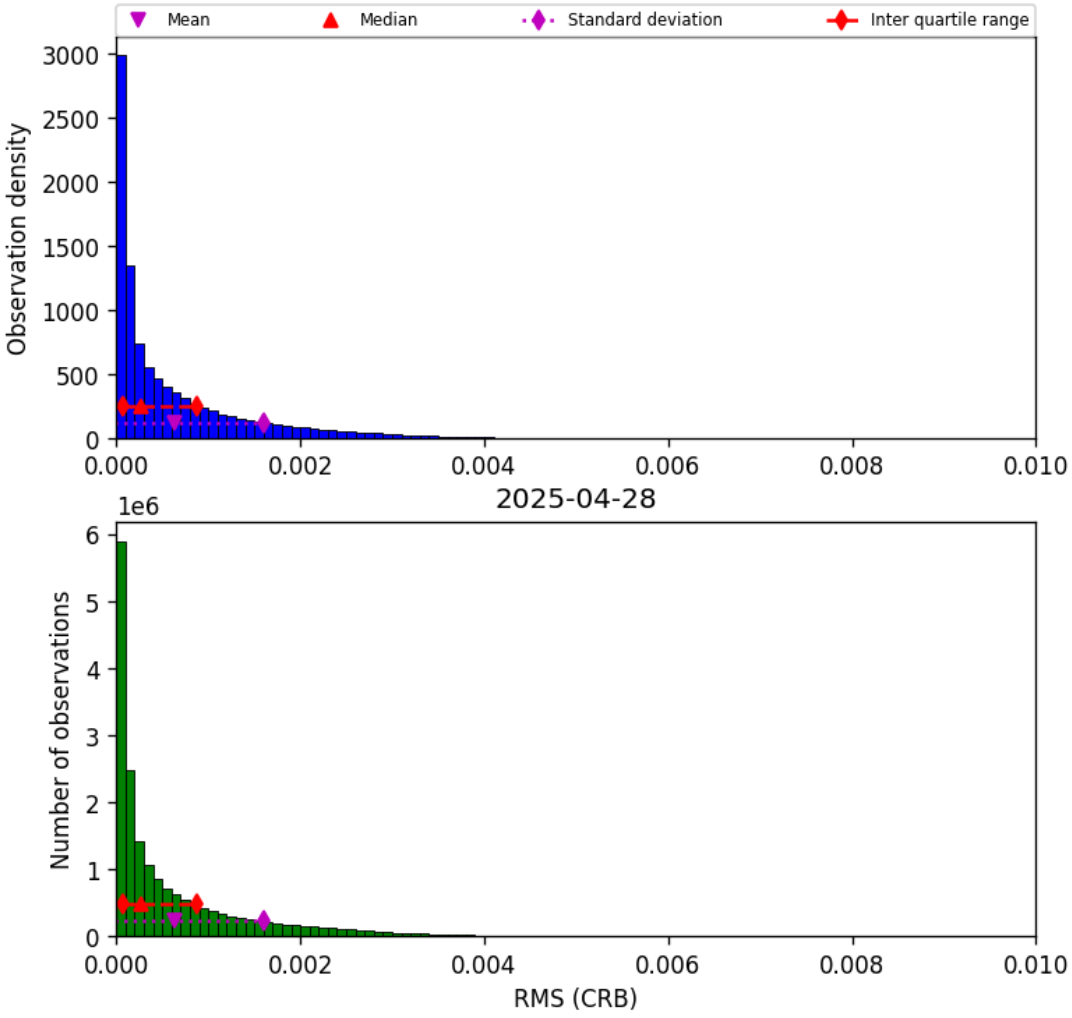

Figure 46: Histogram of “RMS (CRB)” for 2025-04-28 to 2025-04-29

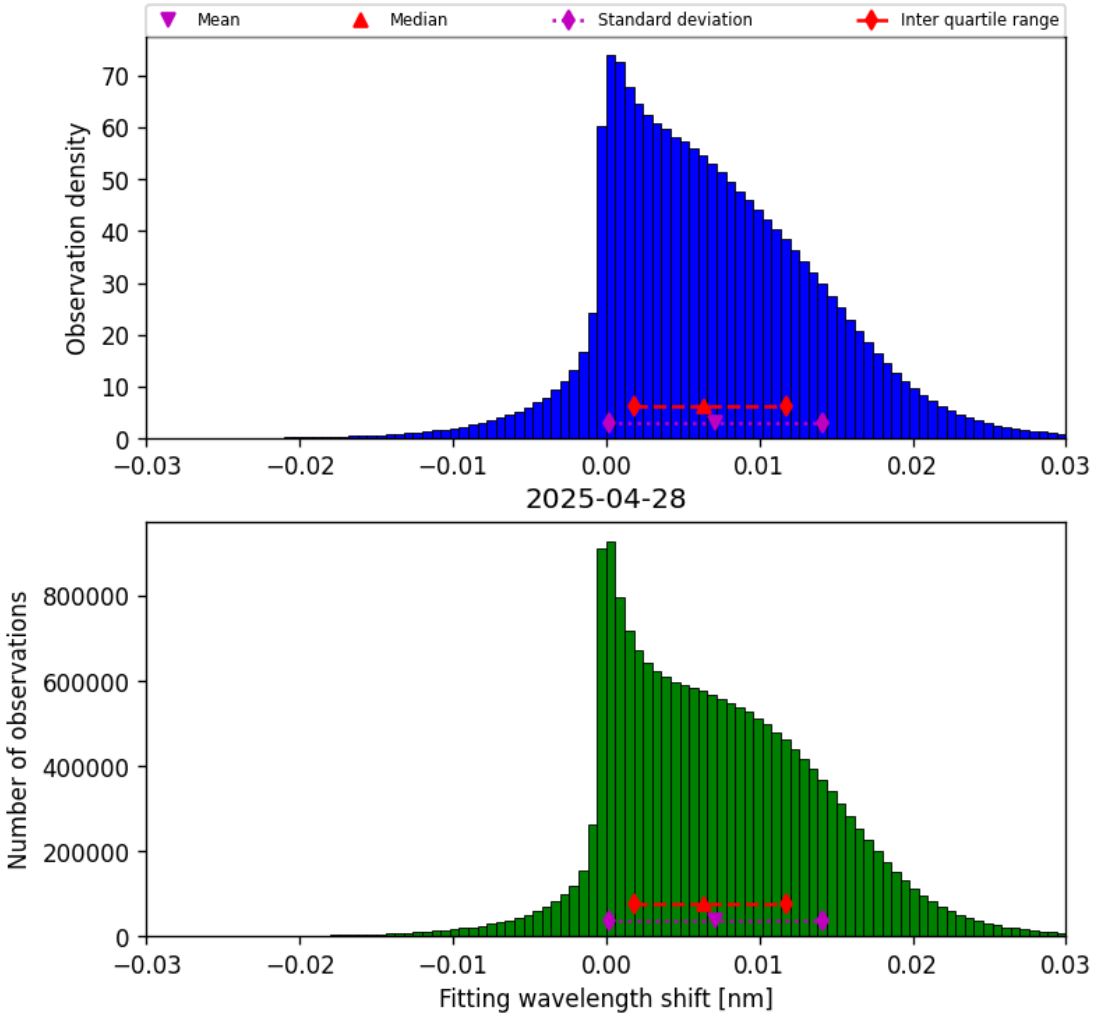

Figure 47: Histogram of “Fitting wavelength shift” for 2025-04-28 to 2025-04-29

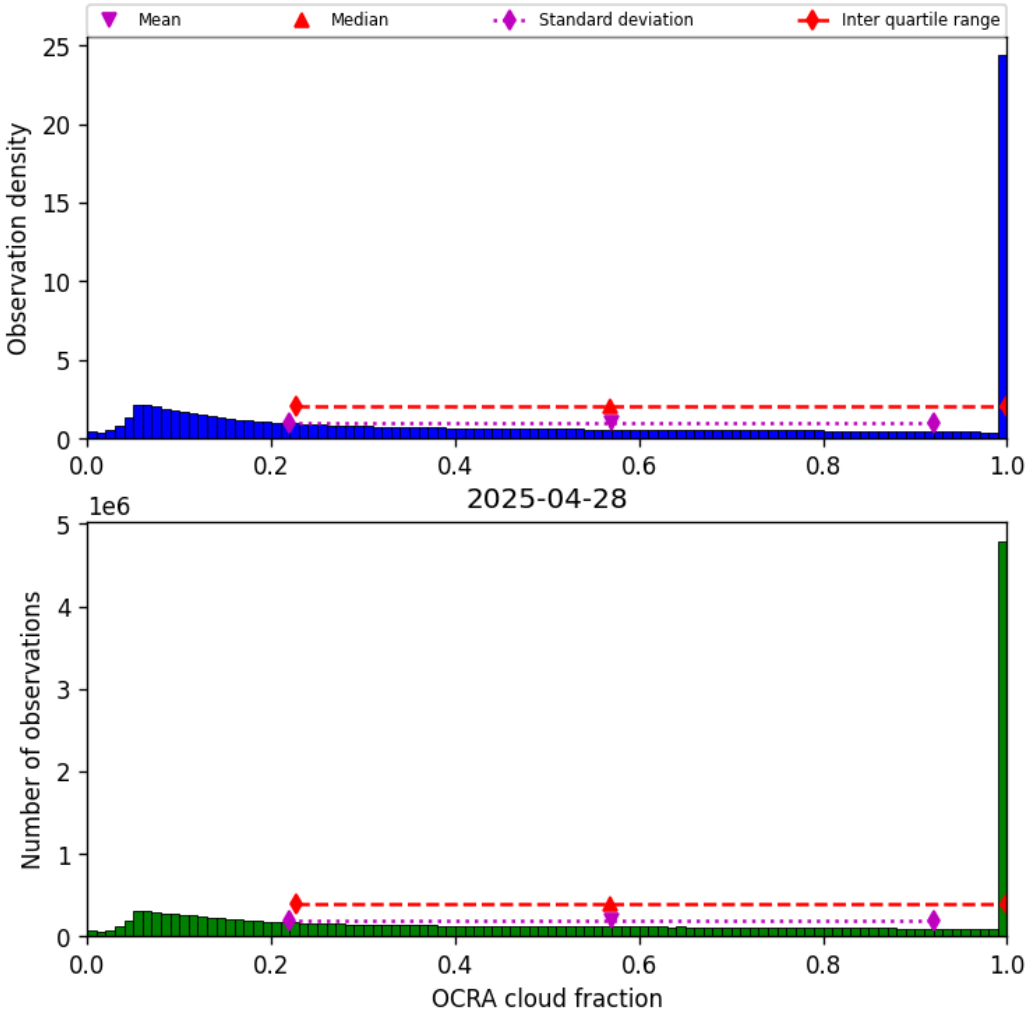

Figure 48: Histogram of “OCRA cloud fraction” for 2025-04-28 to 2025-04-29

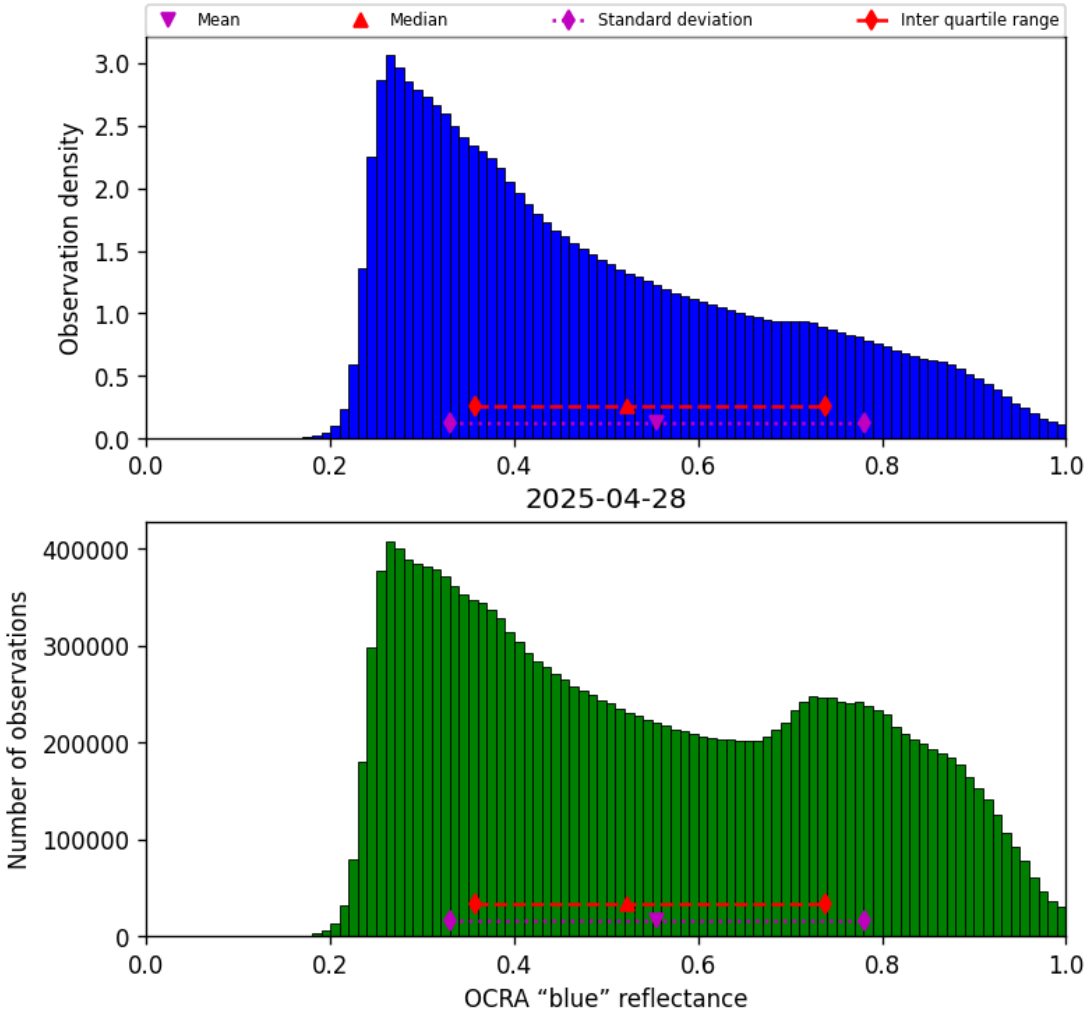

