

PyCAMA report generated by tropl2-proc

tropl2-proc

2025-03-24 (10:15)

1 Short Introduction

1.1 The list of parameters

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

2 Definitions

The averages shown here are *unweighed* averages:

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

with N the number of observations in the dataset.

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

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

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

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

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

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

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

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

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

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

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

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

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

Table 1: Parameterlist and basic statistics for the analysis

Variable	mean $\pm \sigma$	Count	Mode	IQR	Median	Minimum	Maximum
qa value [1]	0.617 ± 0.389	11631846	5.000×10^{-3}	0.650	0.810	0.0	1.000
cloud fraction [1]	0.552 ± 0.349	11631846	0.995	0.749	0.502	5.055×10^{-3}	1.000
cloud top height [m]	$(0.403 \pm 0.279) \times 10^4$	11631846	1.725×10^3	3.677×10^3	3.402×10^3	0.0	2.000×10^4
cloud optical thickness [1]	18.0 ± 31.9	11631846	8.91	10.4	9.07	1.000	250
cloud fraction crb [1]	0.551 ± 0.349	11631846	0.995	0.748	0.502	8.027×10^{-3}	1.000
cloud height crb [m]	$(0.321 \pm 0.250) \times 10^4$	11631846	75.0	3.291×10^3	2.646×10^3	0.0	2.000×10^4
cloud albedo crb [1]	0.586 ± 0.209	11631846	0.995	0.256	0.569	0.0	1.000
surface albedo fitted [1]	0.255 ± 0.310	11631846	2.500×10^{-2}	0.384	5.830×10^{-2}	0.0	1.000
surface albedo fitted crb [1]	0.245 ± 0.300	11631846	1.500×10^{-2}	0.403	4.888×10^{-2}	0.0	1.000
fitted root mean square [1]	$(6.557 \pm 10.166) \times 10^{-4}$	11631846	5.000×10^{-5}	7.572×10^{-4}	4.029×10^{-4}	1.979×10^{-6}	0.322
fitted root mean square crb [1]	$(5.853 \pm 7.948) \times 10^{-4}$	11631846	5.000×10^{-5}	7.087×10^{-4}	3.143×10^{-4}	1.204×10^{-6}	0.845
wavelength shift [nm]	$(7.247 \pm 6.638) \times 10^{-3}$	11631846	9.000×10^{-4}	8.972×10^{-3}	6.719×10^{-3}	-6.528×10^{-2}	6.379×10^{-2}
cloud fraction apriori [1]	0.558 ± 0.353	11631846	0.995	0.775	0.515	0.0	1.000
reflectance blue ocra [1]	0.567 ± 0.237	11631846	0.265	0.405	0.547	0.142	2.02
reflectance green ocra [1]	0.517 ± 0.262	11631846	0.175	0.474	0.504	8.483×10^{-2}	2.06
reflectance continuum aband [1]	0.475 ± 0.275	11631846	4.500×10^{-2}	0.457	0.482	1.241×10^{-2}	5.24

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	0.300	0.950	1.000	1.000	1.000	1.000
cloud fraction [1]	2.538×10^{-2}	6.580×10^{-2}	0.102	0.146	0.225	0.974	1.000	1.000	1.000	1.000
cloud top height [m]	131	687	1.095×10^3	1.432×10^3	1.867×10^3	5.543×10^3	6.937×10^3	8.155×10^3	9.650×10^3	1.211×10^4
cloud optical thickness [1]	1.000	2.73	3.82	4.67	5.53	15.9	23.7	35.4	60.2	224
cloud fraction crb [1]	2.501×10^{-2}	6.499×10^{-2}	0.101	0.146	0.225	0.973	1.000	1.000	1.000	1.000
cloud height crb [m]	0.0	195	565	870	1.240×10^3	4.532×10^3	5.734×10^3	6.803×10^3	8.253×10^3	1.071×10^4
cloud albedo crb [1]	1.022×10^{-2}	0.231	0.347	0.411	0.462	0.719	0.804	0.880	0.971	1.000
surface albedo fitted [1]	0.0	9.328×10^{-3}	1.424×10^{-2}	1.879×10^{-2}	2.569×10^{-2}	0.410	0.699	0.804	0.896	0.992
surface albedo fitted crb [1]	9.094×10^{-5}	6.744×10^{-3}	1.072×10^{-2}	1.435×10^{-2}	2.005×10^{-2}	0.423	0.672	0.767	0.853	0.950
fitted root mean square [1]	1.590×10^{-5}	3.102×10^{-5}	4.980×10^{-5}	7.899×10^{-5}	1.391×10^{-4}	8.963×10^{-4}	1.219×10^{-3}	1.565×10^{-3}	2.098×10^{-3}	3.348×10^{-3}
fitted root mean square crb [1]	8.859×10^{-6}	2.051×10^{-5}	3.621×10^{-5}	5.724×10^{-5}	9.899×10^{-5}	8.077×10^{-4}	1.156×10^{-3}	1.520×10^{-3}	2.058×10^{-3}	3.213×10^{-3}
wavelength shift [nm]	-8.476×10^{-3}	-1.366×10^{-3}	2.450×10^{-5}	9.737×10^{-4}	2.475×10^{-3}	1.145×10^{-2}	1.373×10^{-2}	1.576×10^{-2}	1.852×10^{-2}	2.471×10^{-2}
cloud fraction apriori [1]	2.719×10^{-2}	6.357×10^{-2}	9.699×10^{-2}	0.142	0.225	1.000	1.000	1.000	1.000	1.000
reflectance blue ocra [1]	0.229	0.253	0.276	0.305	0.353	0.758	0.815	0.866	0.940	1.18
reflectance green ocra [1]	0.150	0.171	0.190	0.215	0.265	0.738	0.803	0.853	0.922	1.12
reflectance continuum aband [1]	2.938×10^{-2}	5.505×10^{-2}	9.097×10^{-2}	0.143	0.242	0.698	0.770	0.822	0.891	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]	0.551 ± 0.396	5148590	0.900	0.700	0.0	1.000	0.0	0.900
cloud fraction [1]	0.507 ± 0.347	5148590	0.720	0.422	5.055×10^{-3}	1.000	0.193	0.913
cloud top height [m]	$(0.391 \pm 0.260) \times 10^4$	5148590	3.270×10^3	3.446×10^3	0.0	2.000×10^4	1.936×10^3	5.207×10^3
cloud optical thickness [1]	18.1 ± 35.0	5148590	8.80	8.32	1.000	250	5.47	14.3
cloud fraction crb [1]	0.507 ± 0.347	5148590	0.719	0.423	8.027×10^{-3}	1.000	0.193	0.912
cloud height crb [m]	$(0.303 \pm 0.227) \times 10^4$	5148590	3.034×10^3	2.695×10^3	0.0	2.000×10^4	1.210×10^3	4.244×10^3
cloud albedo crb [1]	0.603 ± 0.229	5148590	0.309	0.590	0.0	1.000	0.459	0.768
surface albedo fitted [1]	0.318 ± 0.306	5148590	0.572	0.213	0.0	1.000	3.842×10^{-2}	0.611
surface albedo fitted crb [1]	0.306 ± 0.291	5148590	0.567	0.211	0.0	1.000	3.106×10^{-2}	0.598
fitted root mean square [1]	$(7.248 \pm 13.029) \times 10^{-4}$	5148590	8.478×10^{-4}	4.426×10^{-4}	1.979×10^{-6}	0.322	1.468×10^{-4}	9.945×10^{-4}
fitted root mean square crb [1]	$(6.132 \pm 9.316) \times 10^{-4}$	5148590	7.524×10^{-4}	3.190×10^{-4}	1.424×10^{-6}	0.845	9.377×10^{-5}	8.462×10^{-4}
wavelength shift [nm]	$(7.519 \pm 6.636) \times 10^{-3}$	5148590	9.199×10^{-3}	6.859×10^{-3}	-6.528×10^{-2}	6.347×10^{-2}	2.634×10^{-3}	1.183×10^{-2}
cloud fraction apriori [1]	0.519 ± 0.350	5148590	0.764	0.443	0.0	1.000	0.197	0.961
reflectance blue oca [1]	0.571 ± 0.251	5148590	0.433	0.552	0.154	2.02	0.337	0.770
reflectance green oca [1]	0.524 ± 0.274	5148590	0.503	0.518	9.182×10^{-2}	1.93	0.252	0.755
reflectance continuum aband [1]	0.487 ± 0.278	5148590	0.471	0.506	1.570×10^{-2}	3.79	0.243	0.714

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]	0.670 ± 0.374	6483256	0.590	0.890	0.0	1.000	0.400	0.990
cloud fraction [1]	0.587 ± 0.347	6483256	0.736	0.582	7.887×10^{-3}	1.000	0.258	0.994
cloud top height [m]	$(0.413 \pm 0.294) \times 10^4$	6483256	4.030×10^3	3.360×10^3	0.0	2.000×10^4	1.817×10^3	5.847×10^3
cloud optical thickness [1]	17.9 ± 29.3	6483256	11.5	9.78	1.000	250	5.60	17.1
cloud fraction crb [1]	0.586 ± 0.347	6483256	0.736	0.581	8.339×10^{-3}	1.000	0.257	0.993
cloud height crb [m]	$(0.334 \pm 0.266) \times 10^4$	6483256	3.542×10^3	2.606×10^3	0.0	1.893×10^4	1.261×10^3	4.803×10^3
cloud albedo crb [1]	0.572 ± 0.190	6483256	0.219	0.558	0.0	1.000	0.464	0.684
surface albedo fitted [1]	0.205 ± 0.304	6483256	0.244	3.854×10^{-2}	0.0	1.000	2.105×10^{-2}	0.265
surface albedo fitted crb [1]	0.197 ± 0.299	6483256	0.245	3.122×10^{-2}	0.0	1.000	1.589×10^{-2}	0.261
fitted root mean square [1]	$(6.009 \pm 7.066) \times 10^{-4}$	6483256	6.886×10^{-4}	3.753×10^{-4}	2.087×10^{-6}	0.274	1.334×10^{-4}	8.220×10^{-4}
fitted root mean square crb [1]	$(5.631 \pm 6.657) \times 10^{-4}$	6483256	6.782×10^{-4}	3.111×10^{-4}	1.204×10^{-6}	1.317×10^{-2}	1.031×10^{-4}	7.812×10^{-4}
wavelength shift [nm]	$(7.031 \pm 6.632) \times 10^{-3}$	6483256	8.816×10^{-3}	6.612×10^{-3}	-4.416×10^{-2}	6.379×10^{-2}	2.345×10^{-3}	1.116×10^{-2}
cloud fraction apriori [1]	0.589 ± 0.353	6483256	0.748	0.588	0.0	1.000	0.252	1.000
reflectance blue ocrs [1]	0.564 ± 0.225	6483256	0.377	0.544	0.142	2.01	0.367	0.744
reflectance green ocrs [1]	0.511 ± 0.252	6483256	0.441	0.497	8.483×10^{-2}	2.06	0.277	0.718
reflectance continuum aband [1]	0.465 ± 0.273	6483256	0.443	0.466	1.241×10^{-2}	5.24	0.240	0.684

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]	0.656 ± 0.376	7584021	0.620	0.880	0.0	1.000	0.360	0.980
cloud fraction [1]	0.577 ± 0.356	7584021	0.770	0.570	7.887×10^{-3}	1.000	0.228	0.998
cloud top height [m]	$(0.345 \pm 0.240) \times 10^4$	7584021	2.932×10^3	2.869×10^3	0.0	2.000×10^4	1.672×10^3	4.604×10^3
cloud optical thickness [1]	19.2 ± 30.9	7584021	11.1	10.1	1.000	250	6.59	17.7
cloud fraction crb [1]	0.576 ± 0.356	7584021	0.770	0.569	8.520×10^{-3}	1.000	0.228	0.997
cloud height crb [m]	$(0.277 \pm 0.218) \times 10^4$	7584021	2.816×10^3	2.242×10^3	0.0	1.590×10^4	1.085×10^3	3.901×10^3
cloud albedo crb [1]	0.564 ± 0.181	7584021	0.213	0.548	0.0	1.000	0.458	0.671
surface albedo fitted [1]	0.132 ± 0.241	7584021	3.707×10^{-2}	3.226×10^{-2}	0.0	1.000	1.919×10^{-2}	5.627×10^{-2}
surface albedo fitted crb [1]	0.122 ± 0.230	7584021	3.237×10^{-2}	2.565×10^{-2}	0.0	1.000	1.466×10^{-2}	4.703×10^{-2}
fitted root mean square [1]	$(5.057 \pm 6.666) \times 10^{-4}$	7584021	5.913×10^{-4}	2.566×10^{-4}	1.979×10^{-6}	9.133×10^{-2}	9.161×10^{-5}	6.829×10^{-4}
fitted root mean square crb [1]	$(4.606 \pm 6.273) \times 10^{-4}$	7584021	5.287×10^{-4}	2.060×10^{-4}	1.204×10^{-6}	0.174	7.079×10^{-5}	5.995×10^{-4}
wavelength shift [nm]	$(6.661 \pm 6.685) \times 10^{-3}$	7584021	8.788×10^{-3}	5.939×10^{-3}	-4.416×10^{-2}	6.379×10^{-2}	1.997×10^{-3}	1.079×10^{-2}
cloud fraction apriori [1]	0.580 ± 0.361	7584021	0.775	0.578	0.0	1.000	0.225	1.000
reflectance blue ocrs [1]	0.540 ± 0.218	7584021	0.355	0.518	0.164	2.02	0.349	0.704
reflectance green ocrs [1]	0.482 ± 0.243	7584021	0.430	0.466	9.123×10^{-2}	1.93	0.251	0.680
reflectance continuum aband [1]	0.413 ± 0.268	7584021	0.484	0.417	1.241×10^{-2}	3.30	0.151	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]	0.540 ± 0.411	3156610	0.900	0.700	0.0	1.000	0.0	0.900
cloud fraction [1]	0.499 ± 0.329	3156610	0.610	0.419	7.052×10^{-3}	1.000	0.220	0.829
cloud top height [m]	$(0.553 \pm 0.311) \times 10^4$	3156610	4.472×10^3	5.079×10^3	0.0	2.000×10^4	3.114×10^3	7.587×10^3
cloud optical thickness [1]	13.5 ± 28.4	3156610	6.72	6.41	1.000	250	4.52	11.2
cloud fraction crb [1]	0.500 ± 0.328	3156610	0.609	0.420	8.027×10^{-3}	1.000	0.220	0.829
cloud height crb [m]	$(0.436 \pm 0.286) \times 10^4$	3156610	3.959×10^3	3.826×10^3	0.0	2.000×10^4	2.104×10^3	6.063×10^3
cloud albedo crb [1]	0.620 ± 0.241	3156610	0.322	0.624	0.0	1.000	0.476	0.799
surface albedo fitted [1]	0.495 ± 0.292	3156610	0.556	0.340	6.052×10^{-5}	1.000	0.242	0.798
surface albedo fitted crb [1]	0.486 ± 0.280	3156610	0.535	0.348	2.959×10^{-3}	1.000	0.239	0.774
fitted root mean square [1]	$(9.313 \pm 15.077) \times 10^{-4}$	3156610	8.239×10^{-4}	6.719×10^{-4}	3.407×10^{-6}	0.322	3.518×10^{-4}	1.176×10^{-3}
fitted root mean square crb [1]	$(8.150 \pm 9.013) \times 10^{-4}$	3156610	8.808×10^{-4}	5.638×10^{-4}	2.383×10^{-6}	0.539	2.314×10^{-4}	1.112×10^{-3}
wavelength shift [nm]	$(7.876 \pm 6.216) \times 10^{-3}$	3156610	8.479×10^{-3}	7.544×10^{-3}	-3.966×10^{-2}	6.316×10^{-2}	3.354×10^{-3}	1.183×10^{-2}
cloud fraction apriori [1]	0.508 ± 0.335	3156610	0.651	0.430	0.0	1.000	0.219	0.870
reflectance blue oca [1]	0.618 ± 0.269	3156610	0.470	0.646	0.142	2.01	0.356	0.826
reflectance green oca [1]	0.583 ± 0.289	3156610	0.529	0.629	8.483×10^{-2}	2.06	0.289	0.819
reflectance continuum aband [1]	0.593 ± 0.248	3156610	0.417	0.610	1.524×10^{-2}	5.24	0.368	0.785

3 Granule outlines

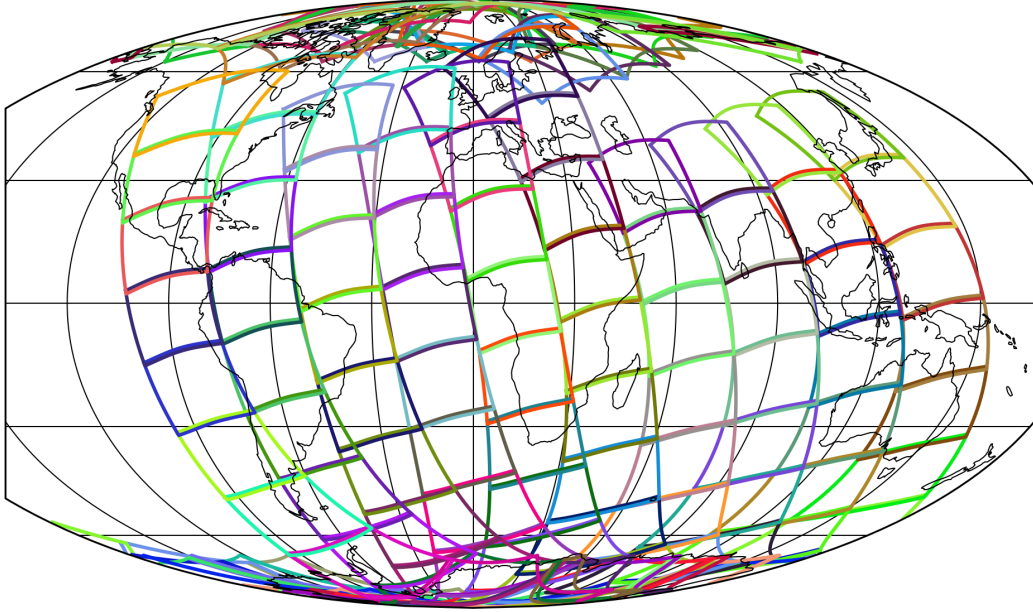


Figure 1: Outline of the granules.