Figure 49: Histogram of “OCRA “blue” reflectance” for 2025-04-28 to 2025-04-29

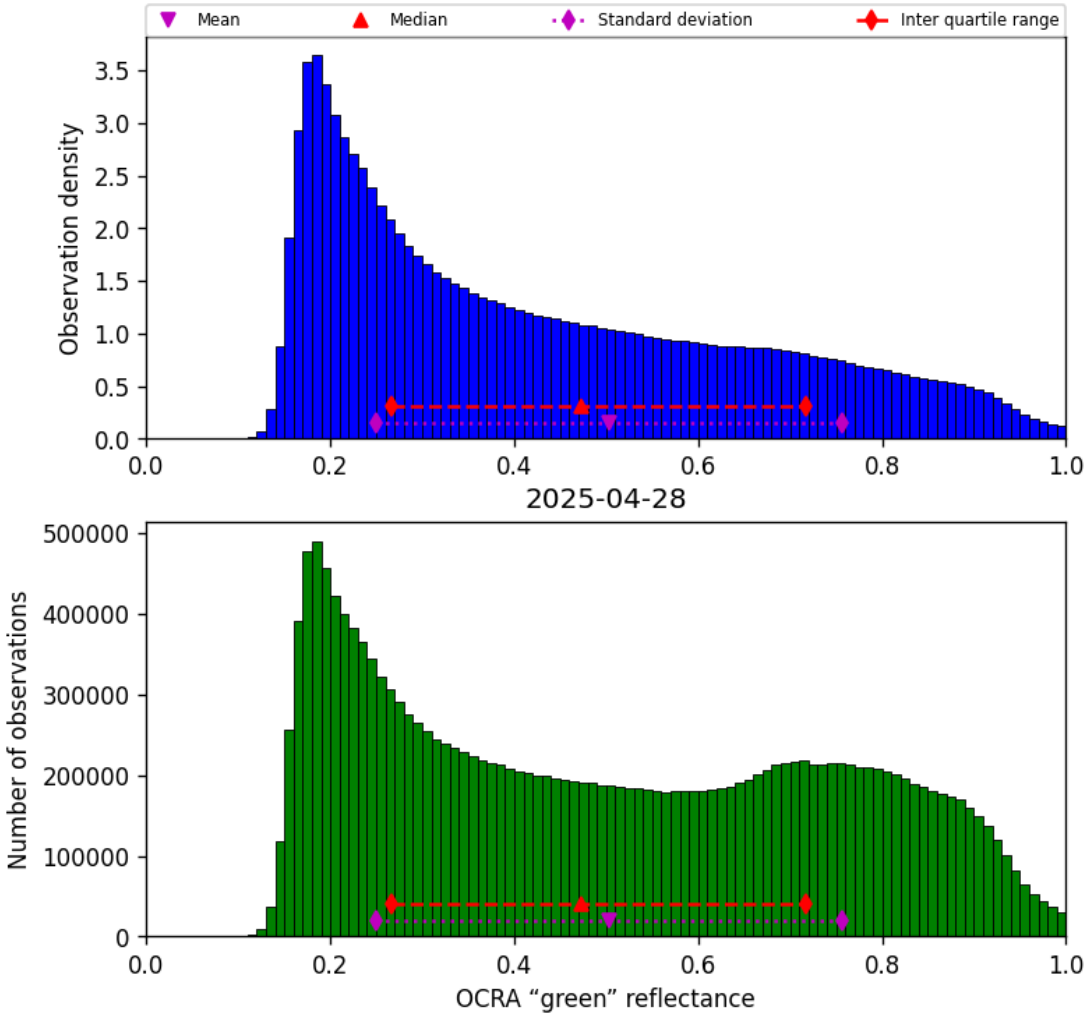

Figure 50: Histogram of “OCRA “green” reflectance” for 2025-04-28 to 2025-04-29

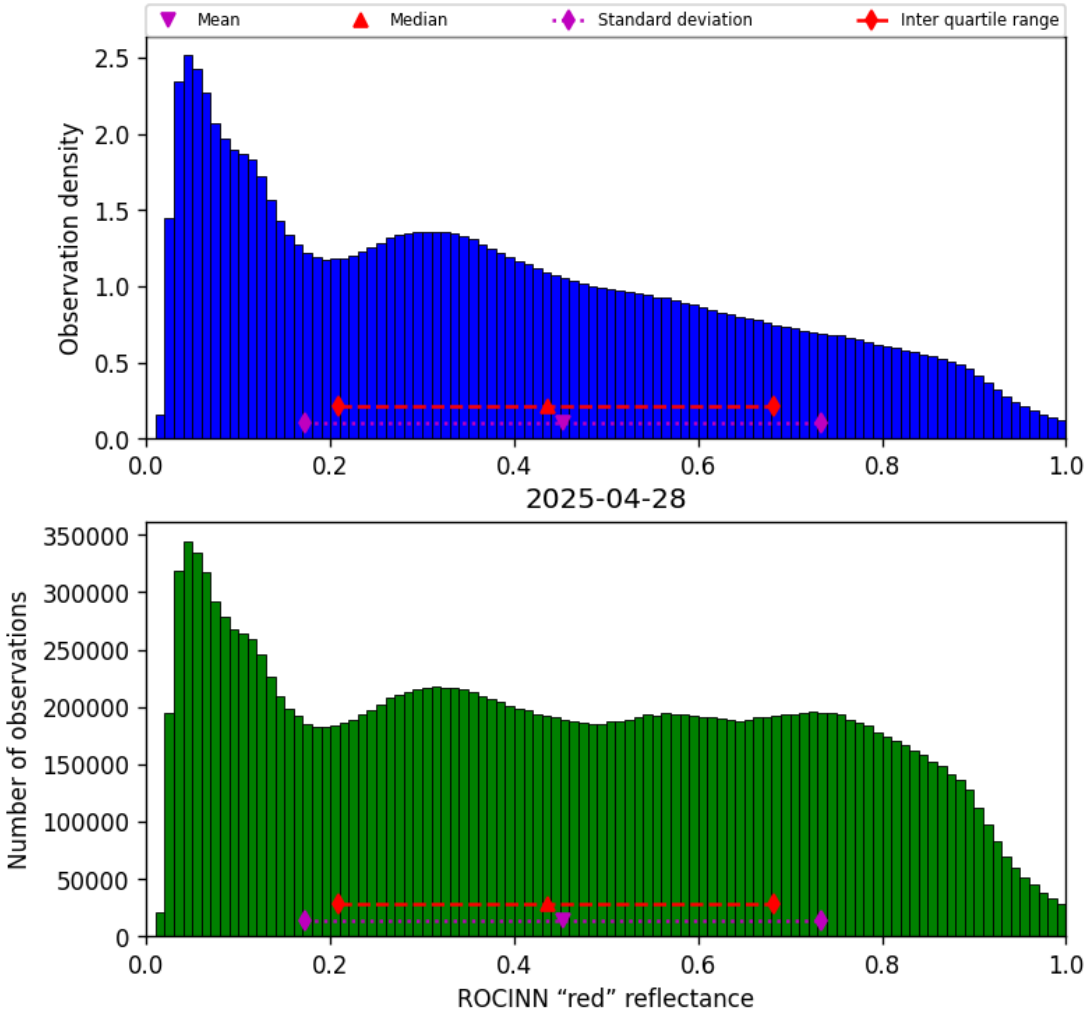

Figure 51: Histogram of “ROCINN “red” reflectance” for 2025-04-28 to 2025-04-29

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.

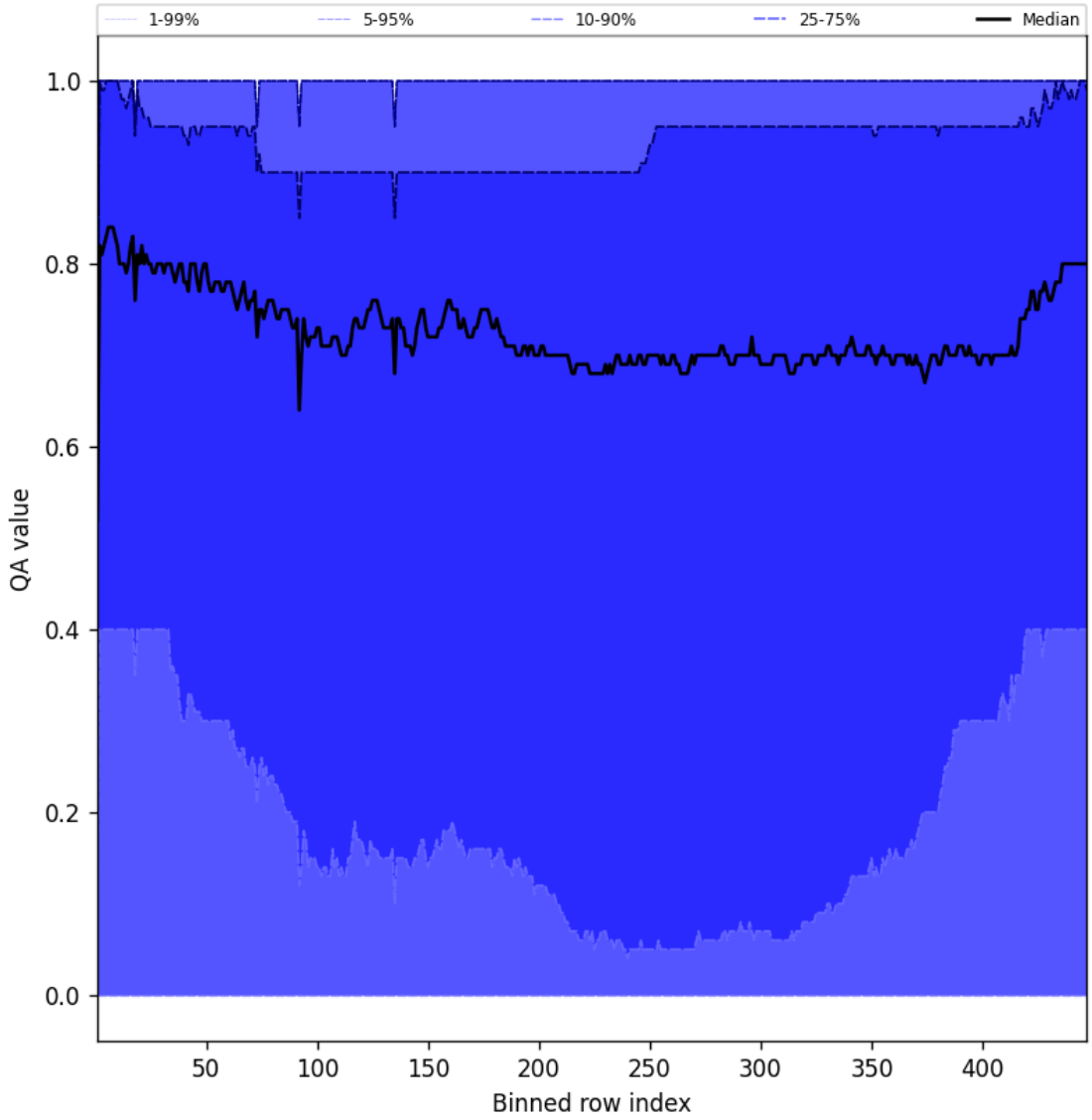

Figure 52: Along track statistics of “QA value” for 2025-04-28 to 2025-04-29

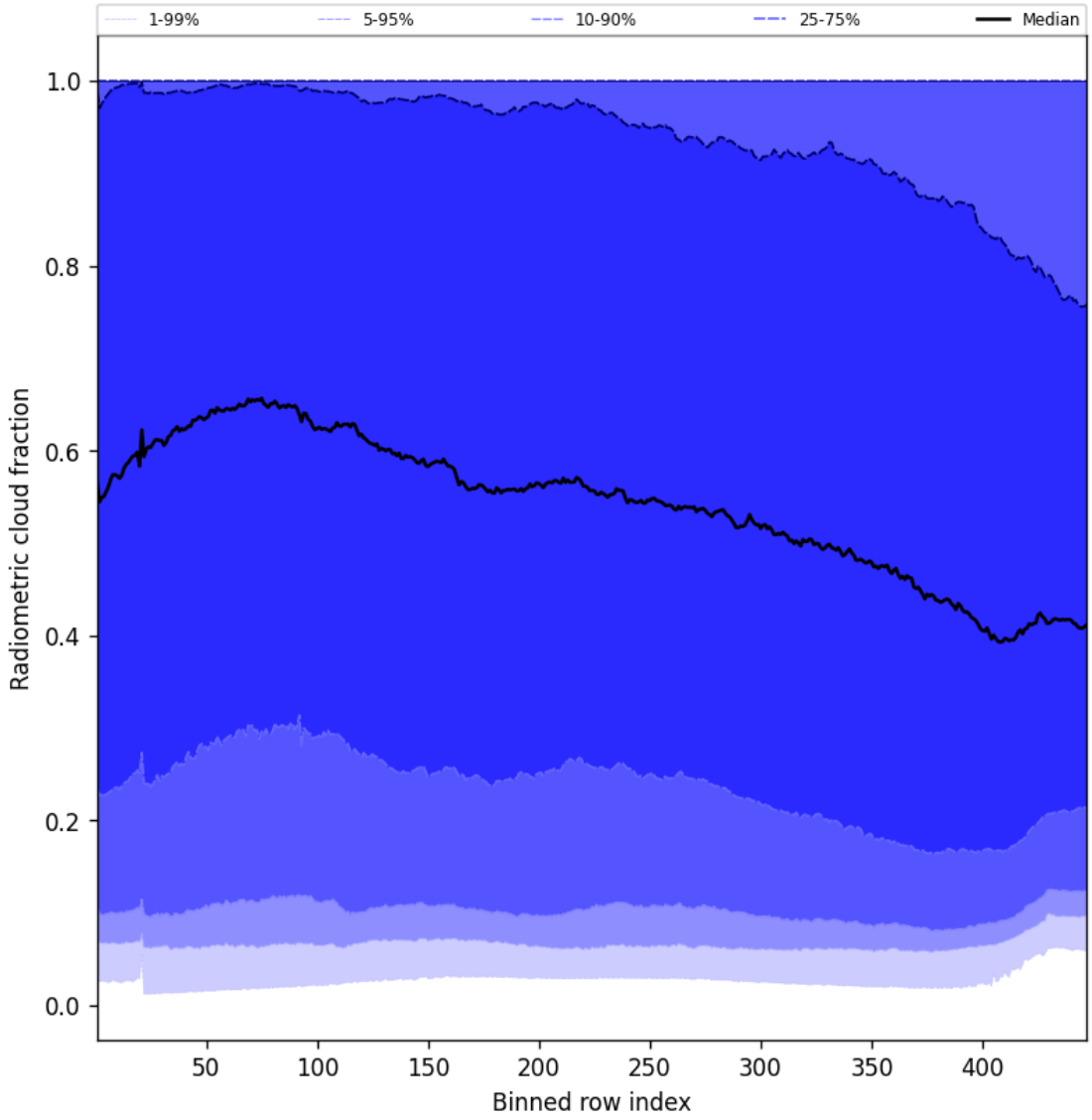

Figure 53: Along track statistics of “Radiometric cloud fraction” for 2025-04-28 to 2025-04-29