4 Input data monitoring

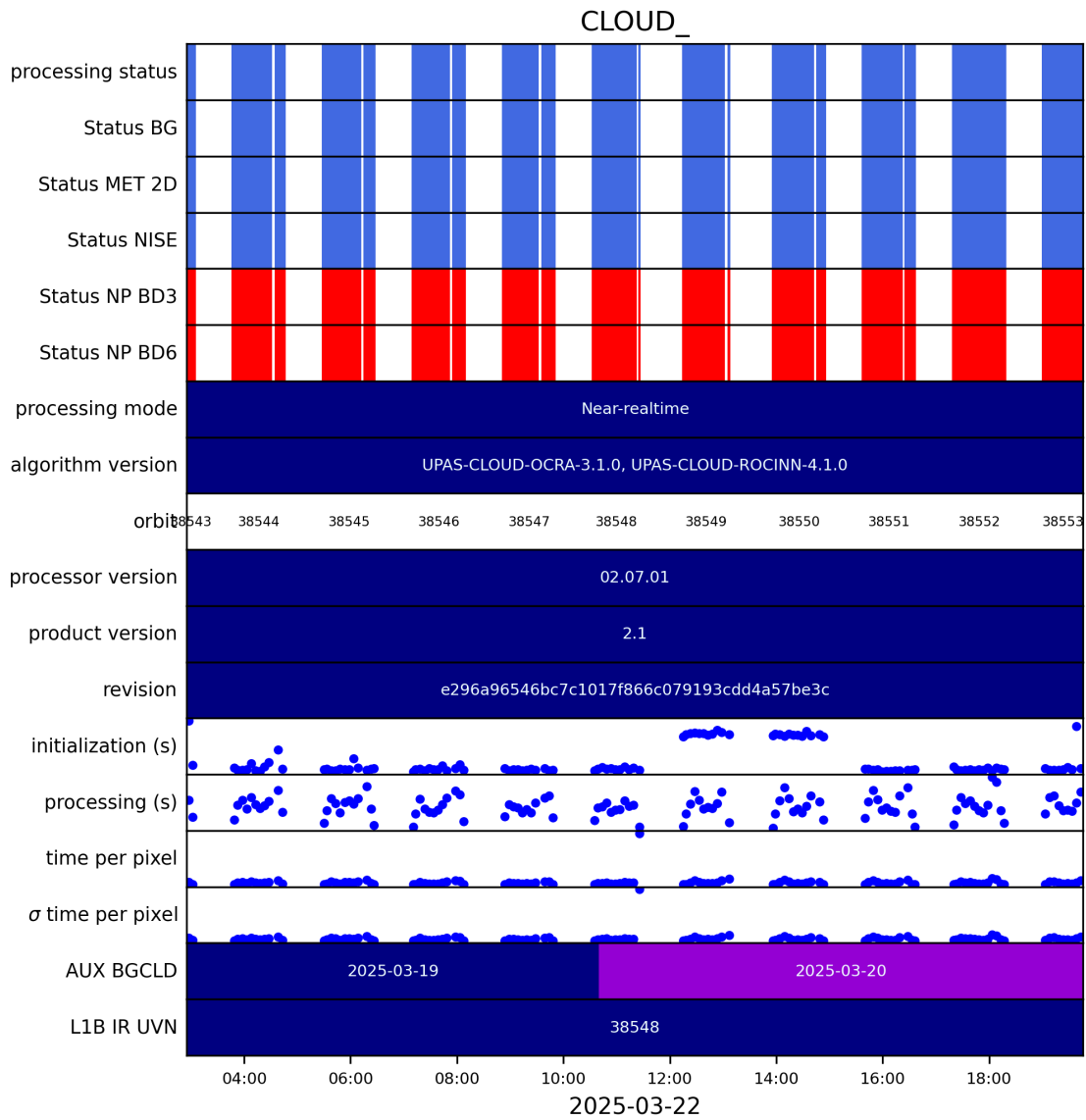


Figure 2: Input data per granule

5 Warnings and errors

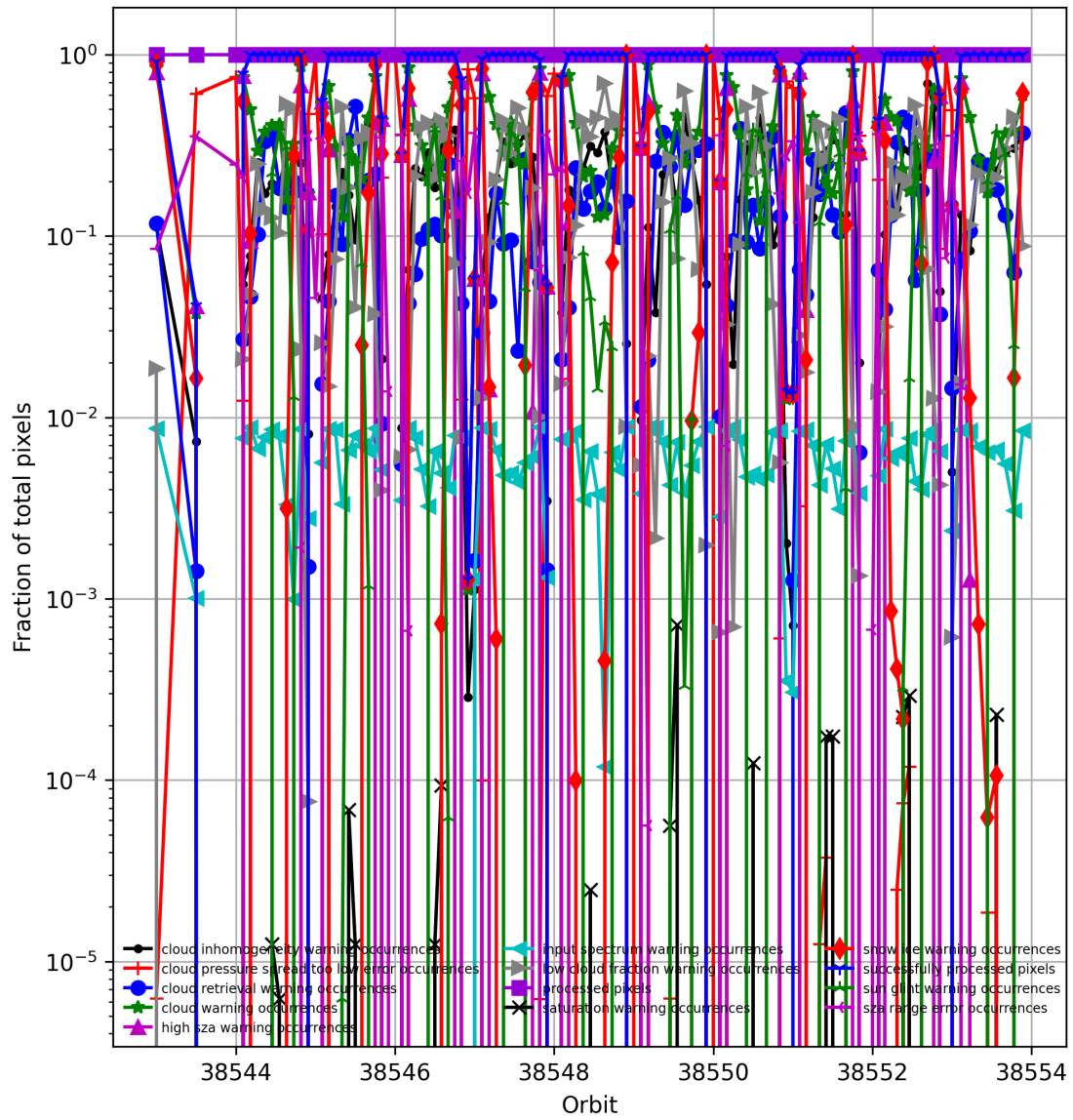


Figure 3: Fraction of pixels with specific warnings and errors during processing

6 World maps

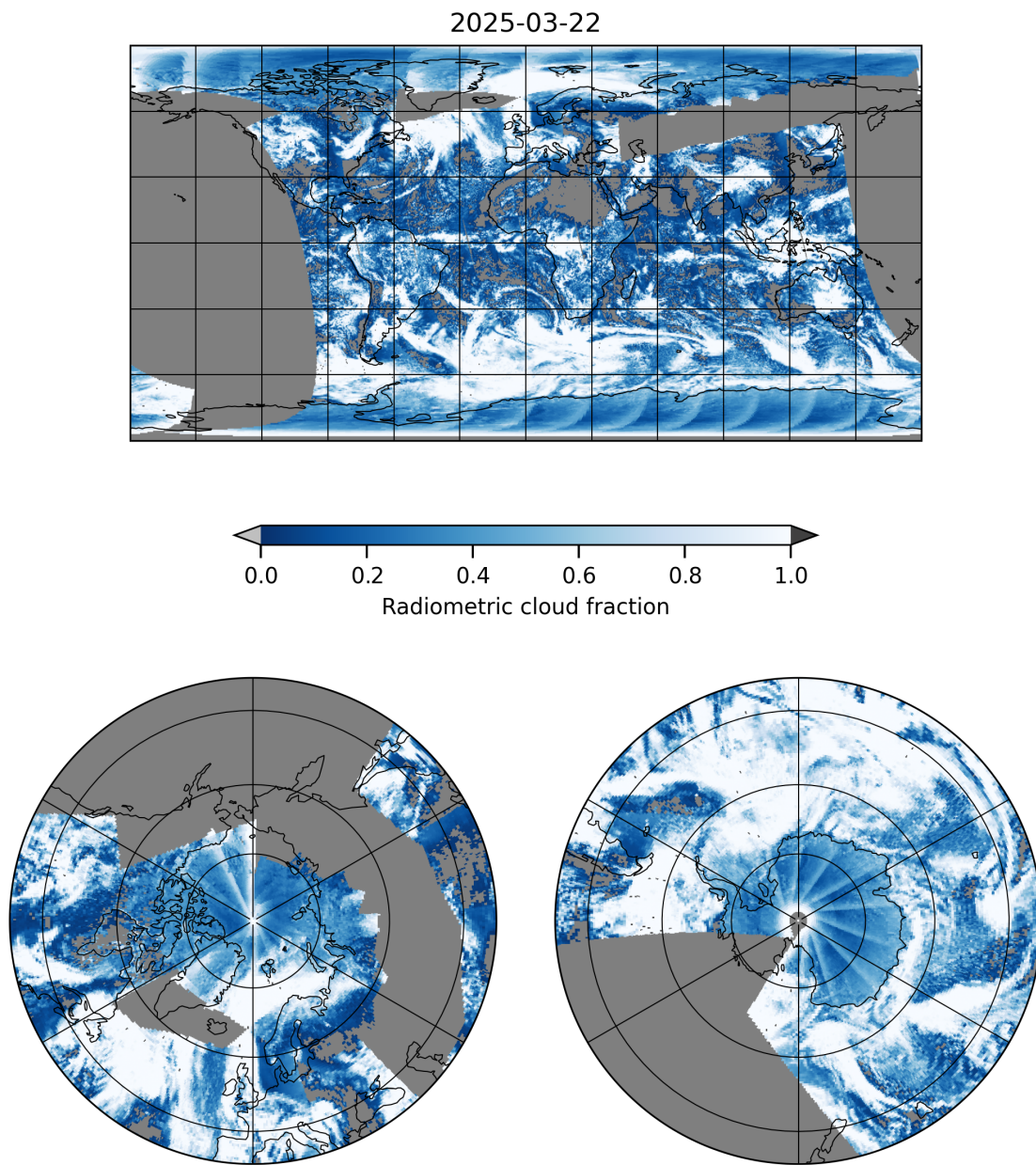


Figure 4: Map of “Radiometric cloud fraction” for 2025-03-22 to 2025-03-22

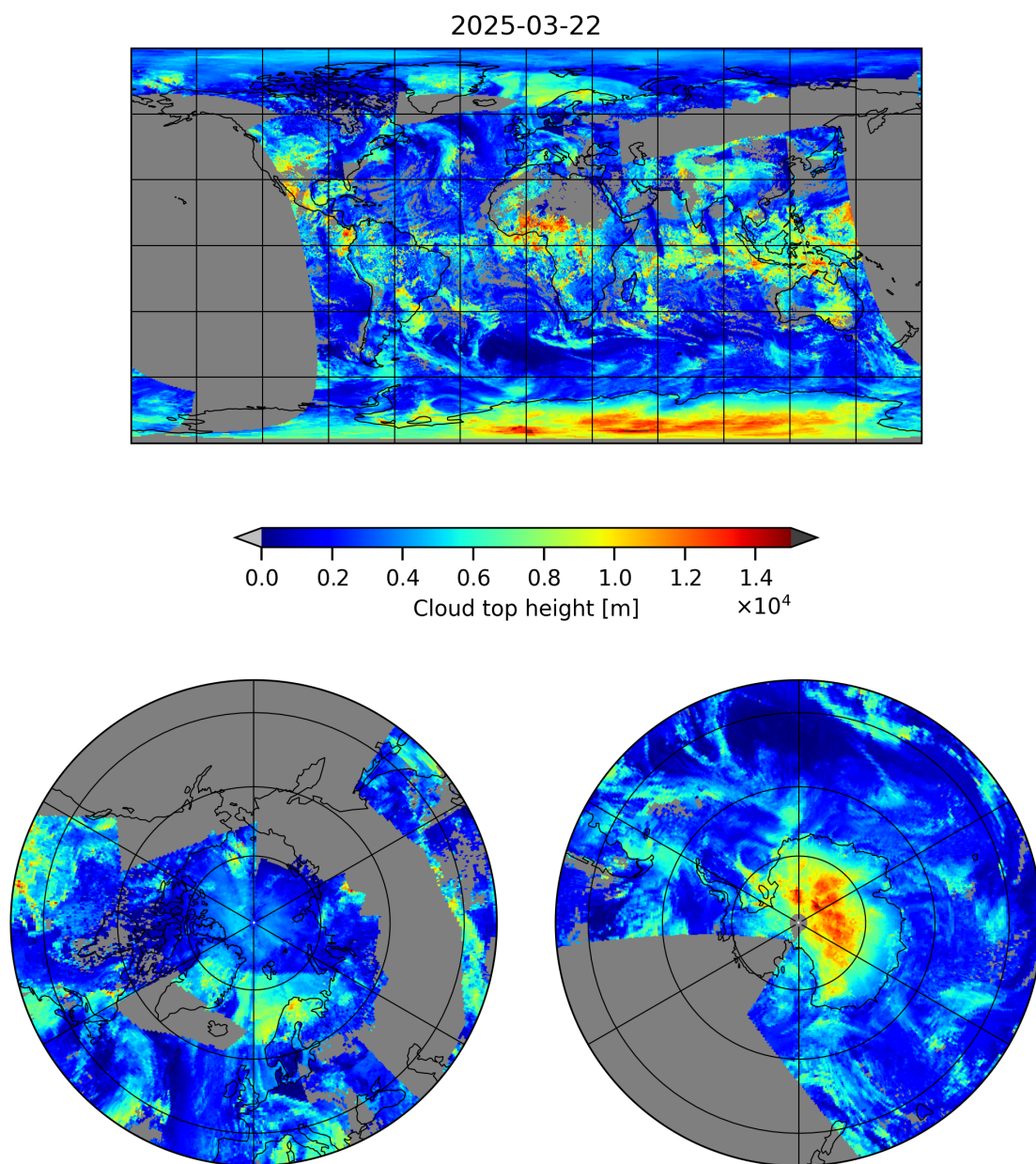


Figure 5: Map of “Cloud top height” for 2025-03-22 to 2025-03-22

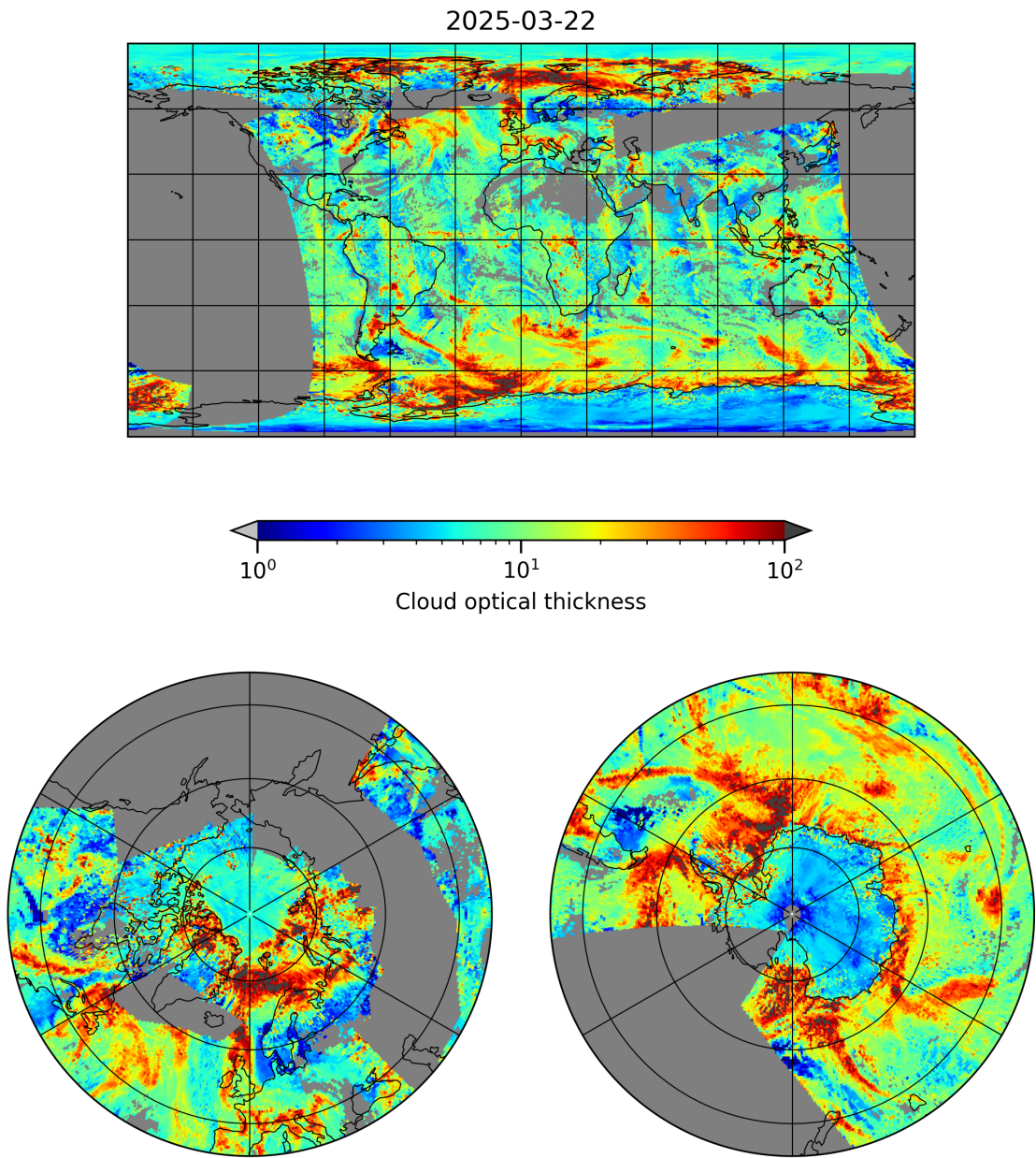


Figure 6: Map of “Cloud optical thickness” for 2025-03-22 to 2025-03-22