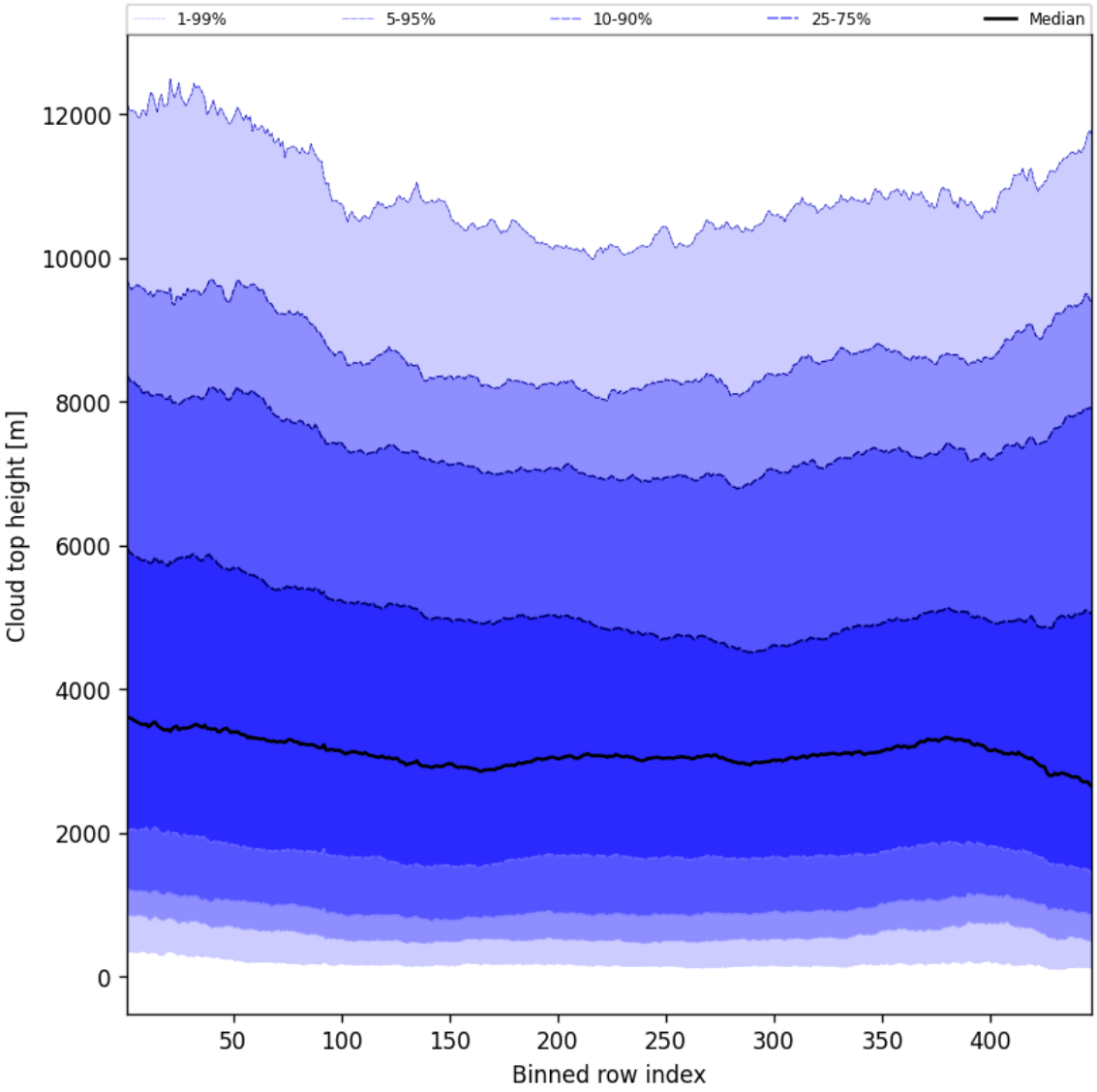

Figure 54: Along track statistics of “Cloud top height” for 2025-04-28 to 2025-04-29

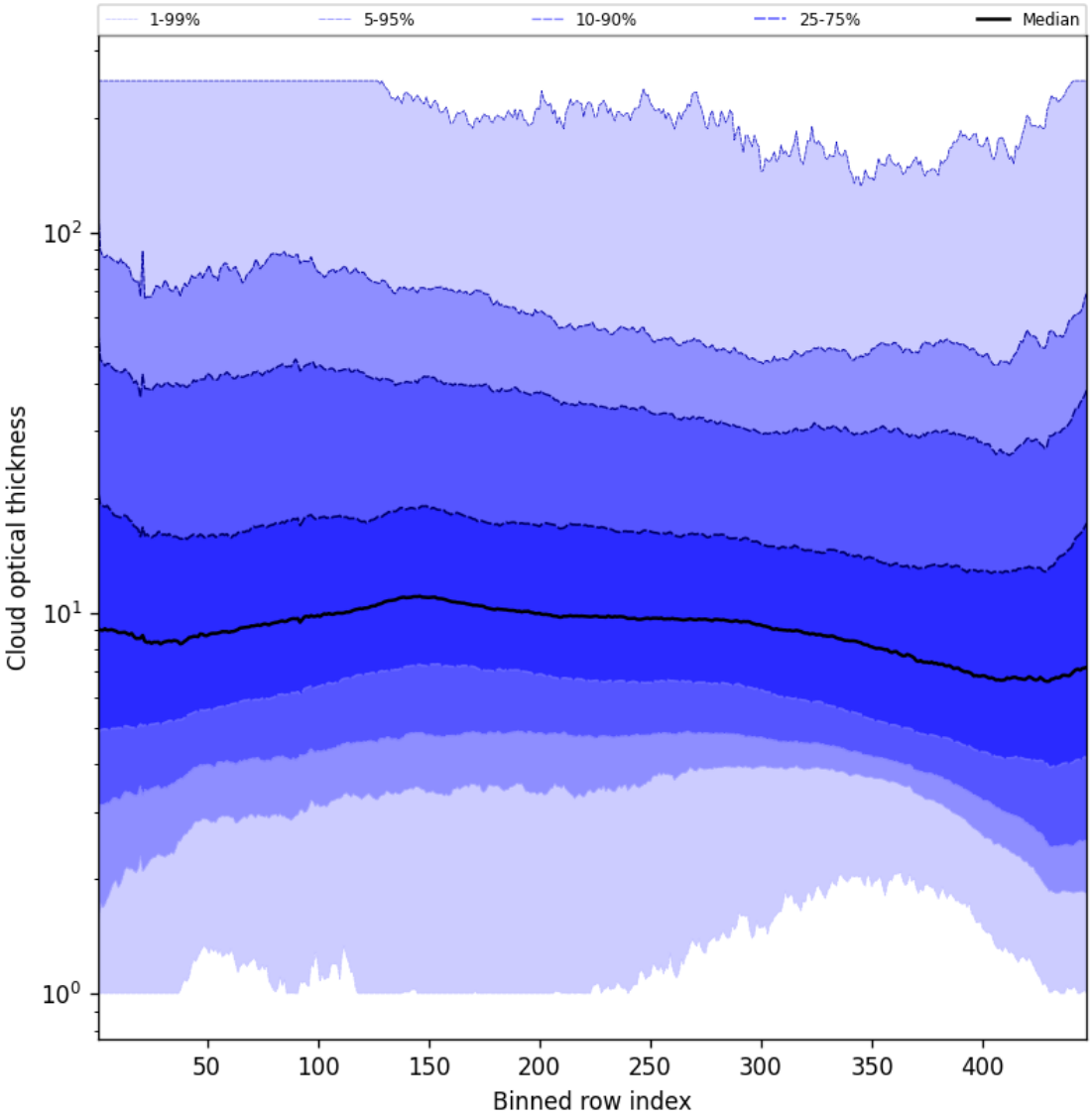

Figure 55: Along track statistics of “Cloud optical thickness” for 2025-04-28 to 2025-04-29

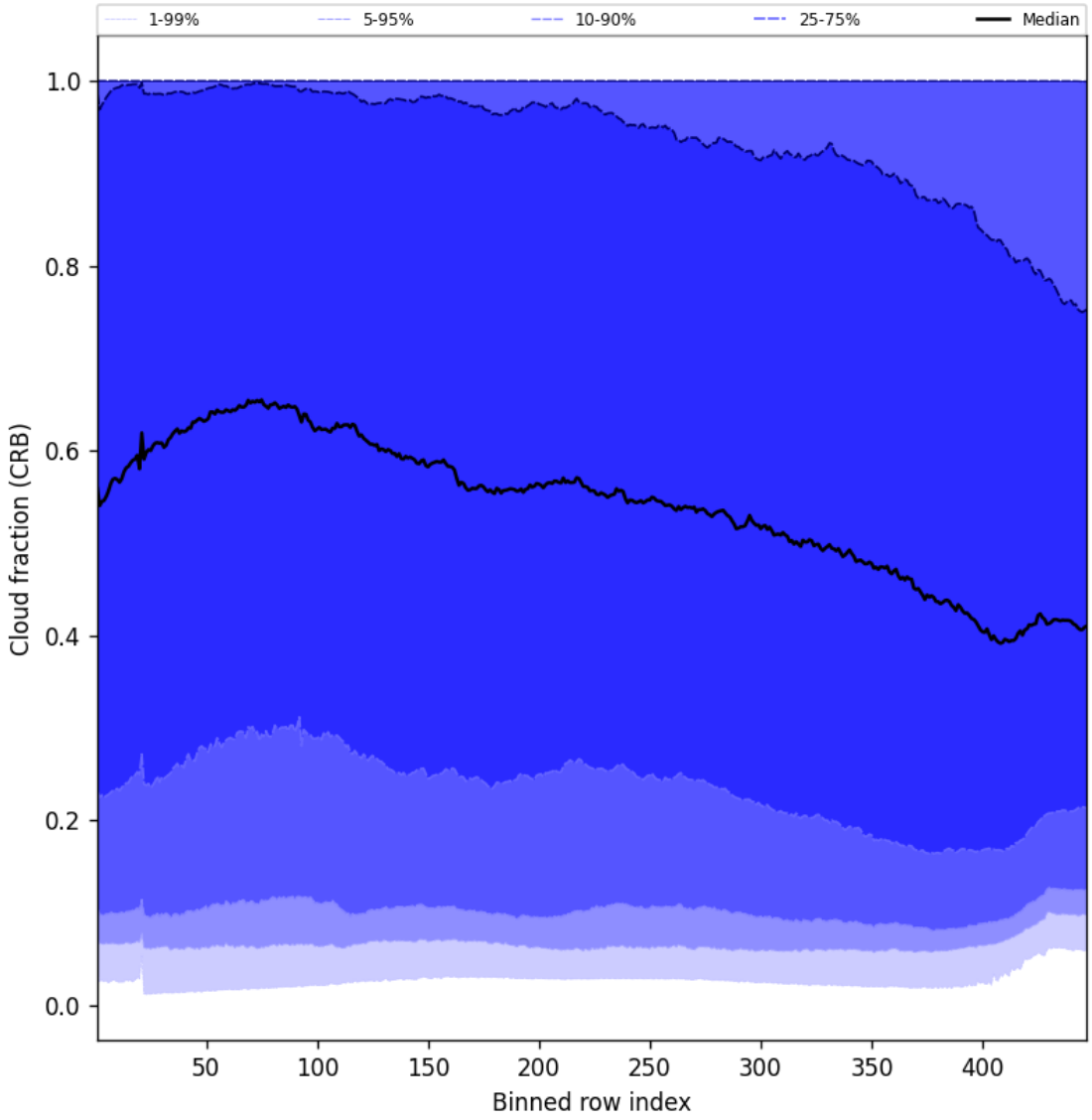

Figure 56: Along track statistics of “Cloud fraction (CRB)” for 2025-04-28 to 2025-04-29