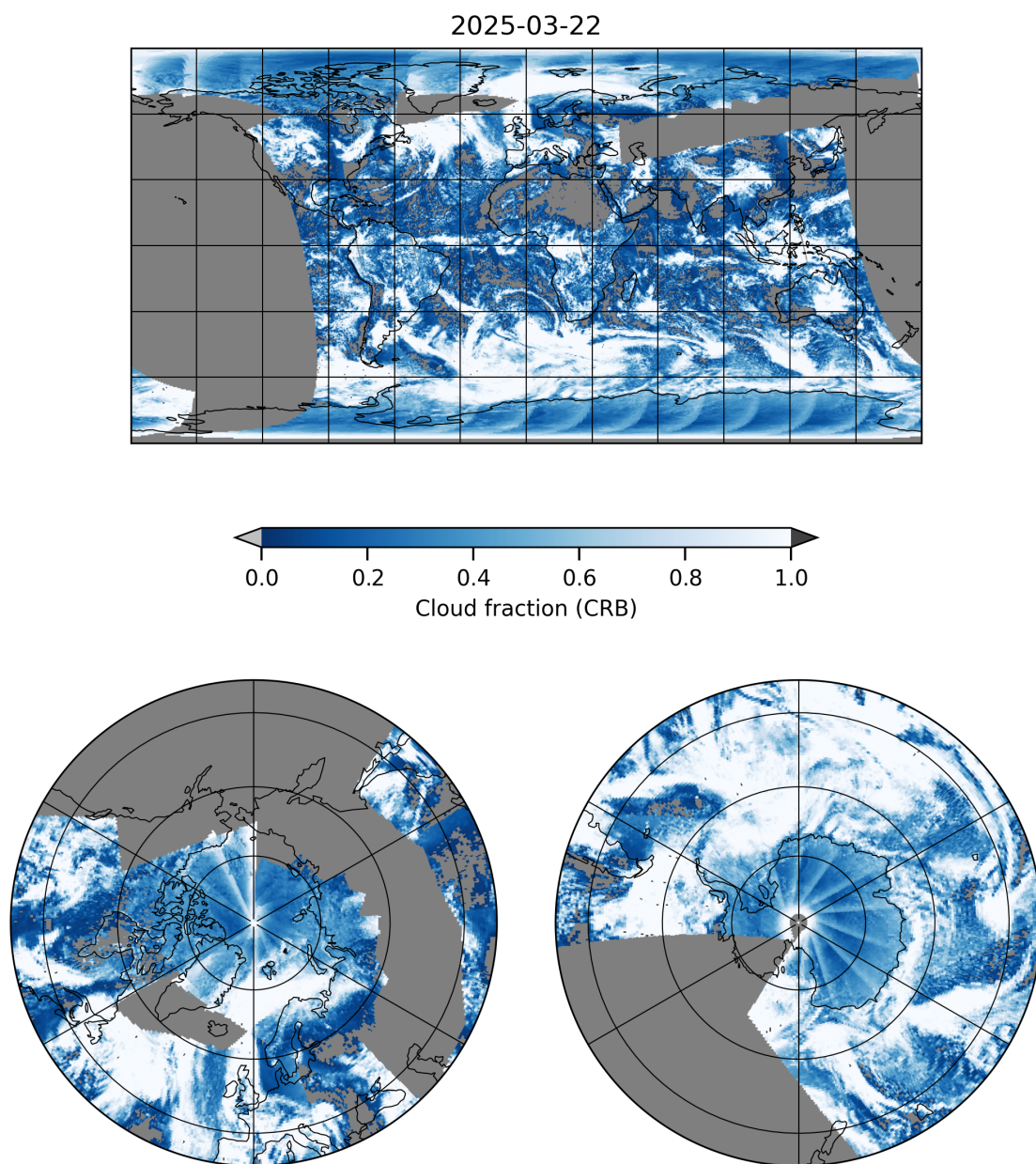


Figure 7: Map of “Cloud fraction (CRB)” for 2025-03-22 to 2025-03-22

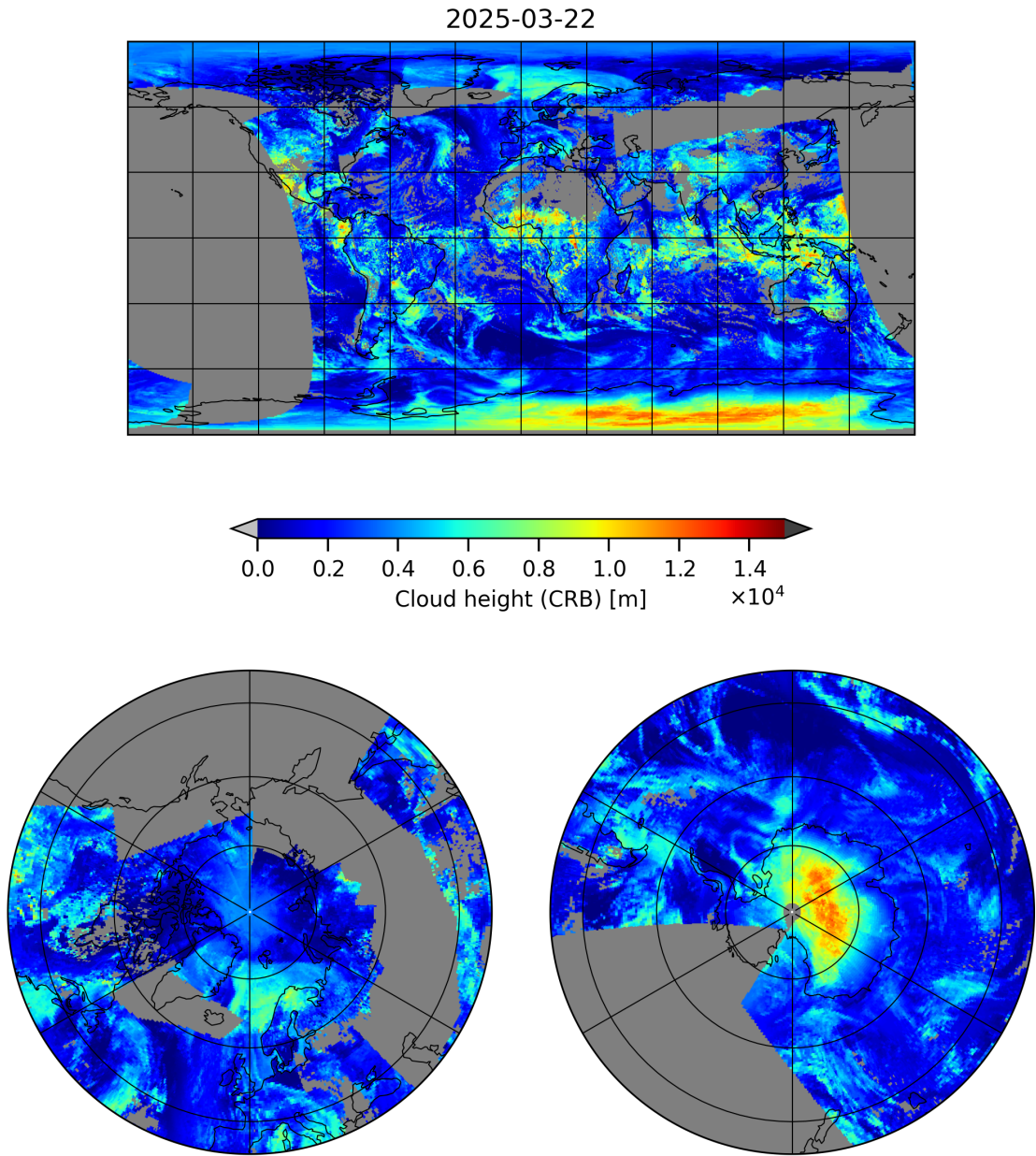


Figure 8: Map of “Cloud height (CRB)” for 2025-03-22 to 2025-03-22

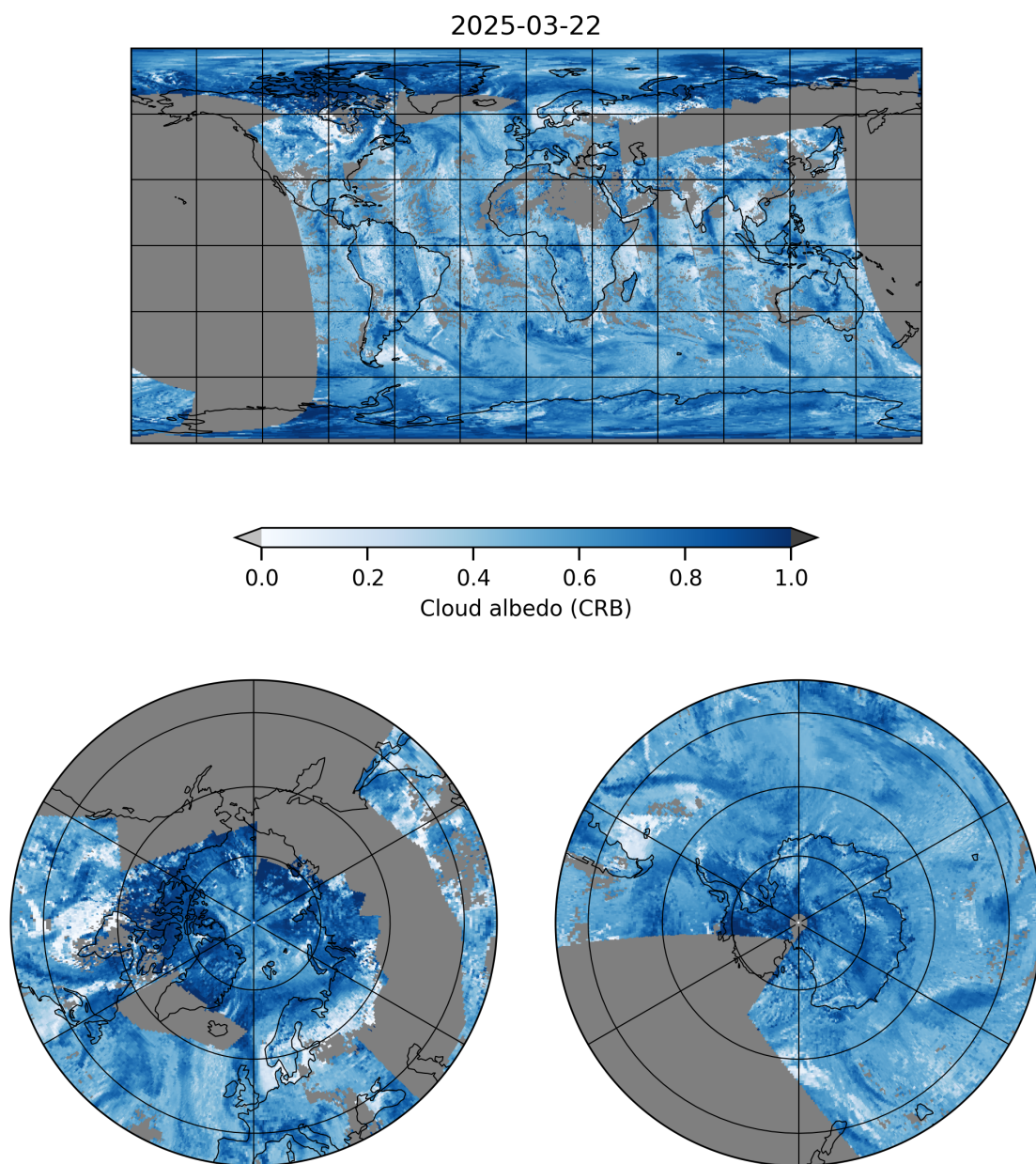


Figure 9: Map of “Cloud albedo (CRB)” for 2025-03-22 to 2025-03-22

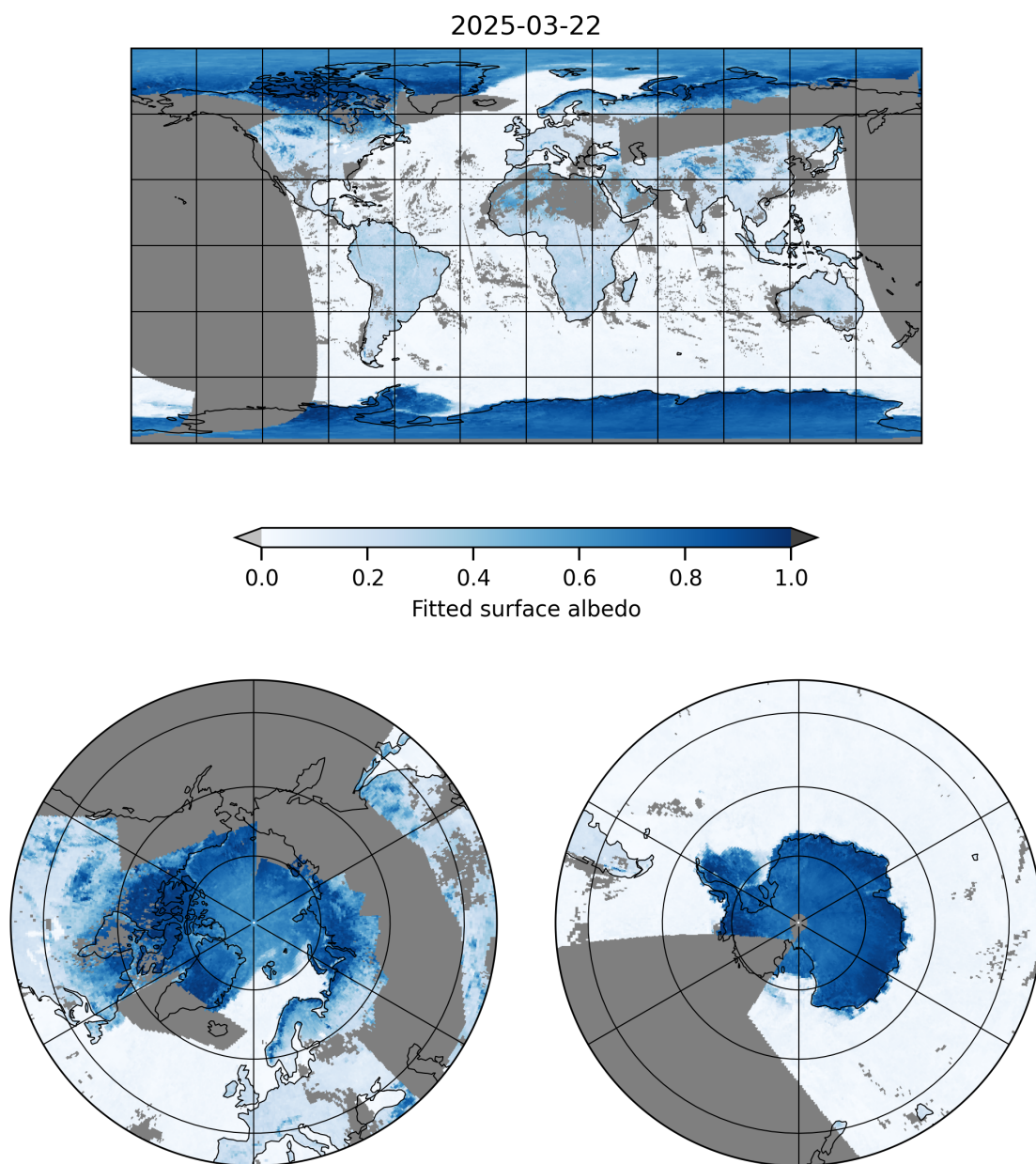


Figure 10: Map of "Fitted surface albedo" for 2025-03-22 to 2025-03-22

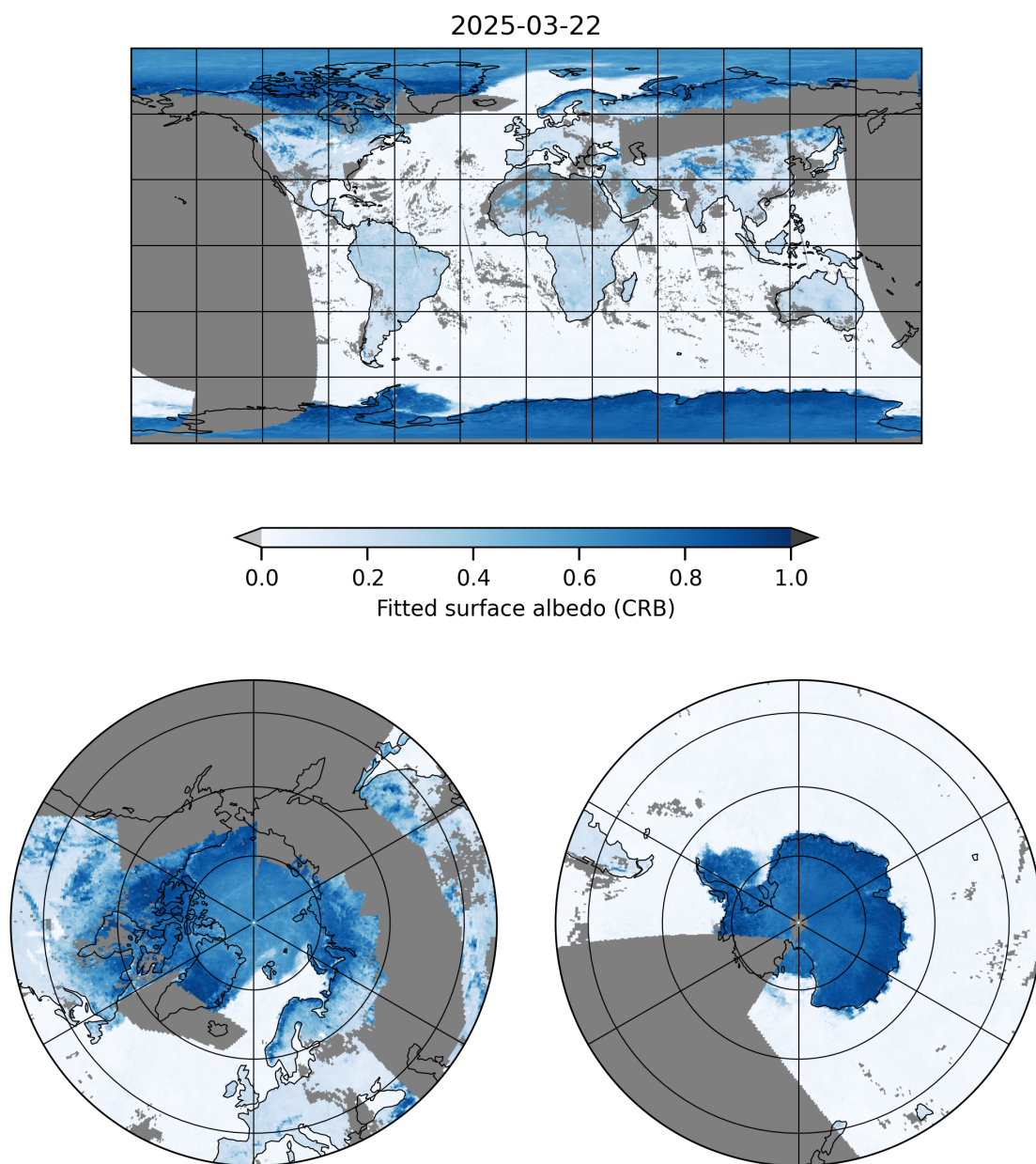


Figure 11: Map of “Fitted surface albedo (CRB)” for 2025-03-22 to 2025-03-22