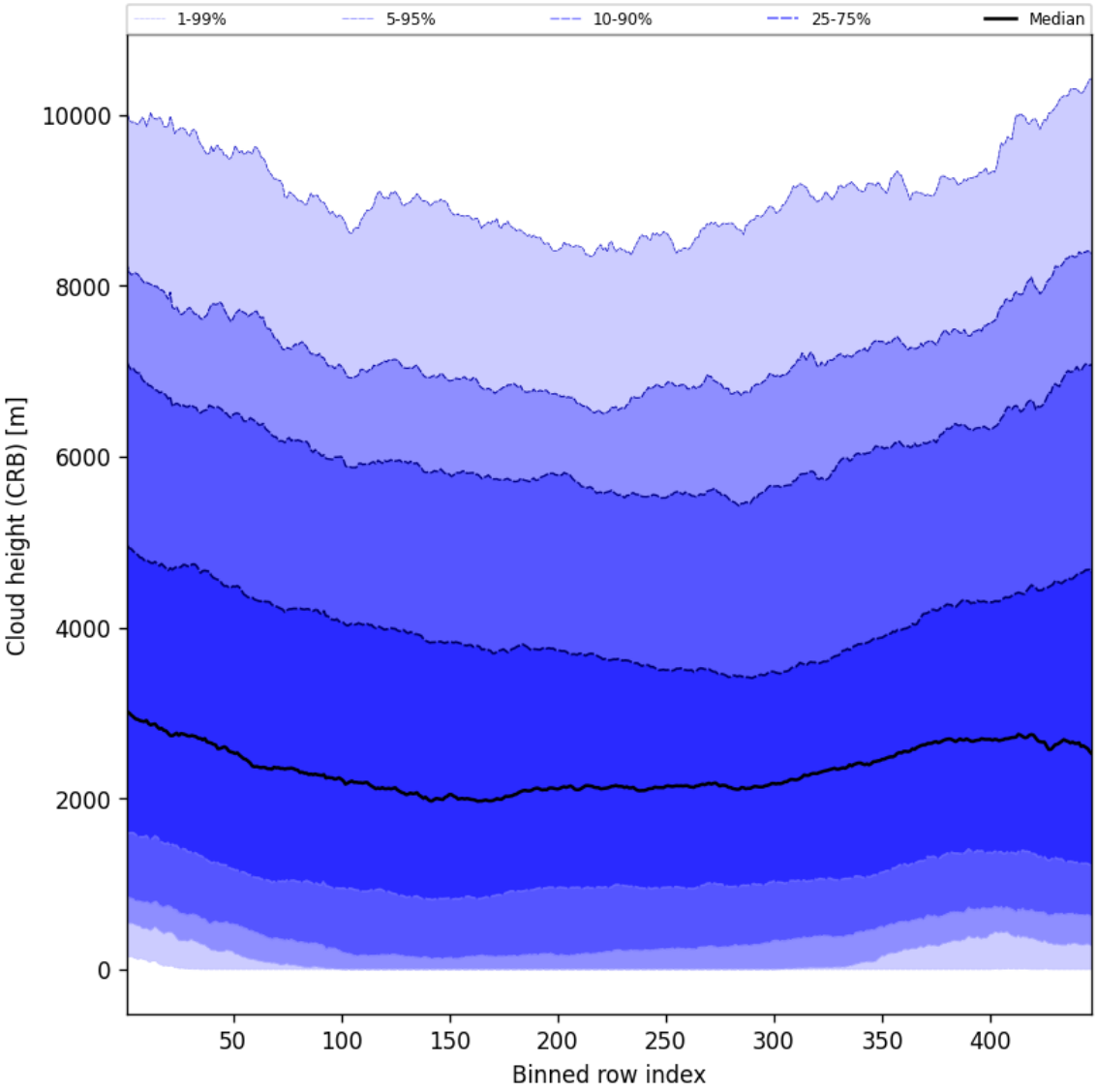

Figure 57: Along track statistics of “Cloud height (CRB)” for 2025-04-28 to 2025-04-29

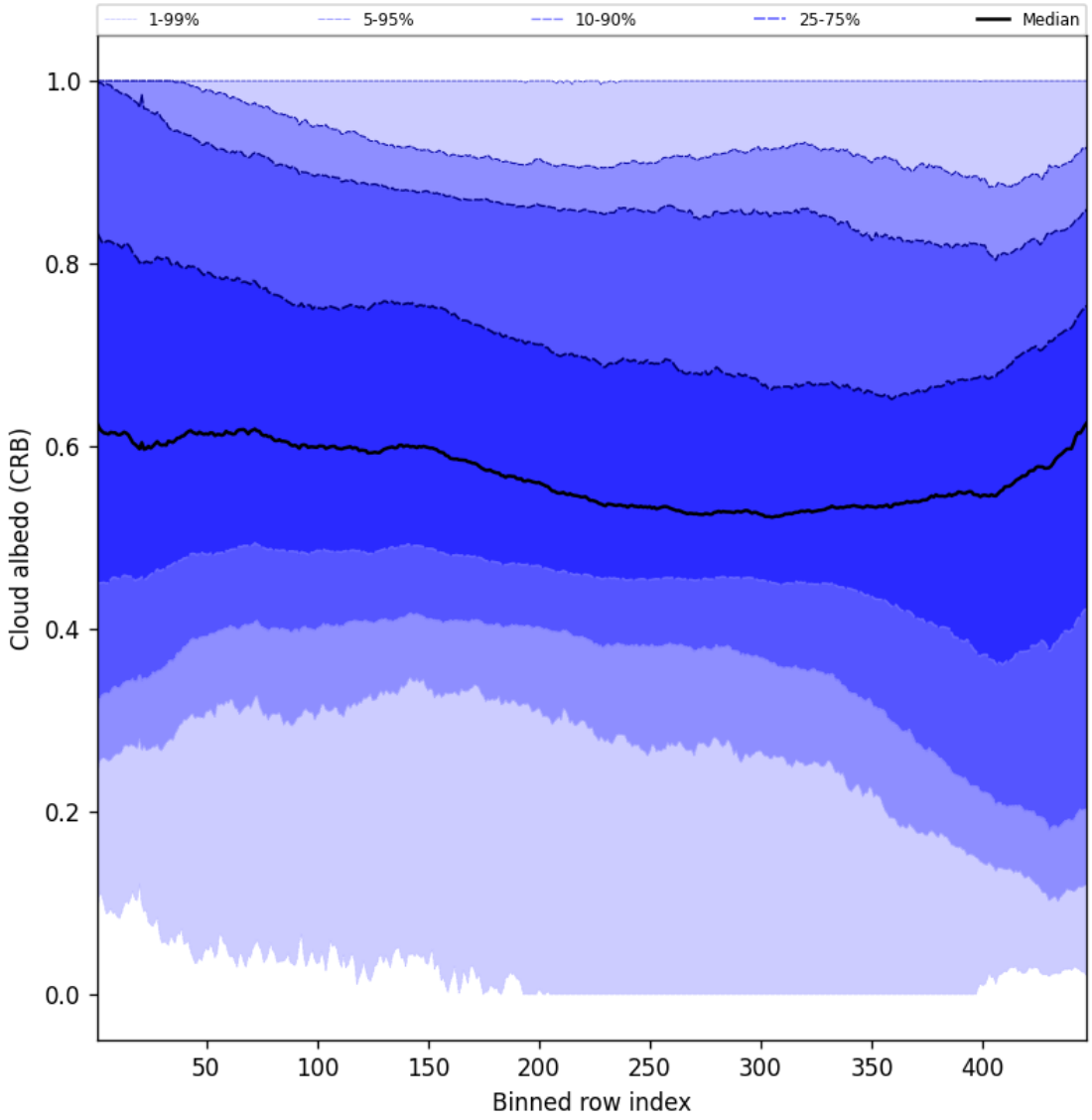

Figure 58: Along track statistics of “Cloud albedo (CRB)” for 2025-04-28 to 2025-04-29

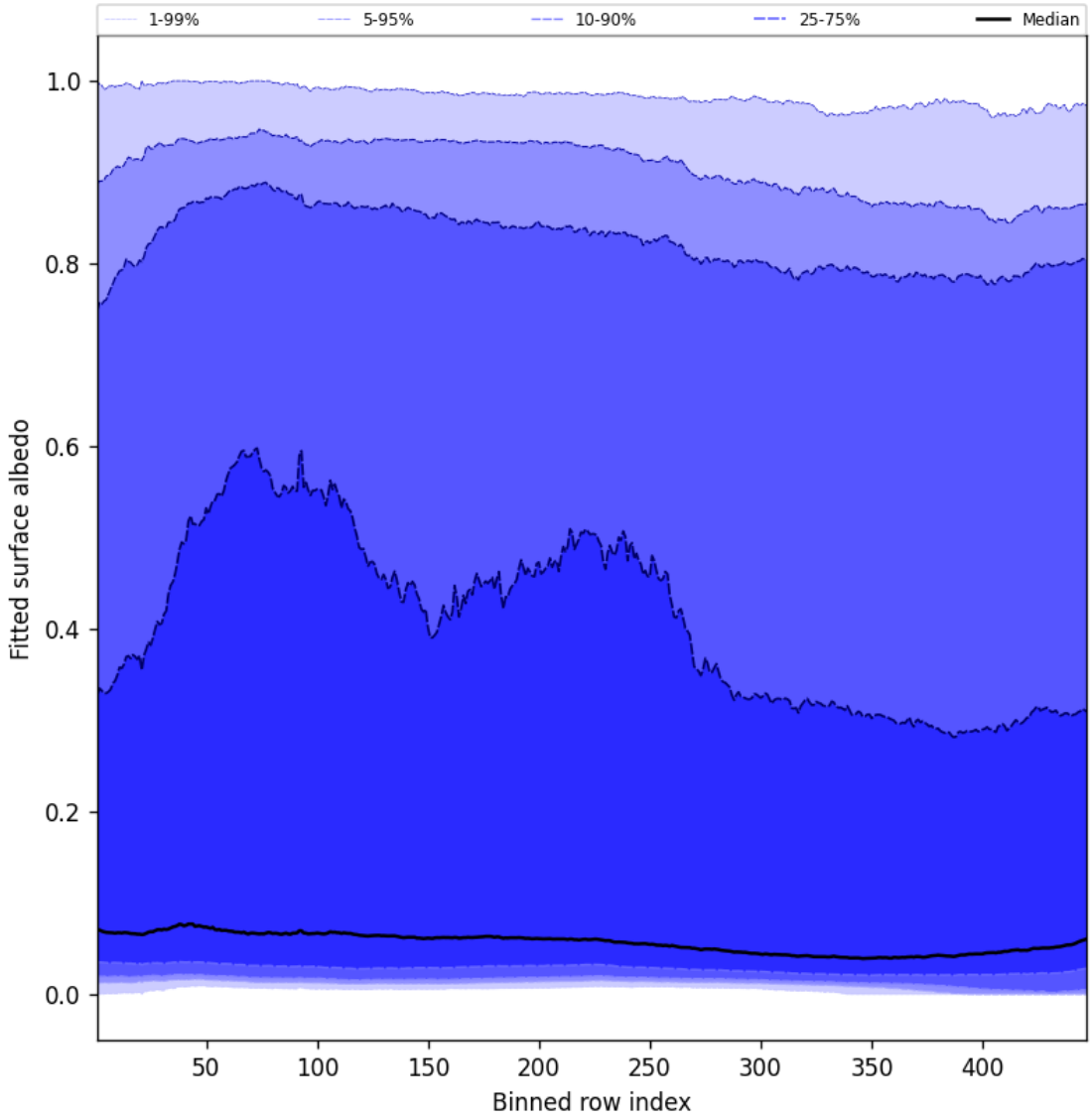

Figure 59: Along track statistics of “Fitted surface albedo” for 2025-04-28 to 2025-04-29