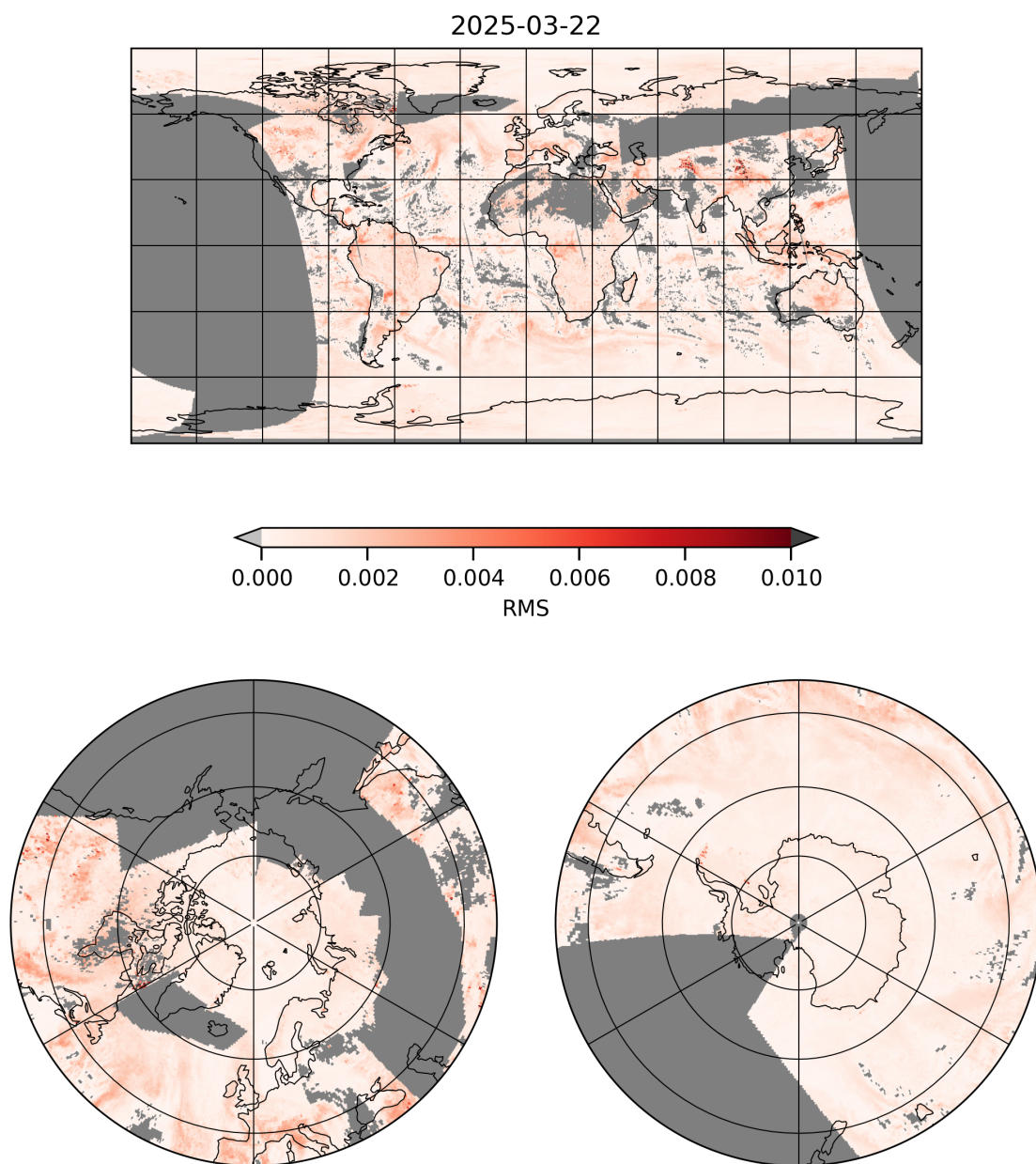


Figure 12: Map of “RMS” for 2025-03-22 to 2025-03-22

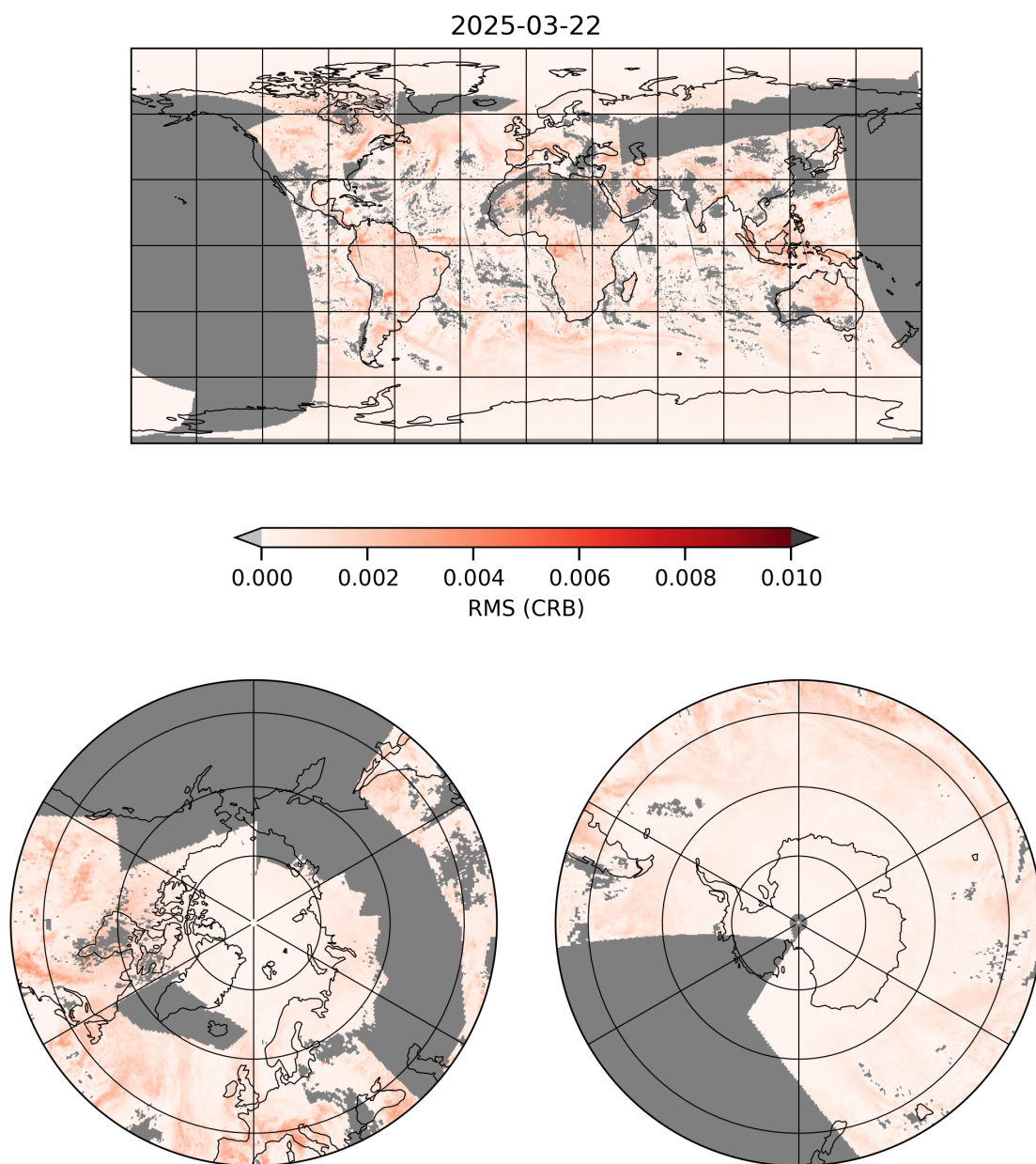


Figure 13: Map of “RMS (CRB)” for 2025-03-22 to 2025-03-22

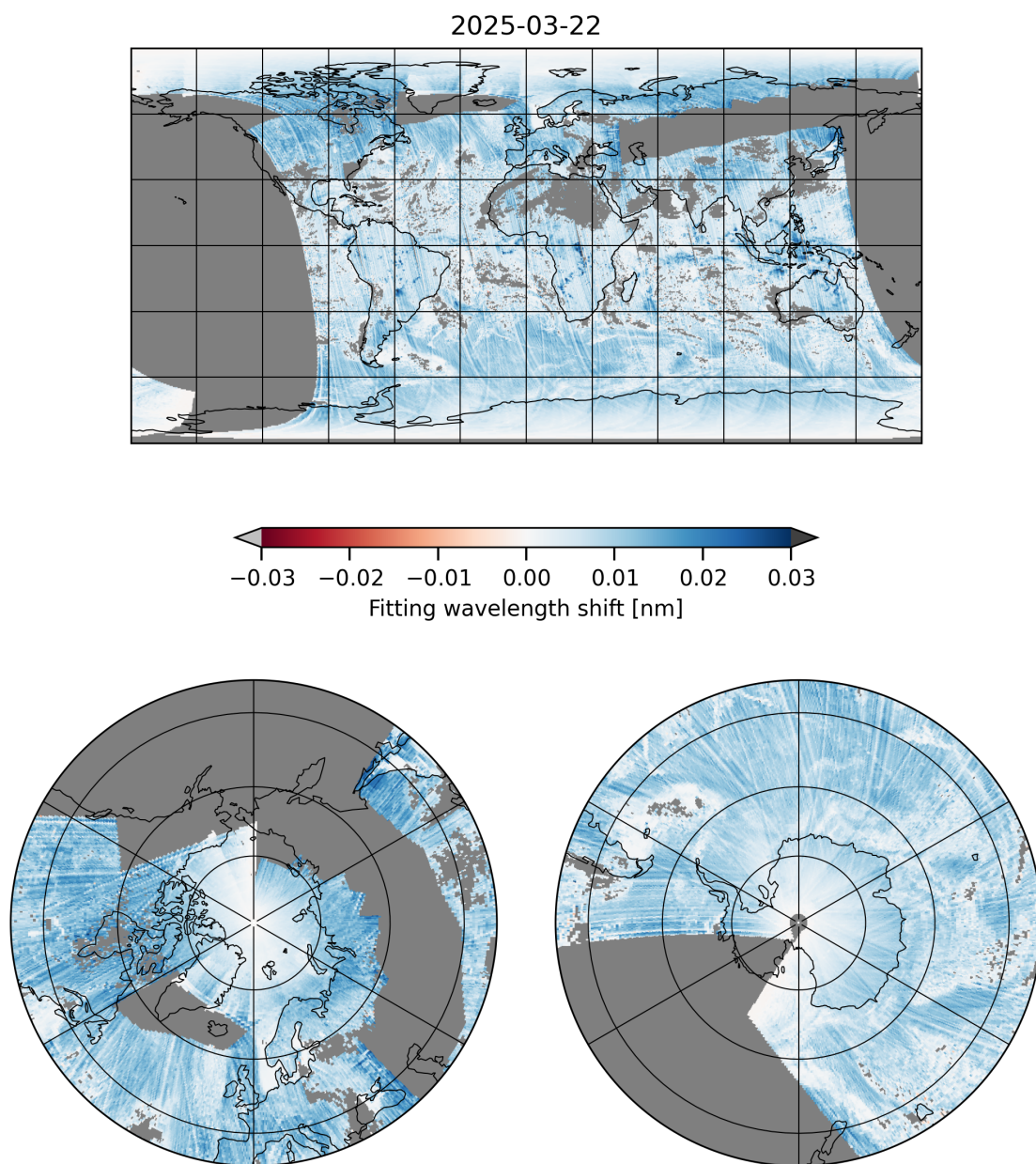


Figure 14: Map of “Fitting wavelength shift” for 2025-03-22 to 2025-03-22

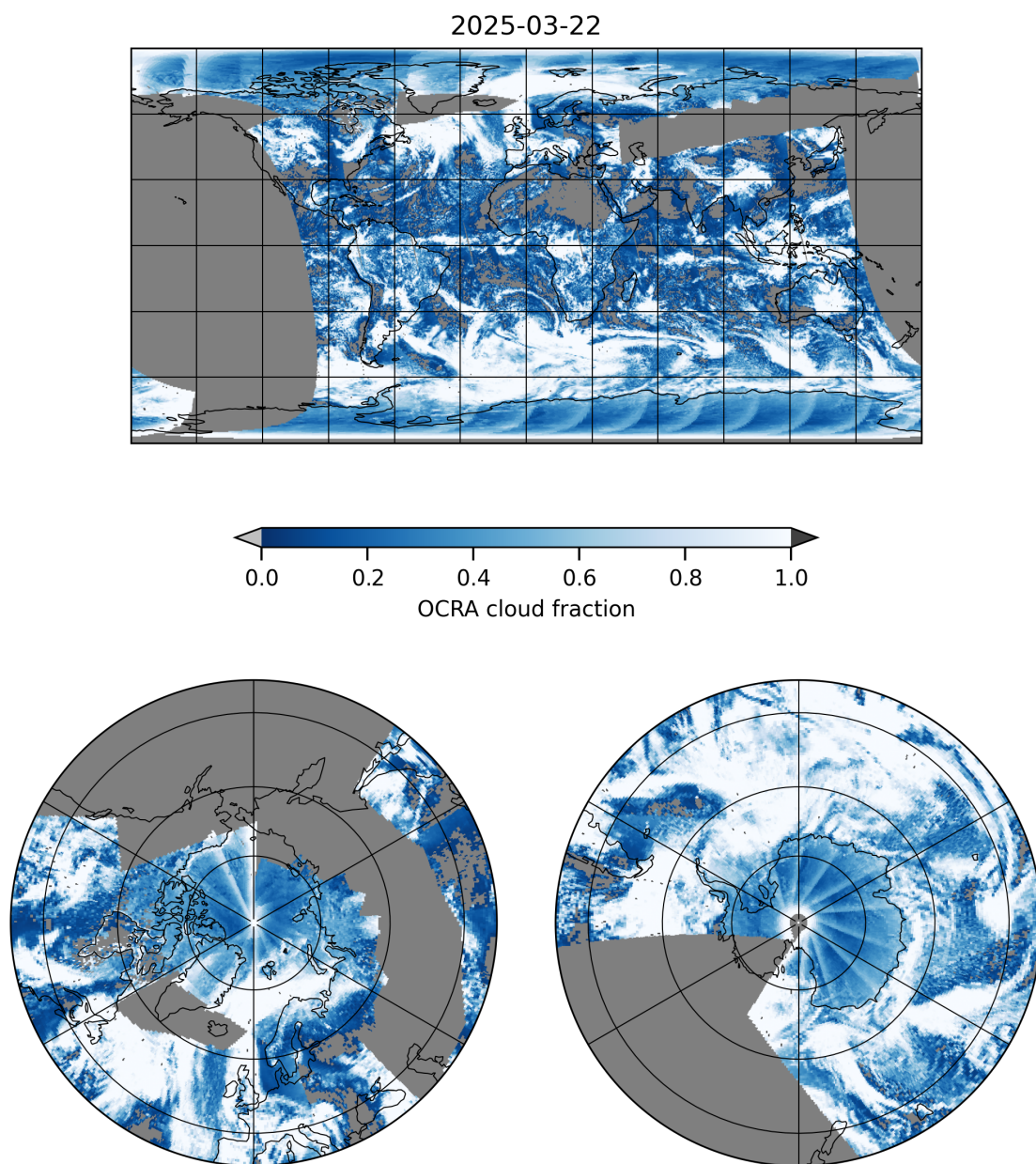


Figure 15: Map of “OCRA cloud fraction” for 2025-03-22 to 2025-03-22

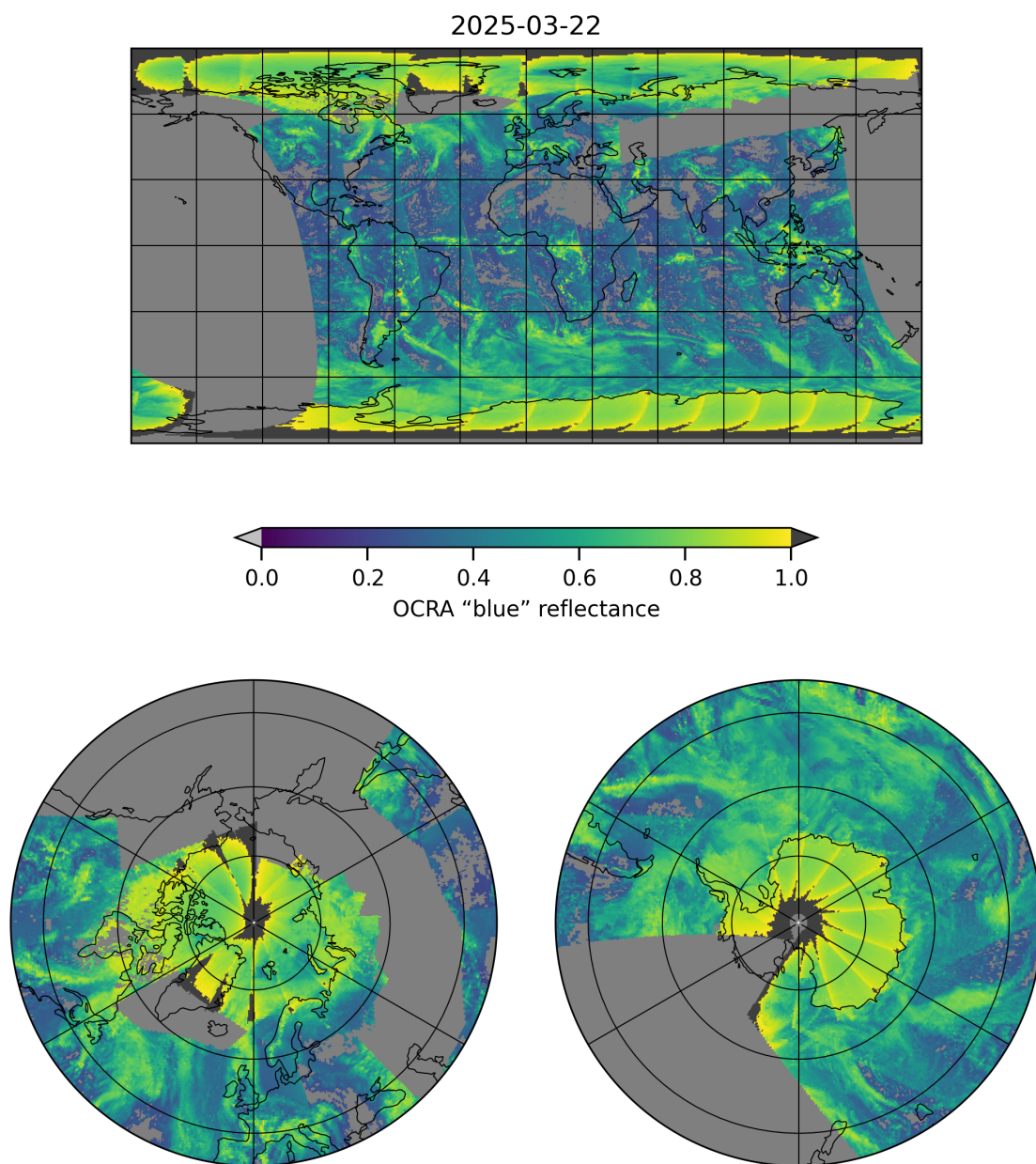


Figure 16: Map of "OCRA "blue" reflectance" for 2025-03-22 to 2025-03-22

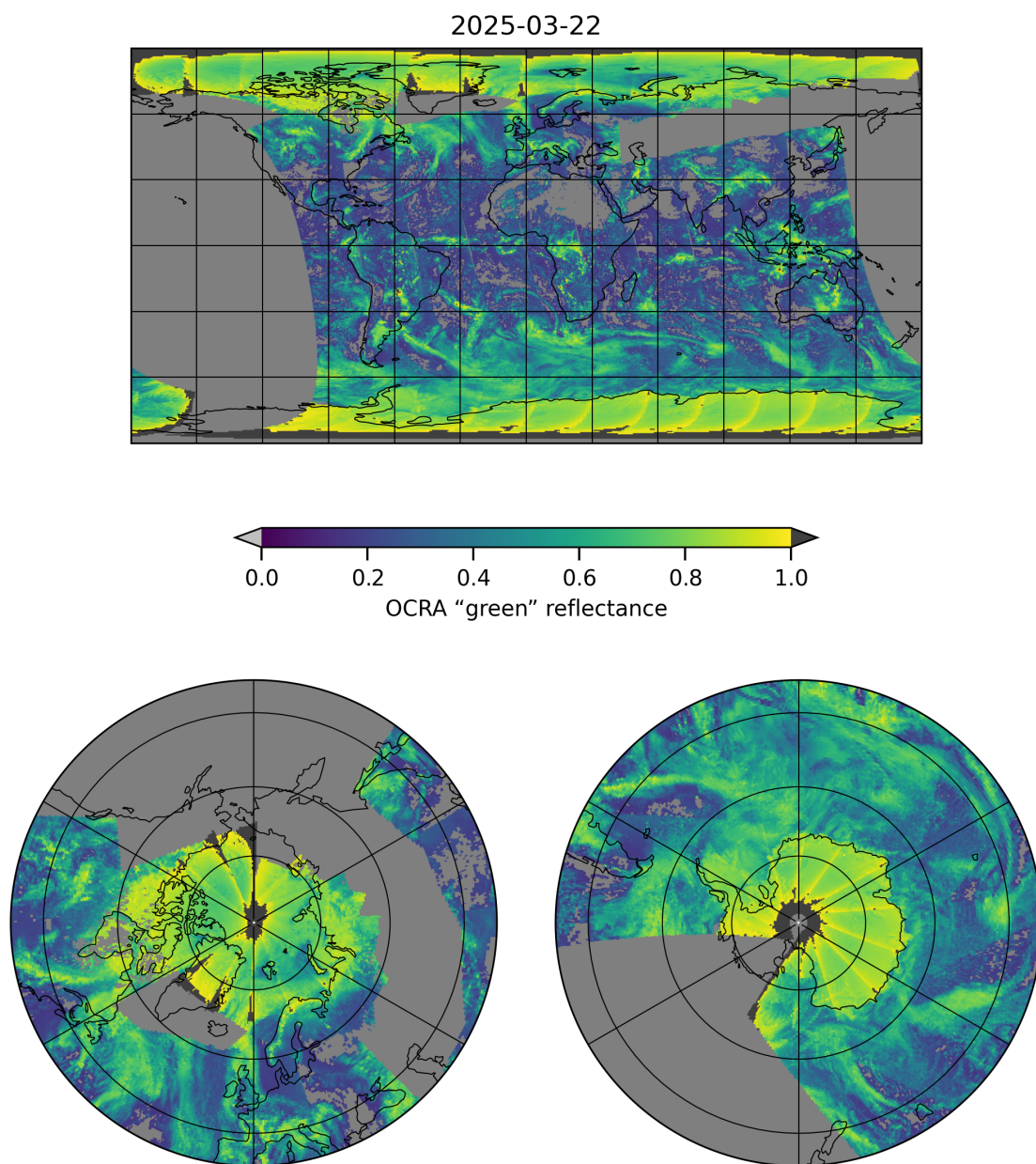


Figure 17: Map of "OCRA "green" reflectance" for 2025-03-22 to 2025-03-22

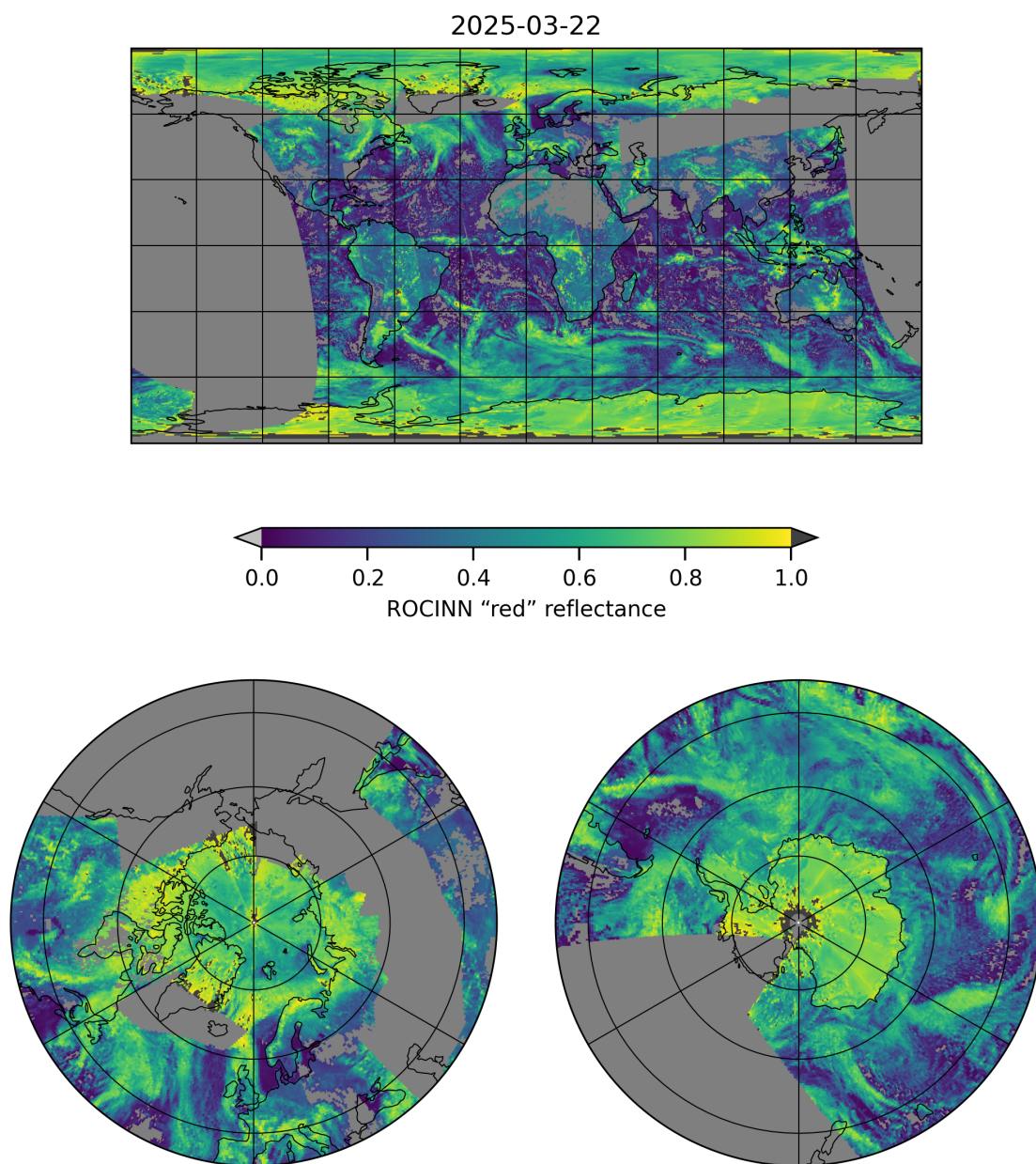


Figure 18: Map of "ROCINN "red" reflectance" for 2025-03-22 to 2025-03-22

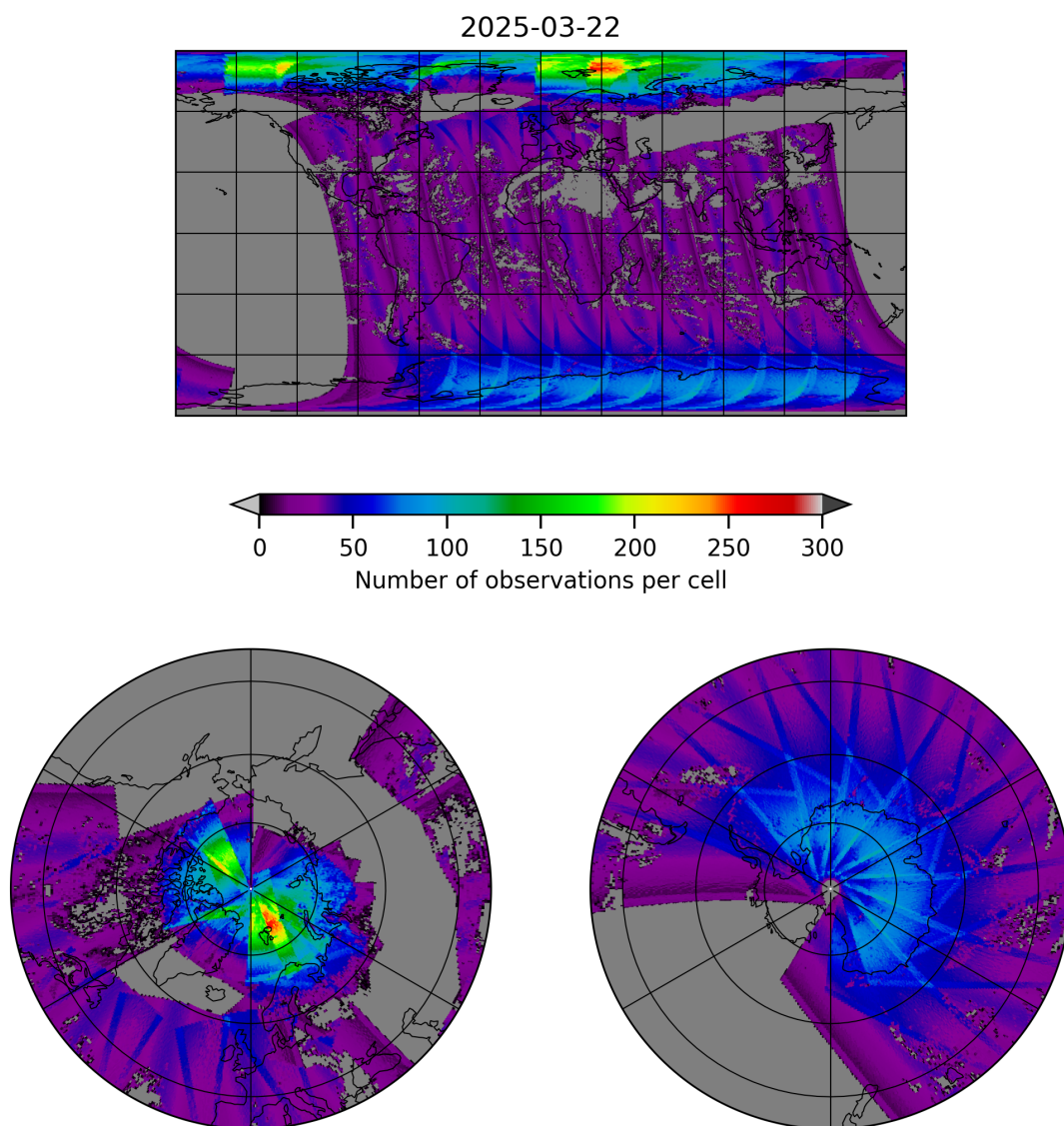


Figure 19: Map of the number of observations for 2025-03-22 to 2025-03-22

7 Zonal average

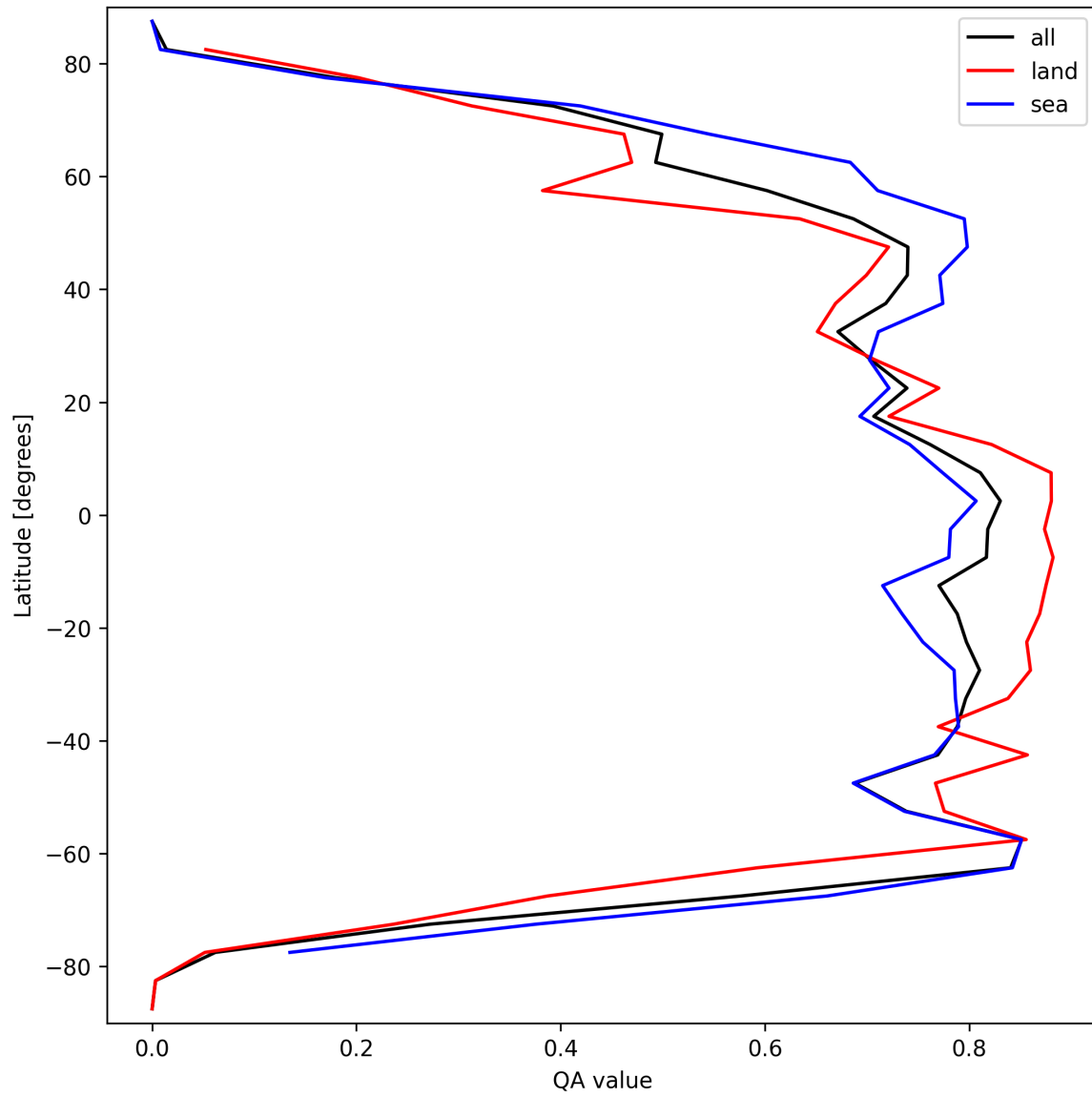


Figure 20: Zonal average of “QA value” for 2025-03-22 to 2025-03-22.

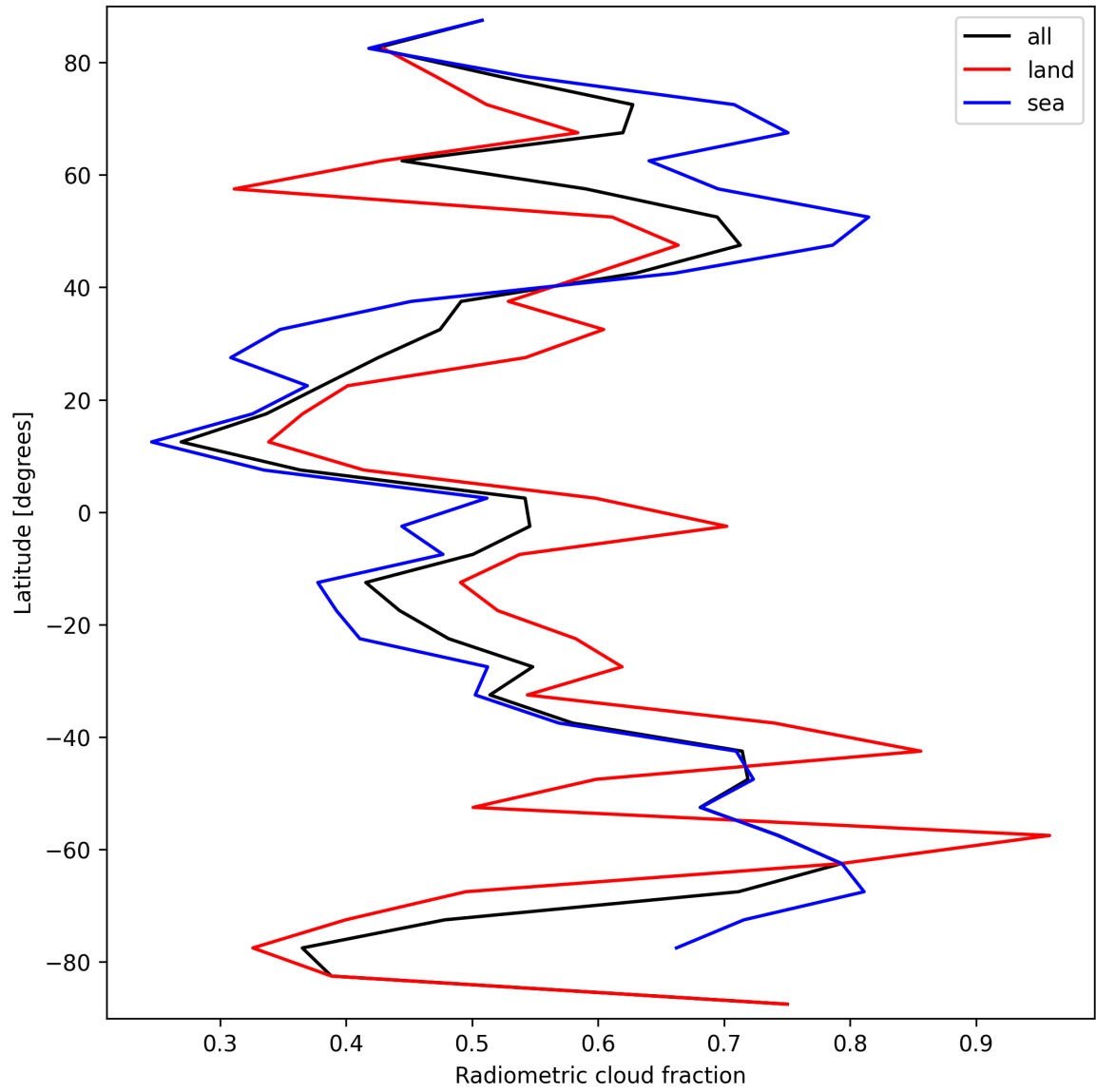


Figure 21: Zonal average of “Radiometric cloud fraction” for 2025-03-22 to 2025-03-22.