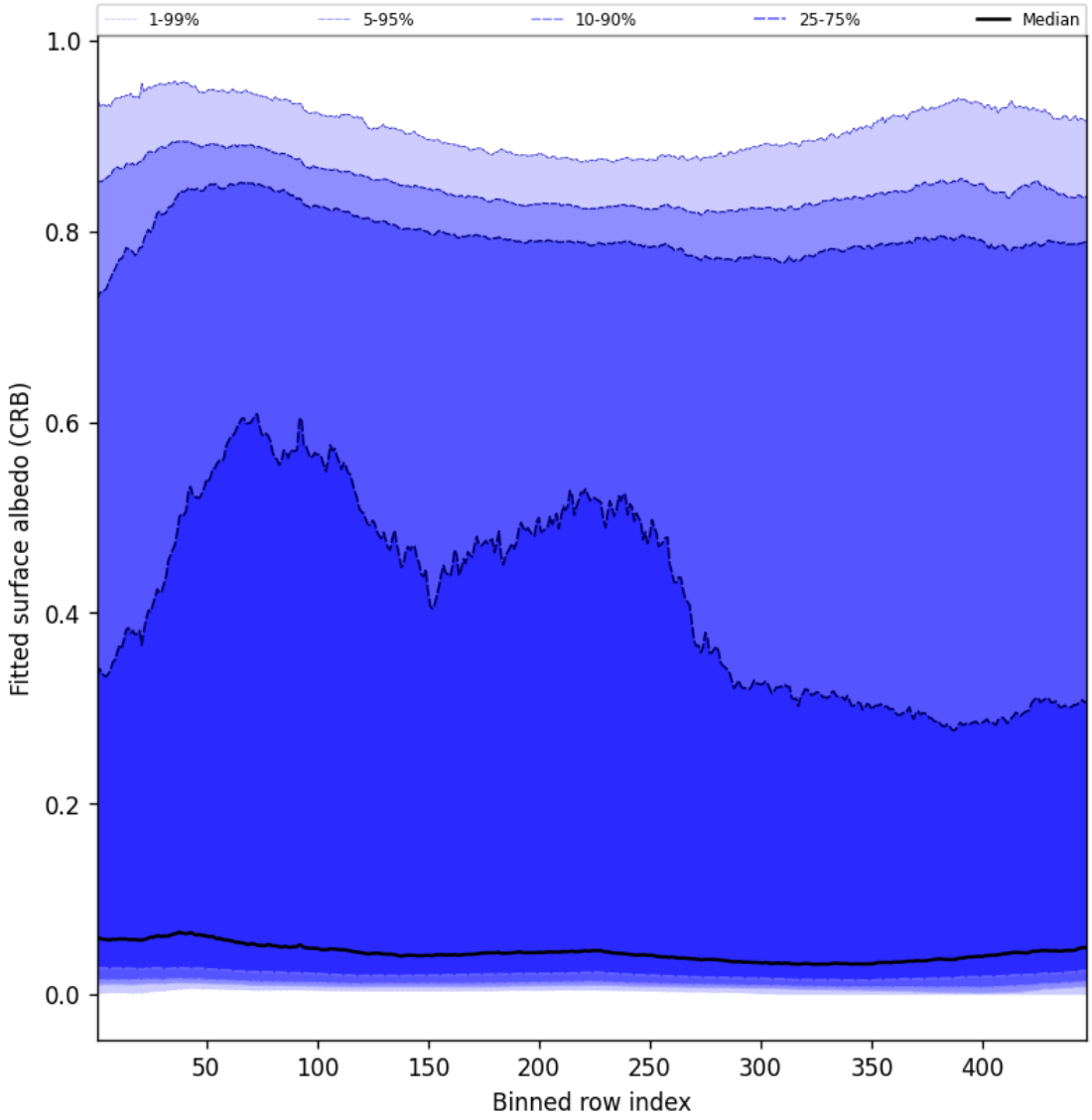

Figure 60: Along track statistics of “Fitted surface albedo (CRB)” for 2025-04-28 to 2025-04-29