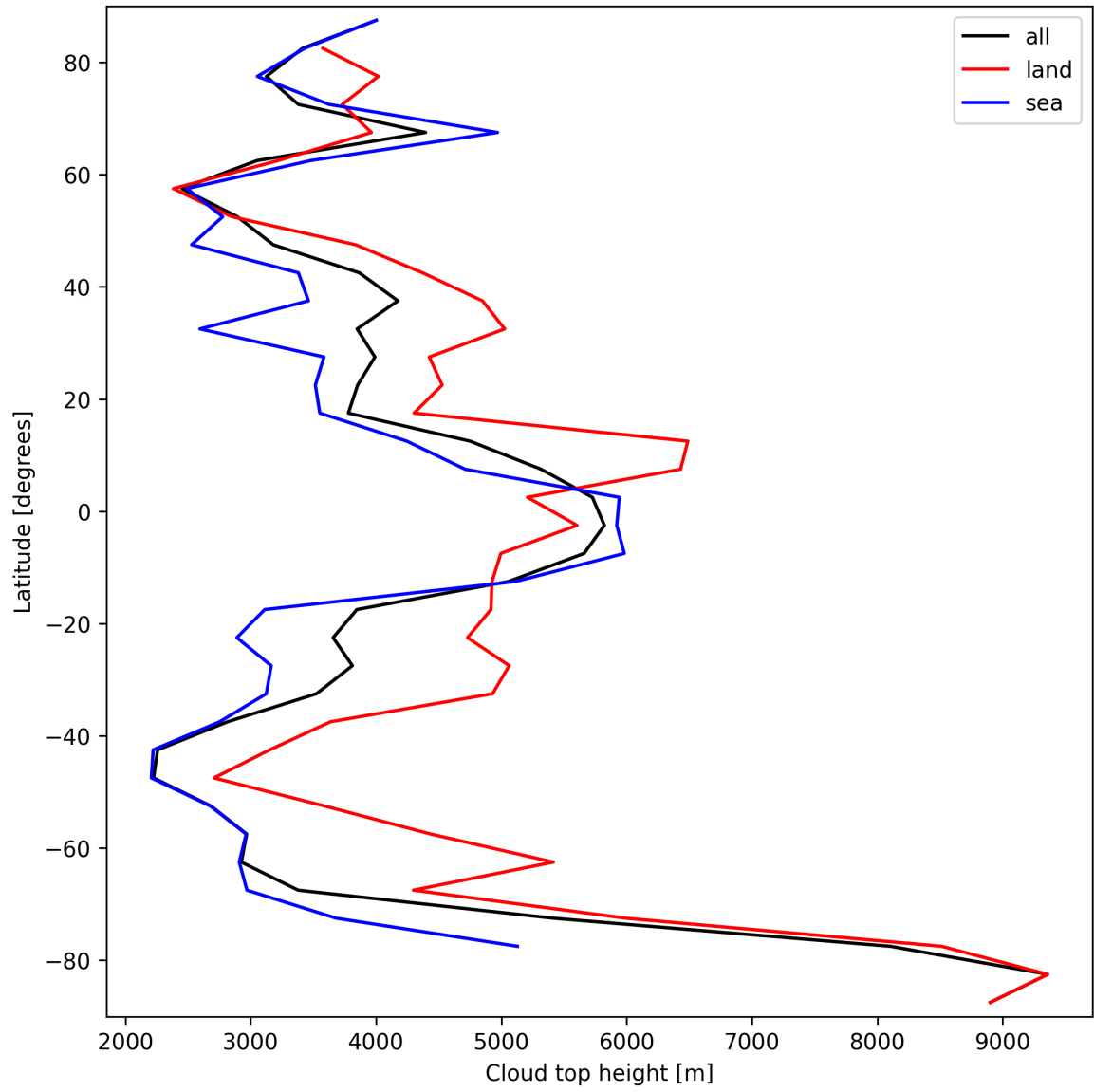


Figure 22: Zonal average of “Cloud top height” for 2025-03-22 to 2025-03-22.

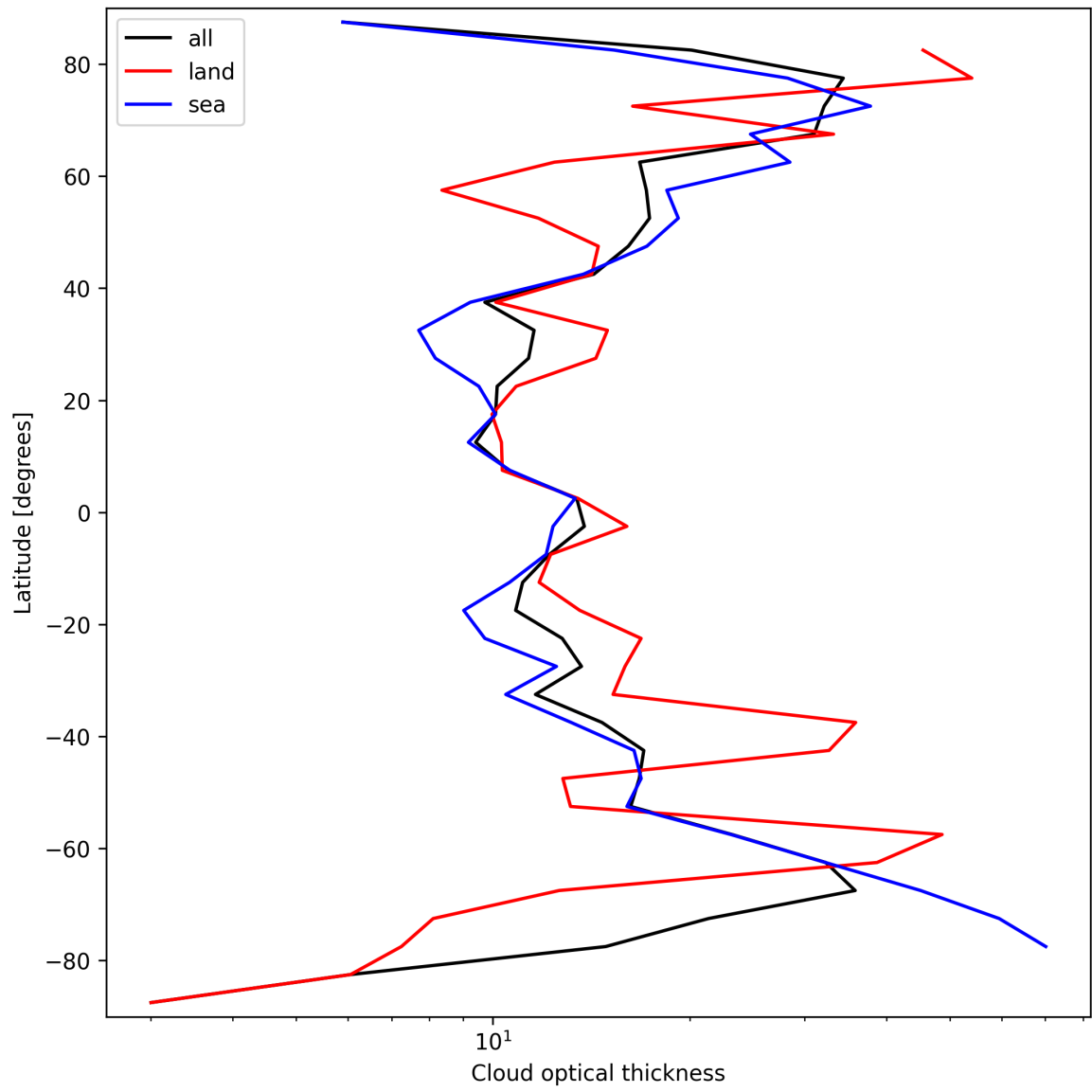


Figure 23: Zonal average of “Cloud optical thickness” for 2025-03-22 to 2025-03-22.

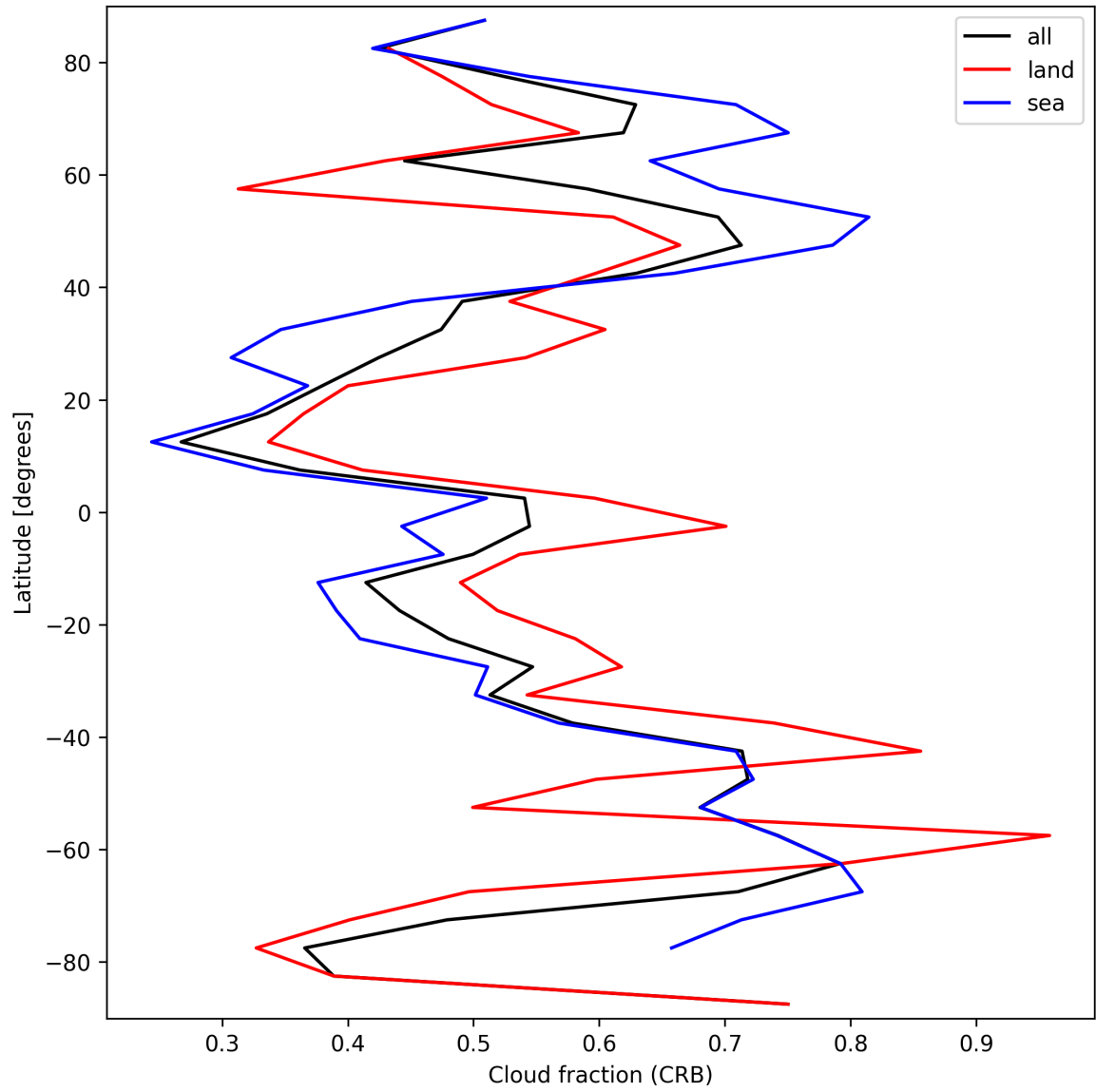


Figure 24: Zonal average of “Cloud fraction (CRB)” for 2025-03-22 to 2025-03-22.

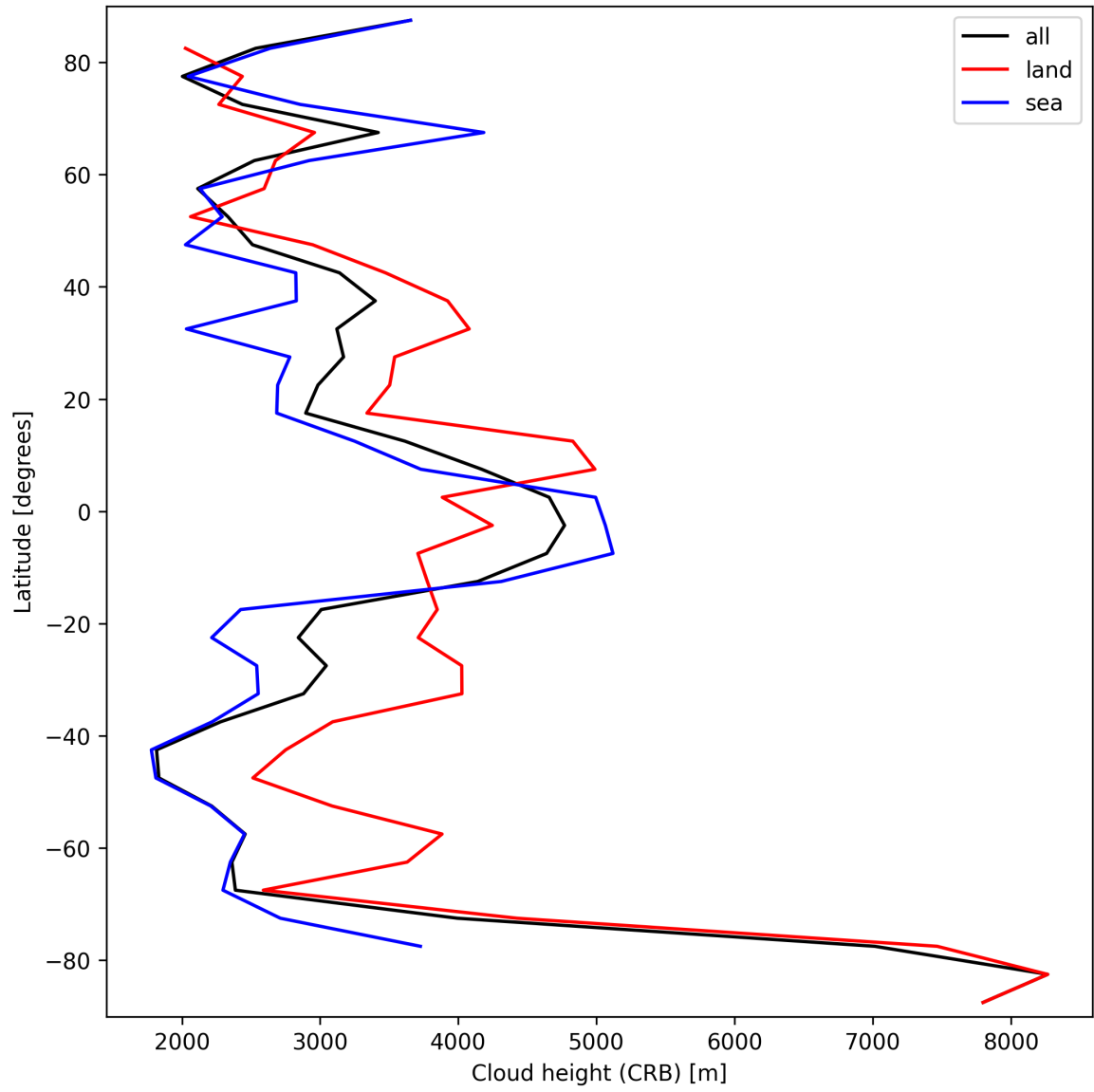


Figure 25: Zonal average of “Cloud height (CRB)” for 2025-03-22 to 2025-03-22.

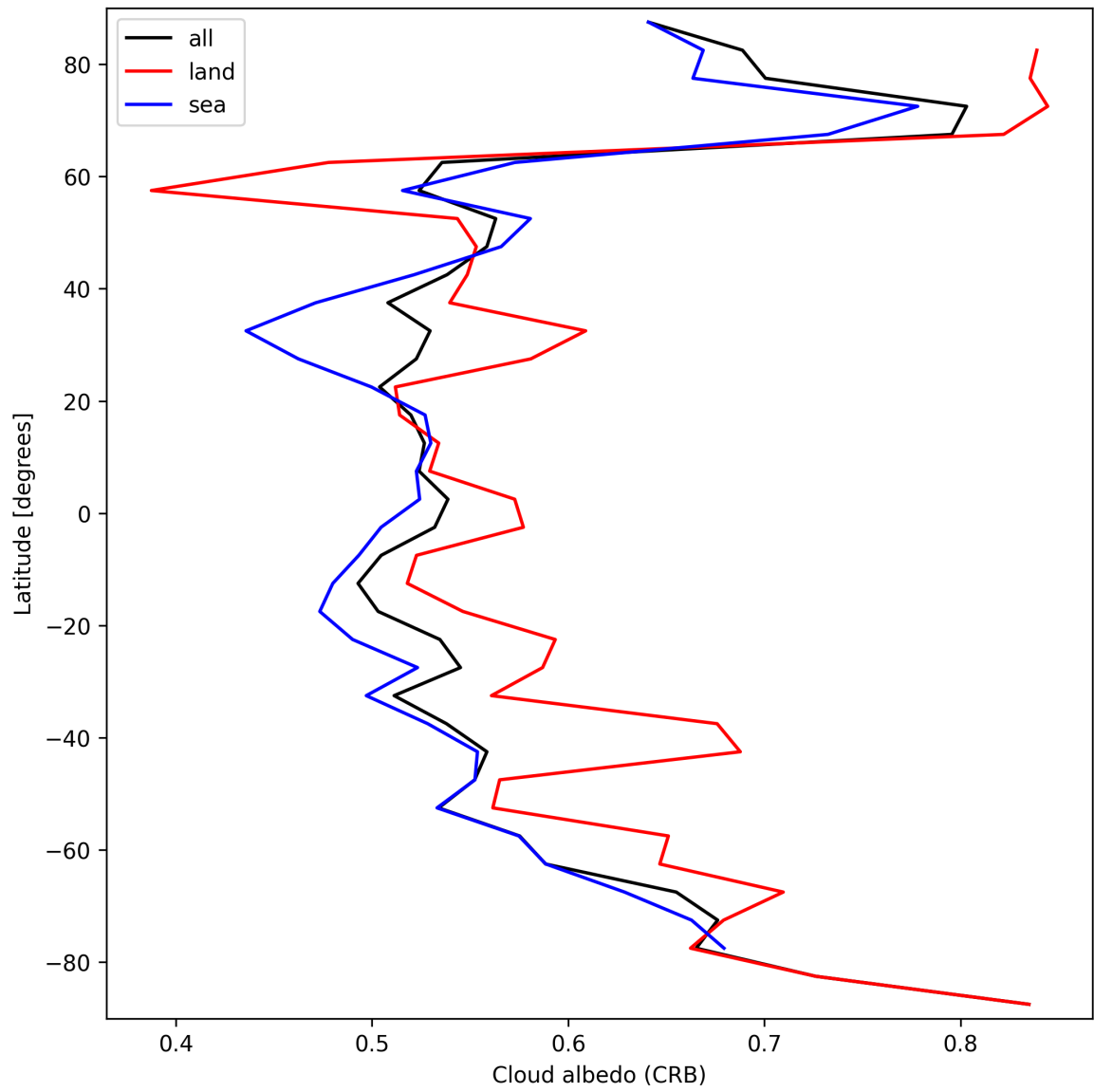


Figure 26: Zonal average of “Cloud albedo (CRB)” for 2025-03-22 to 2025-03-22.

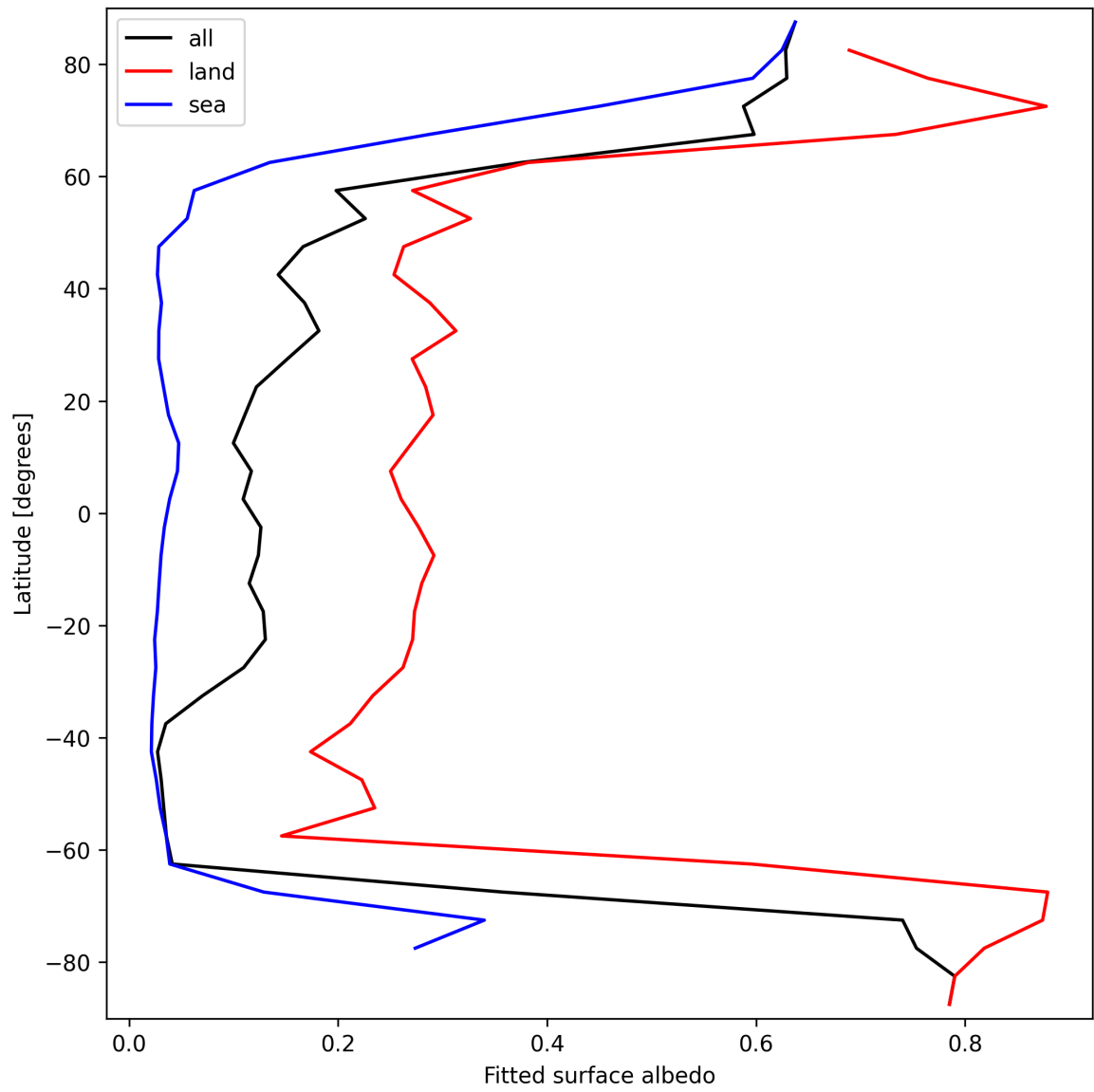


Figure 27: Zonal average of “Fitted surface albedo” for 2025-03-22 to 2025-03-22.

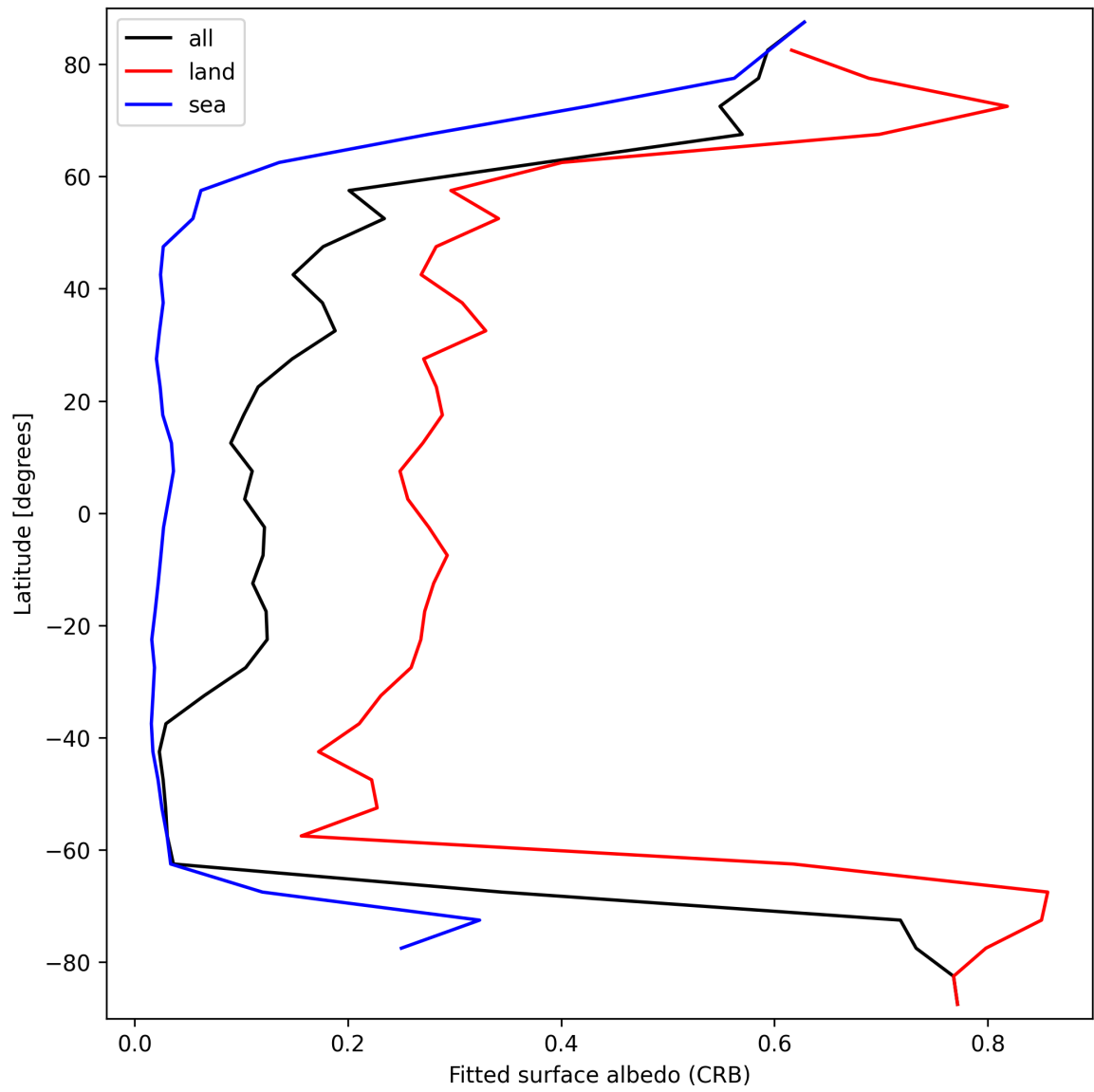


Figure 28: Zonal average of “Fitted surface albedo (CRB)” for 2025-03-22 to 2025-03-22.

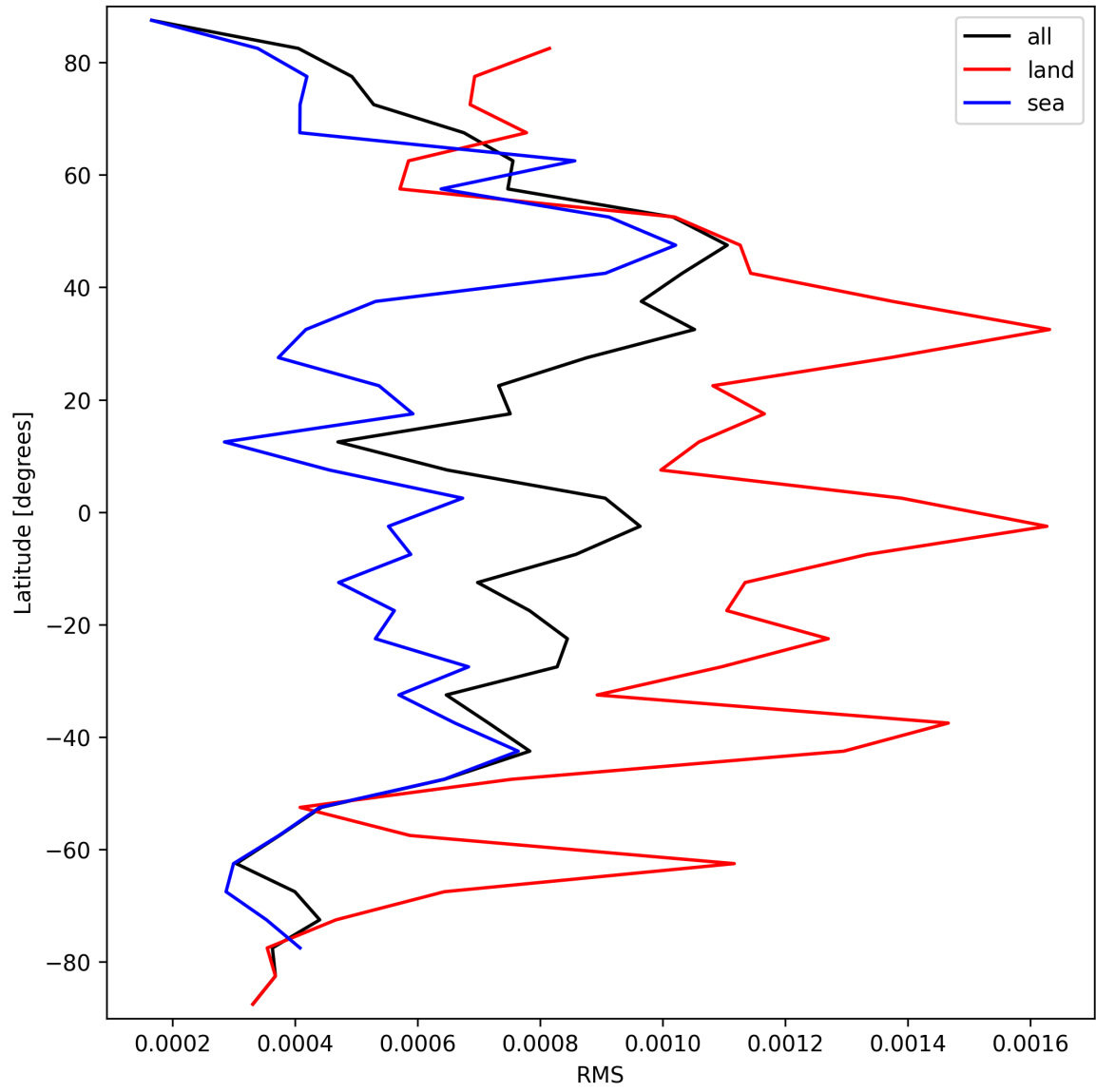


Figure 29: Zonal average of “RMS” for 2025-03-22 to 2025-03-22.

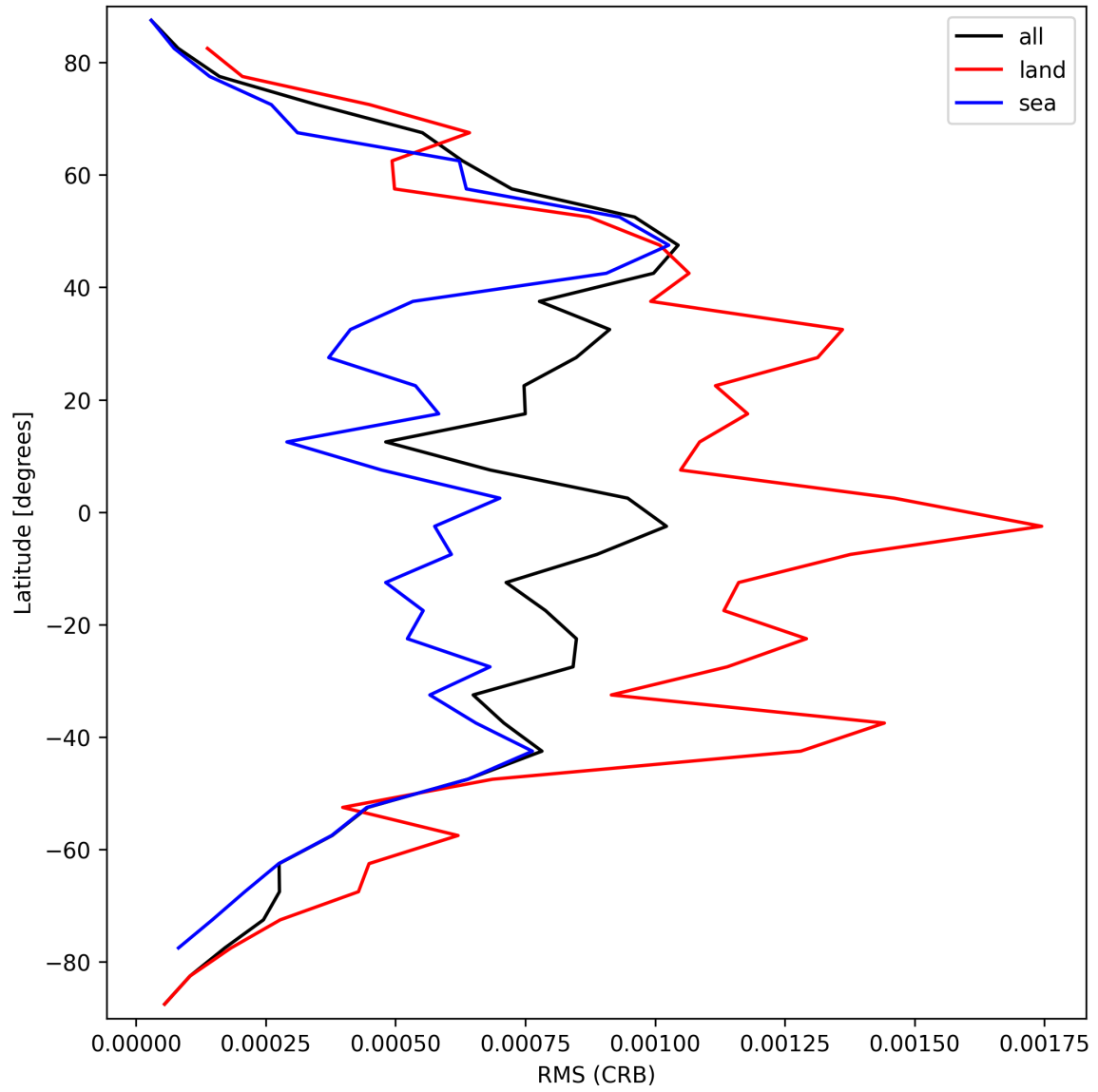


Figure 30: Zonal average of “RMS (CRB)” for 2025-03-22 to 2025-03-22.

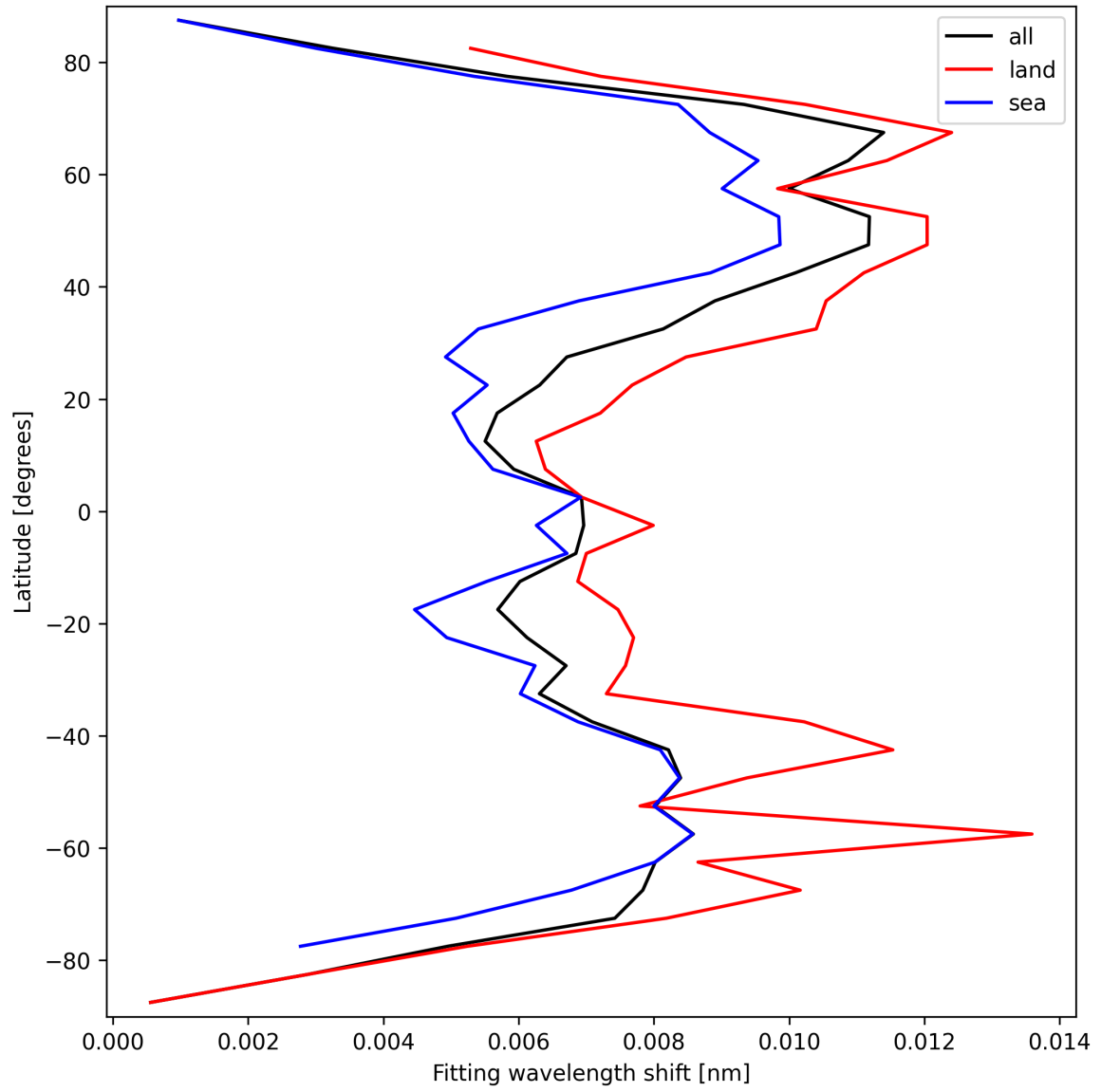


Figure 31: Zonal average of “Fitting wavelength shift” for 2025-03-22 to 2025-03-22.