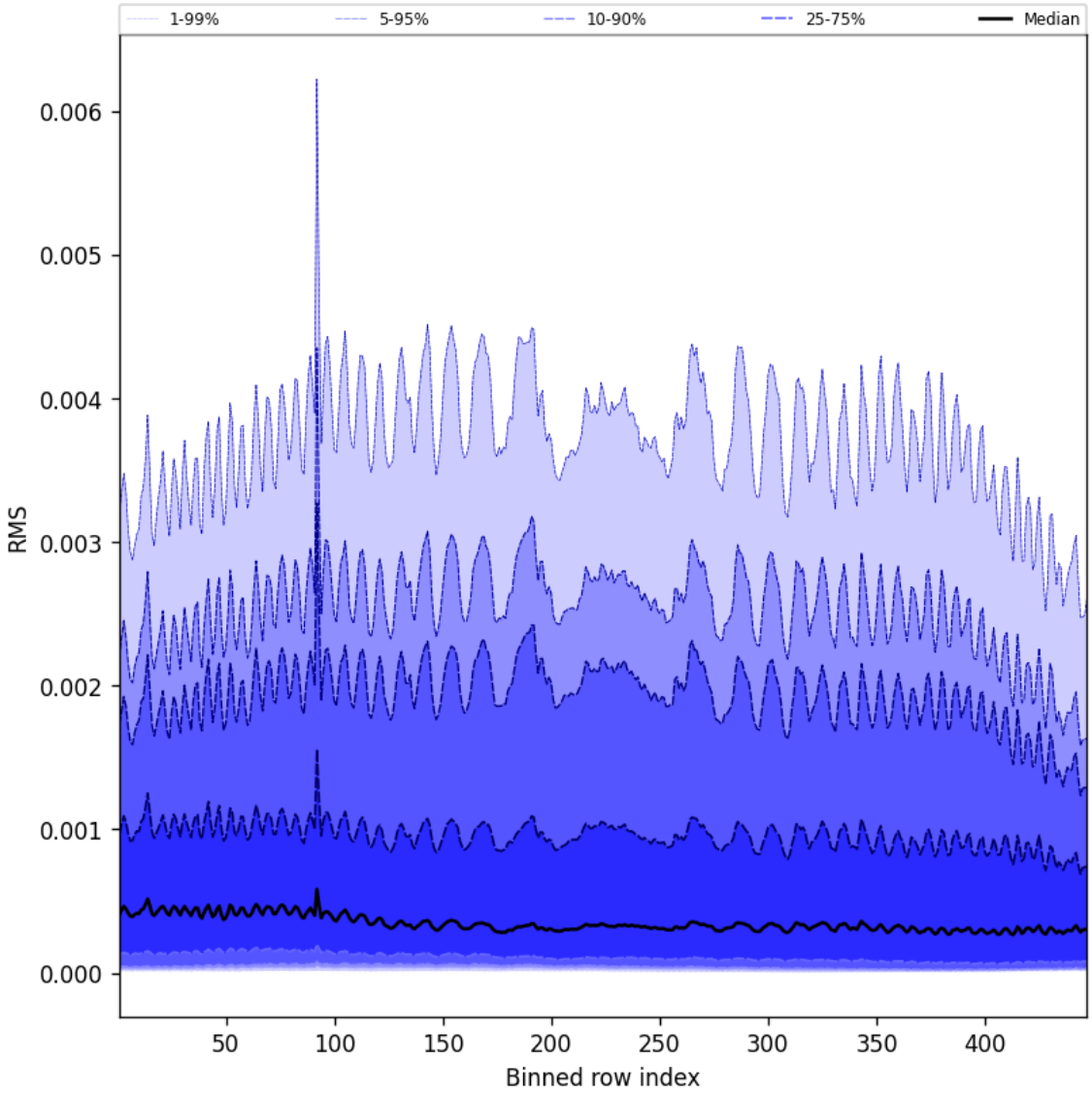

Figure 61: Along track statistics of “RMS” for 2025-04-28 to 2025-04-29

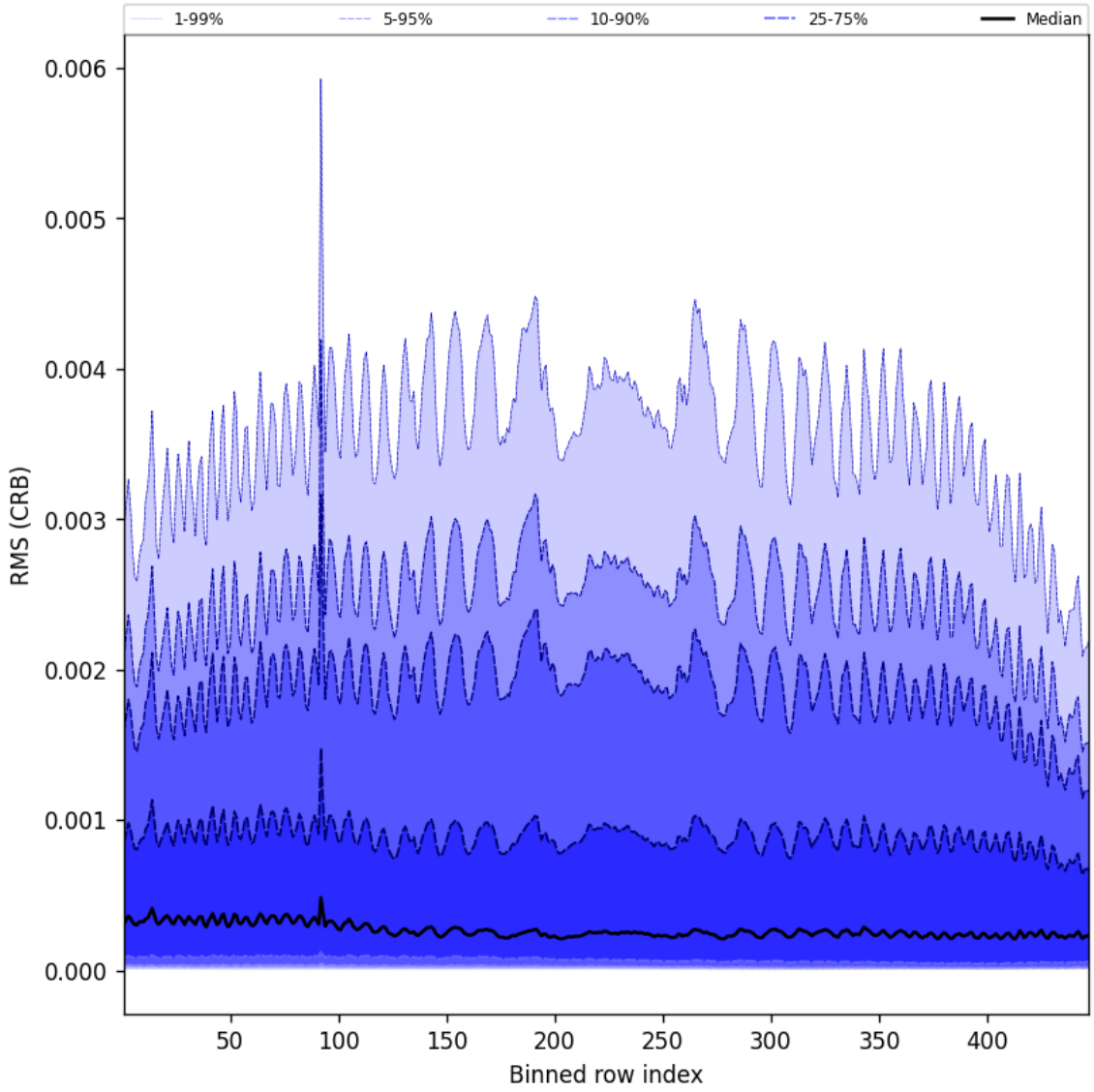

Figure 62: Along track statistics of “RMS (CRB)” for 2025-04-28 to 2025-04-29

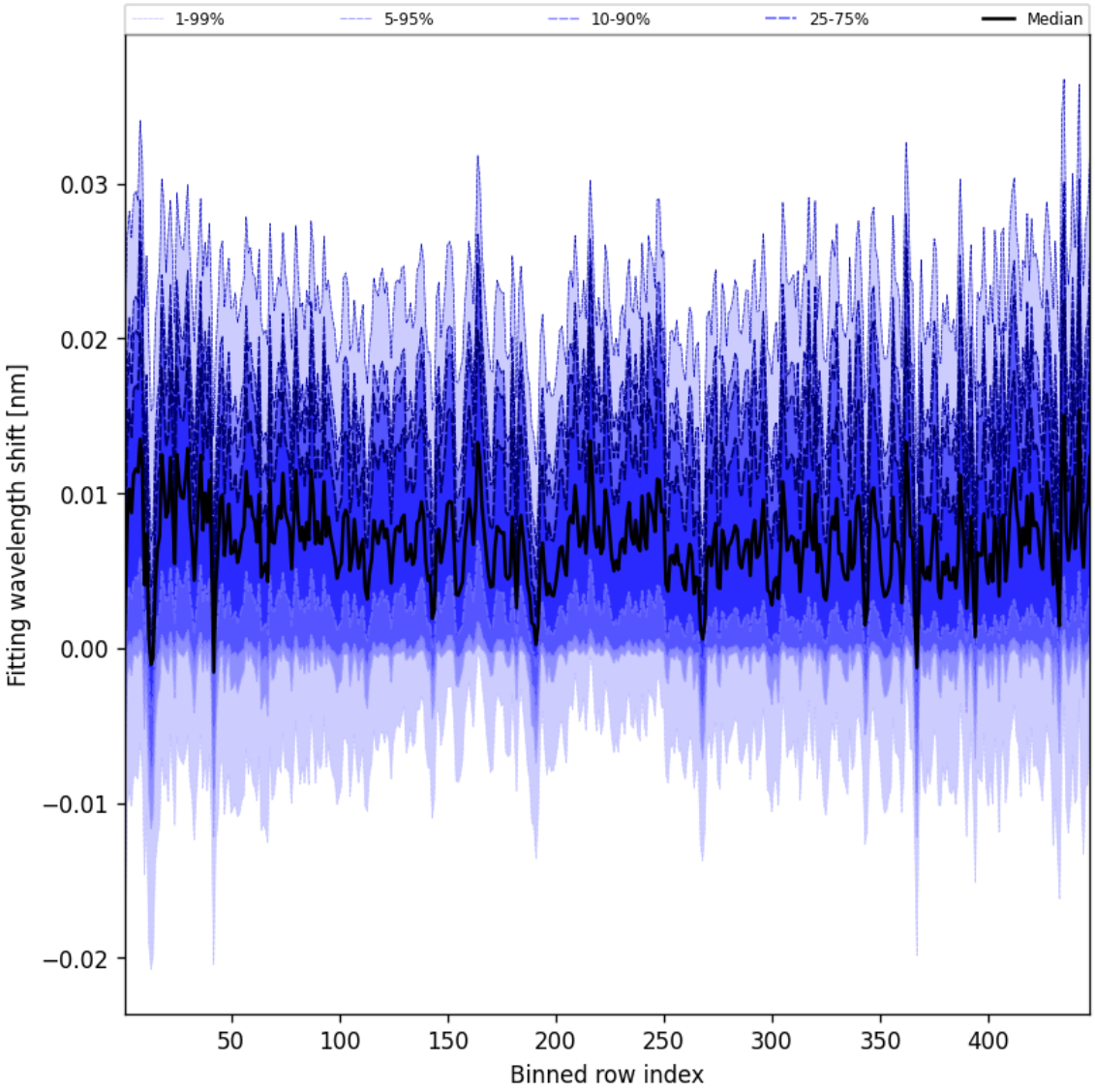

Figure 63: Along track statistics of “Fitting wavelength shift” for 2025-04-28 to 2025-04-29

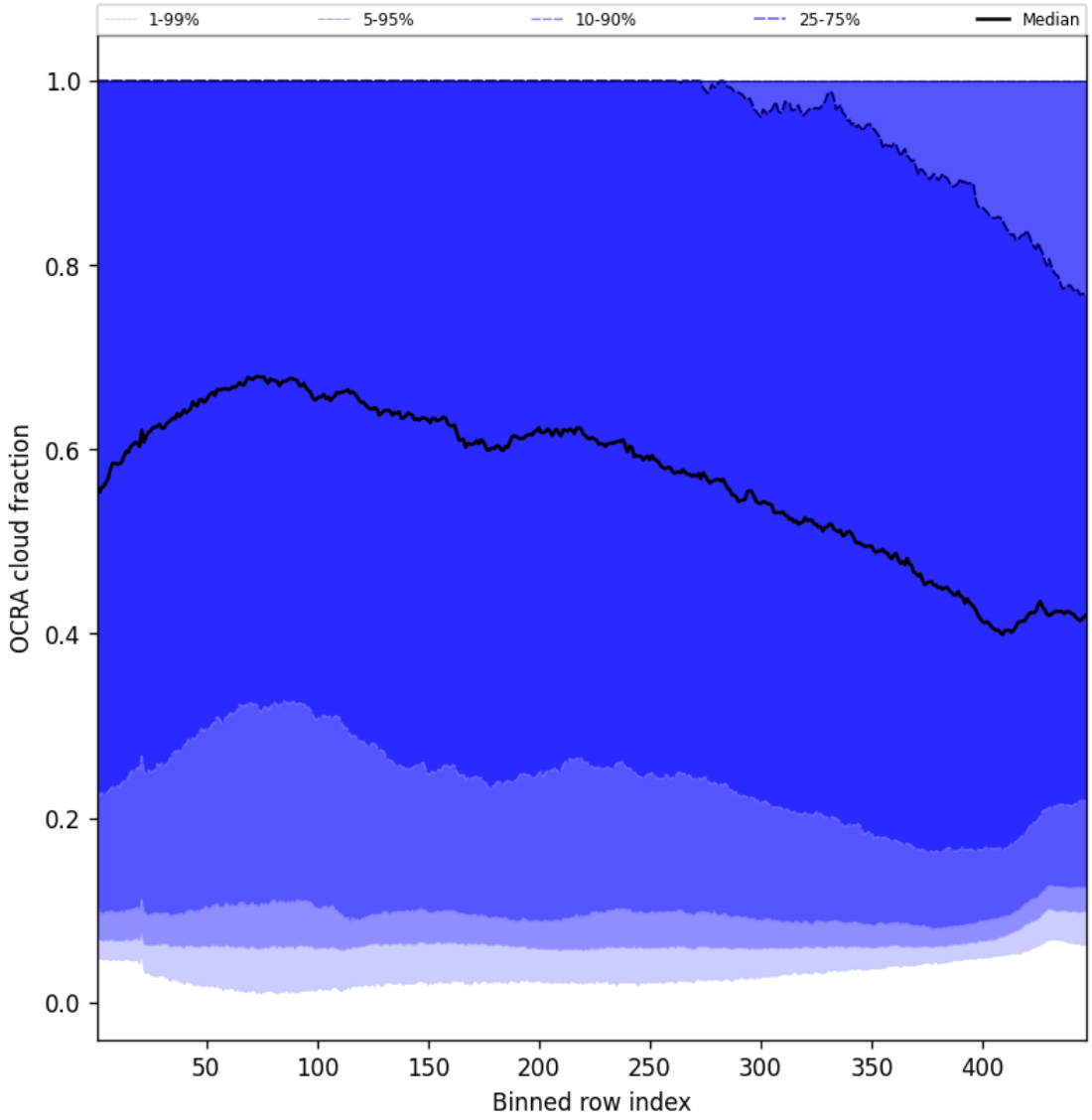

Figure 64: Along track statistics of “OCRA cloud fraction” for 2025-04-28 to 2025-04-29

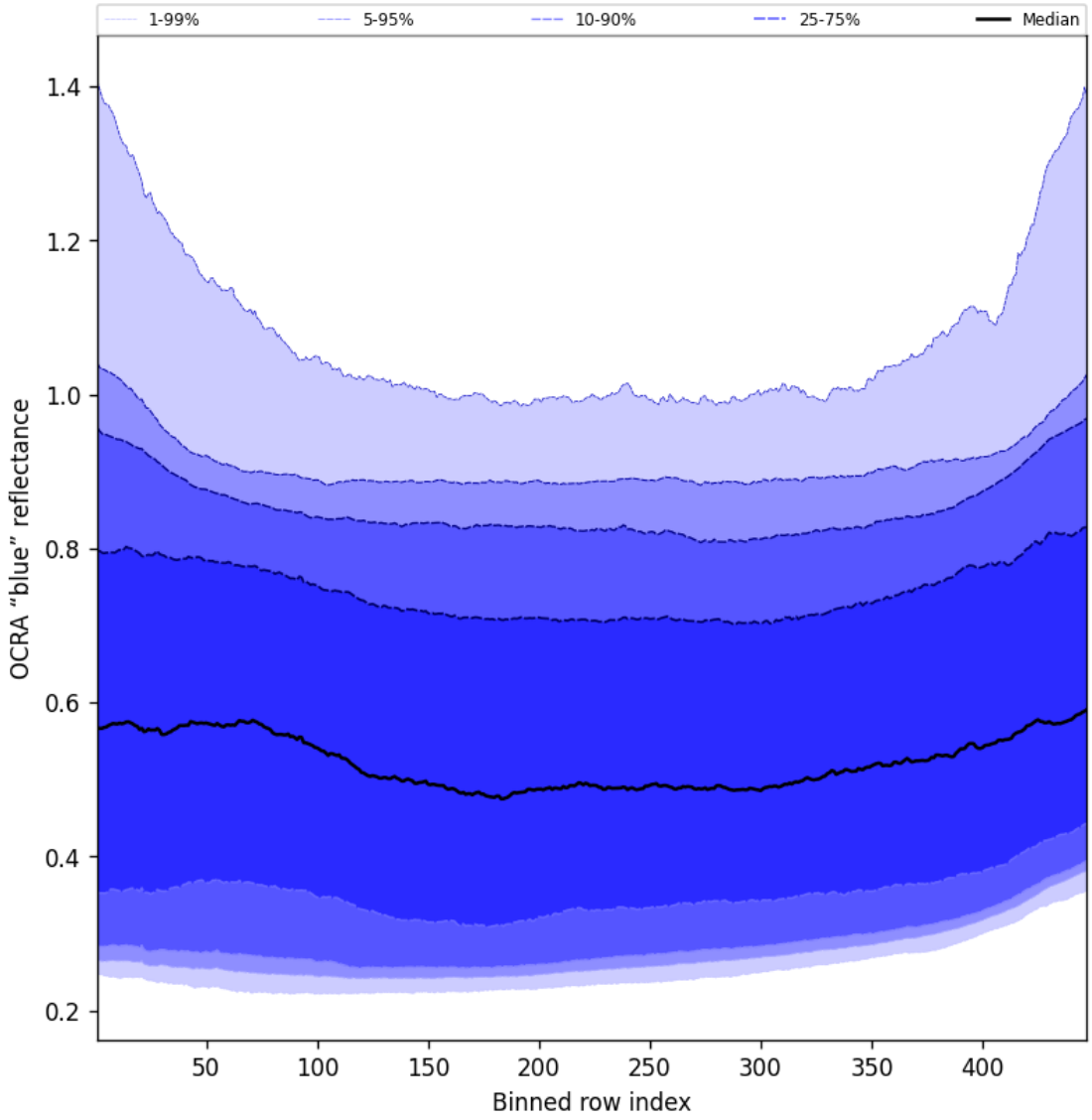

Figure 65: Along track statistics of “OCRA “blue” reflectance” for 2025-04-28 to 2025-04-29

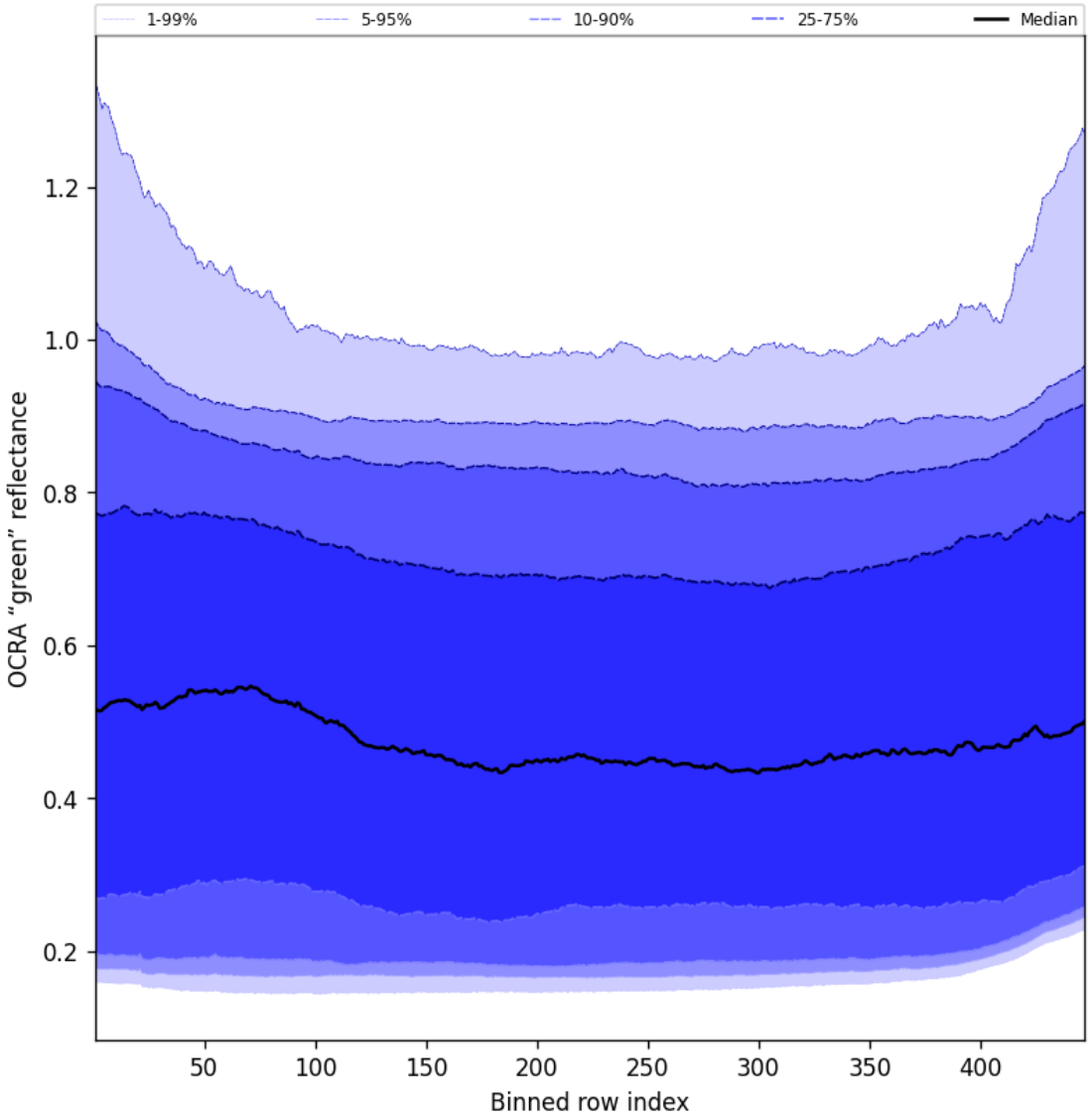

Figure 66: Along track statistics of "OCRA "green" reflectance" for 2025-04-28 to 2025-04-29

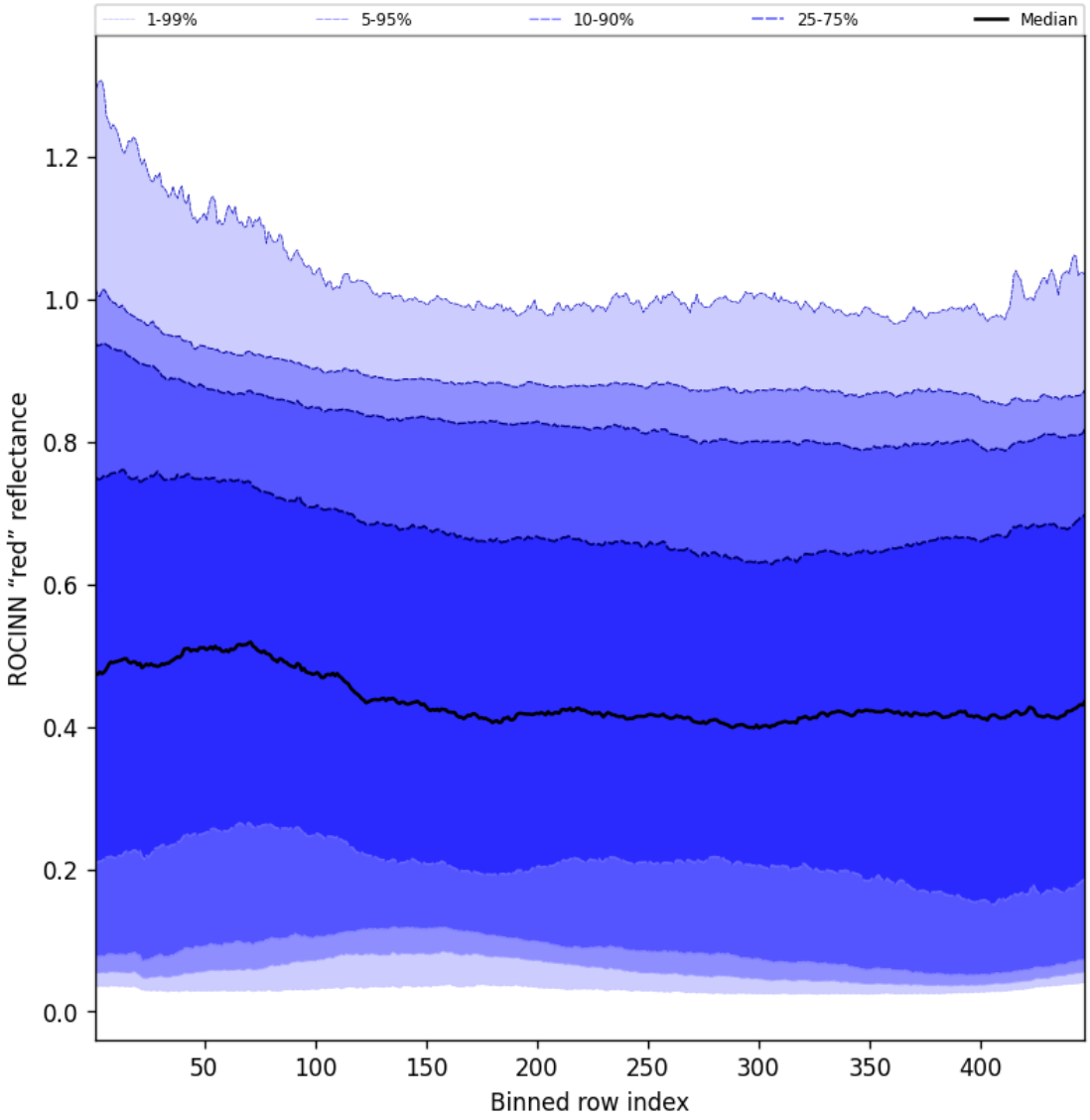

Figure 67: Along track statistics of “ROCINN “red” reflectance” for 2025-04-28 to 2025-04-29

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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