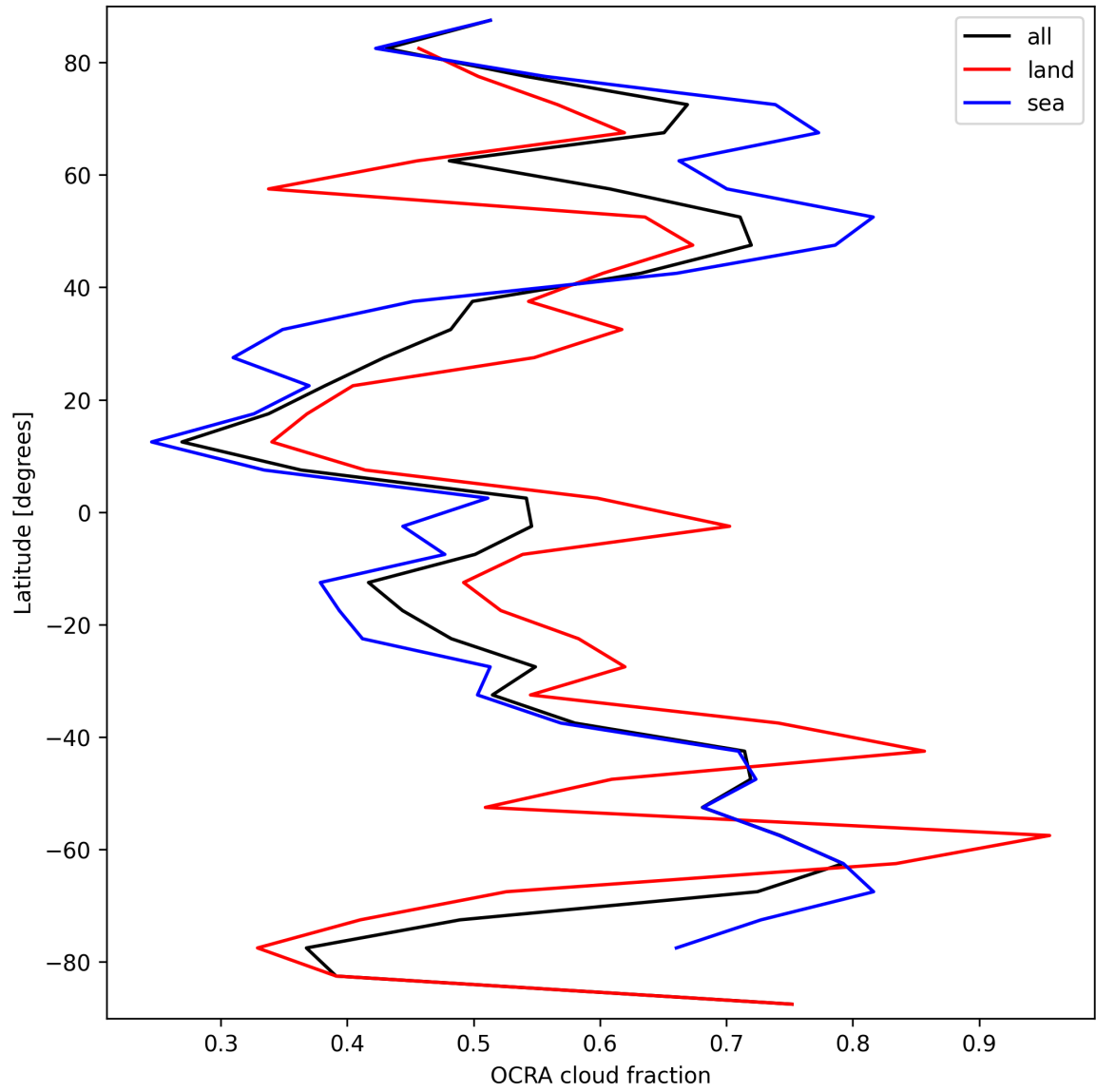


Figure 32: Zonal average of “OCRA cloud fraction” for 2025-03-22 to 2025-03-22.

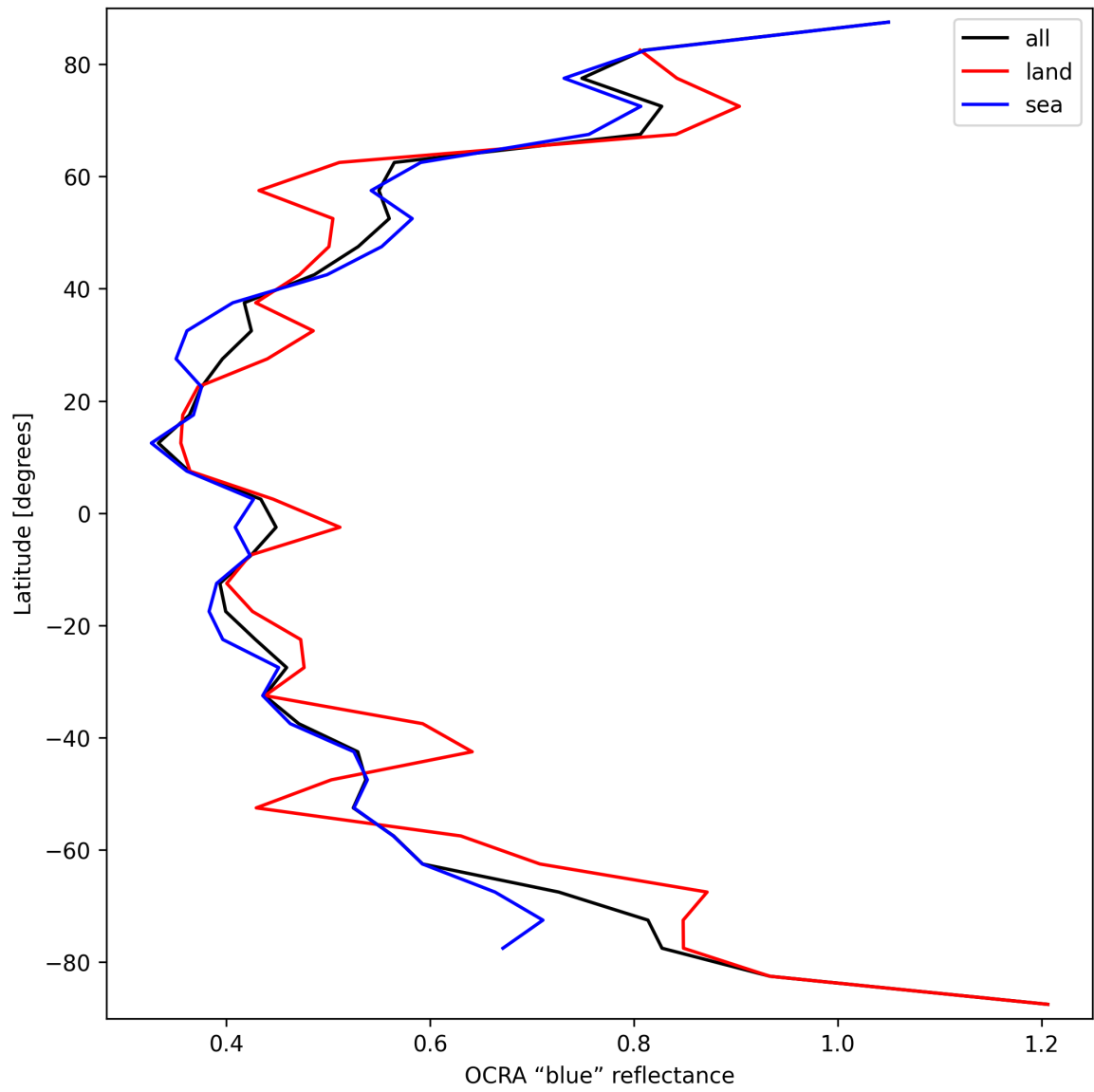


Figure 33: Zonal average of “OCRA “blue” reflectance” for 2025-03-22 to 2025-03-22.

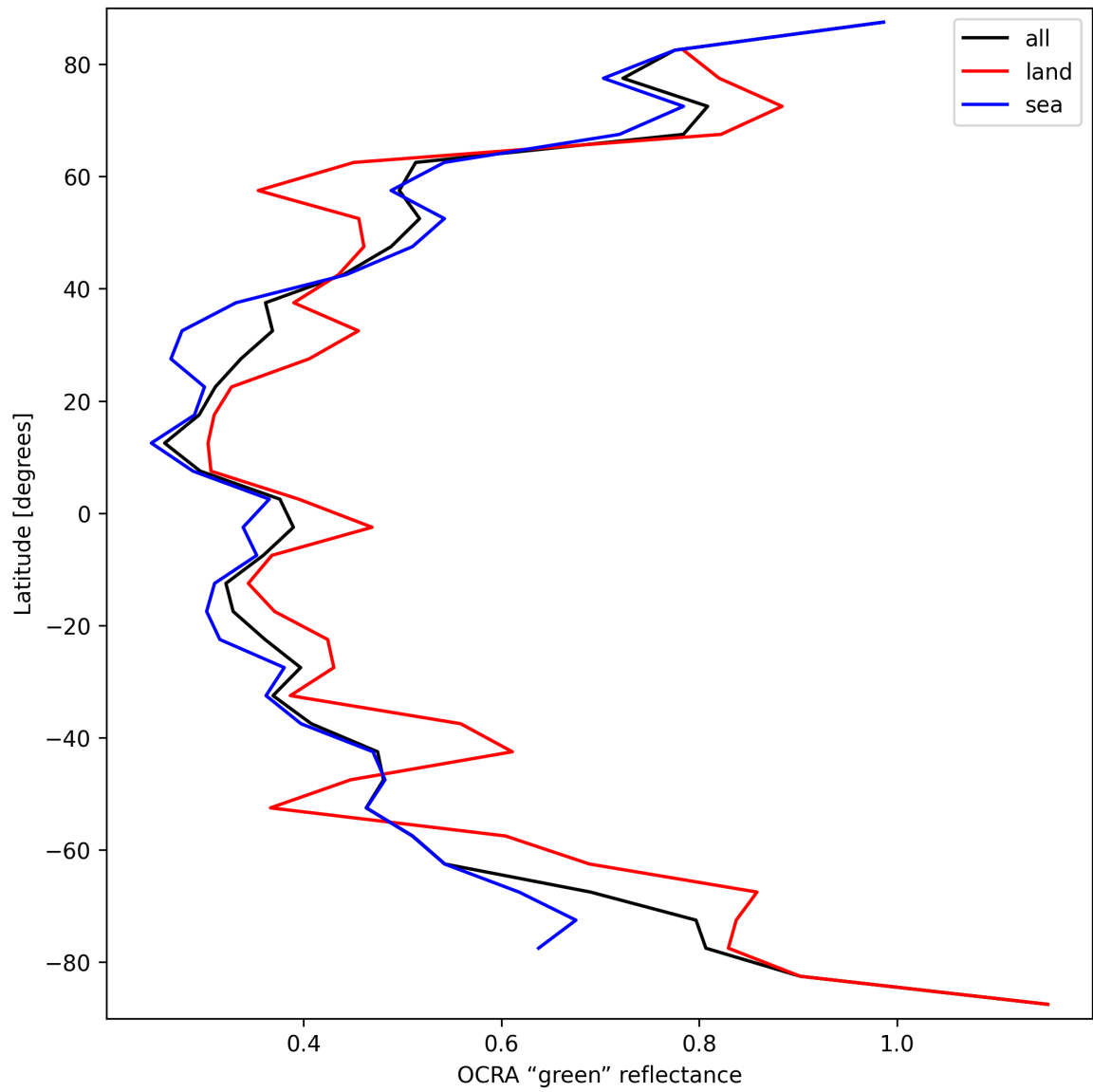


Figure 34: Zonal average of “OCRA “green” reflectance” for 2025-03-22 to 2025-03-22.

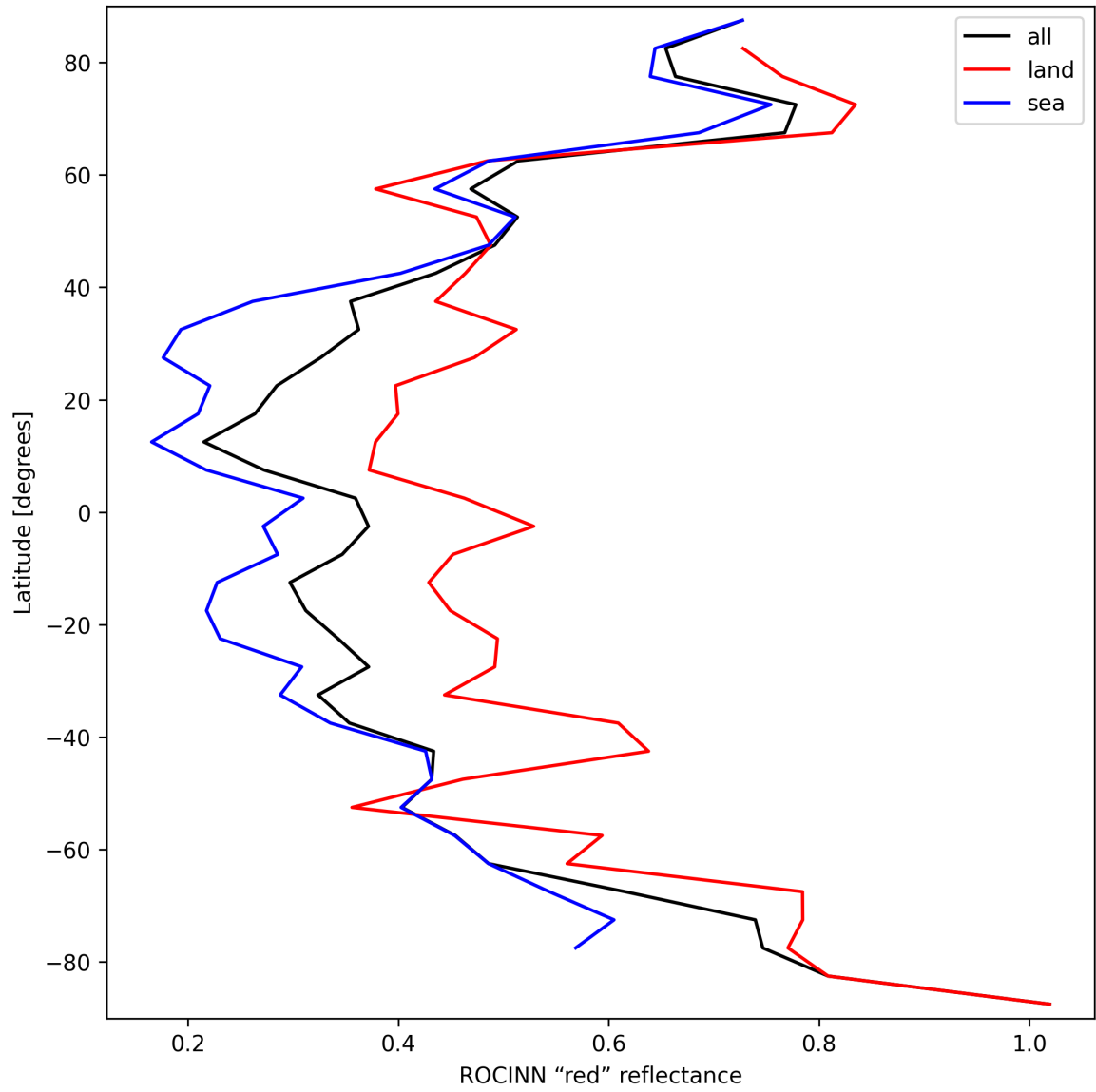


Figure 35: Zonal average of “ROCINN “red” reflectance” for 2025-03-22 to 2025-03-22.

8 Histograms

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

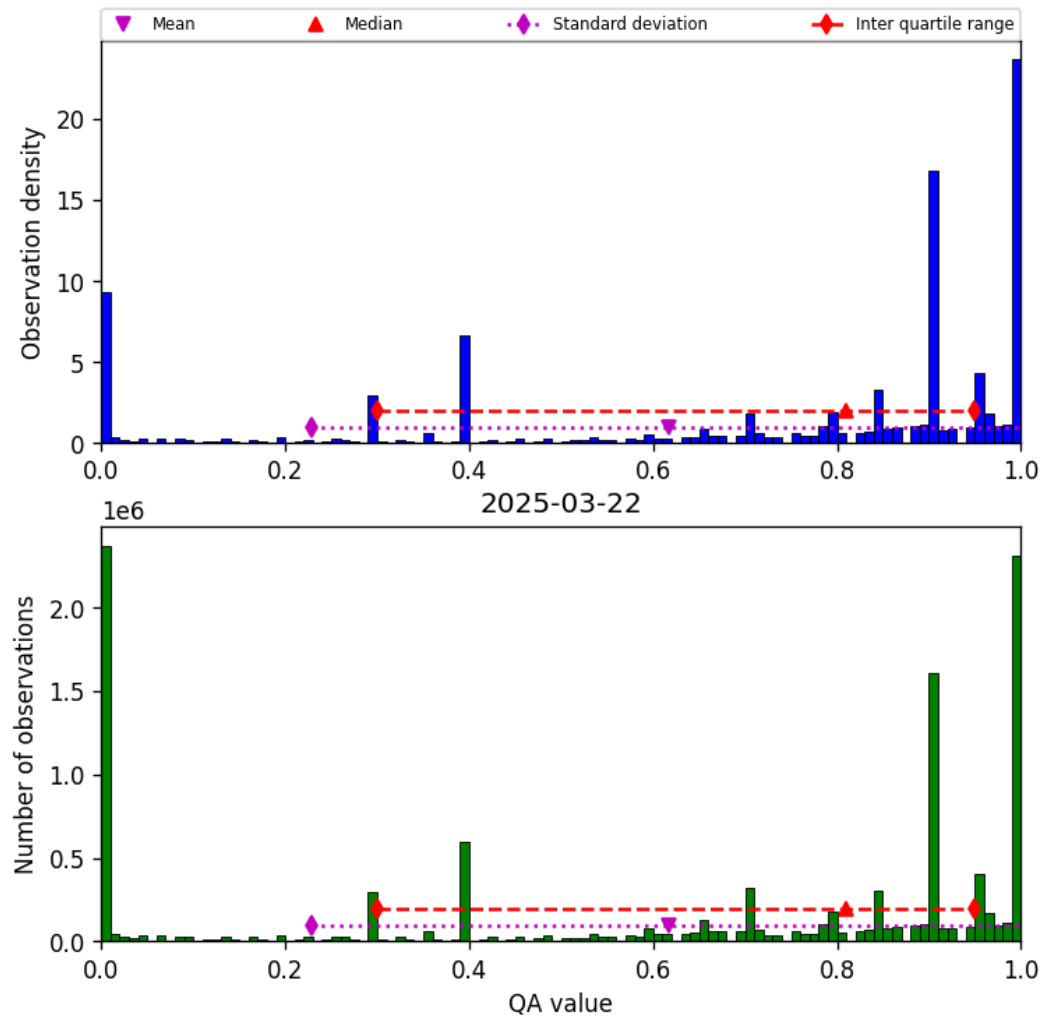


Figure 36: Histogram of “QA value” for 2025-03-22 to 2025-03-22

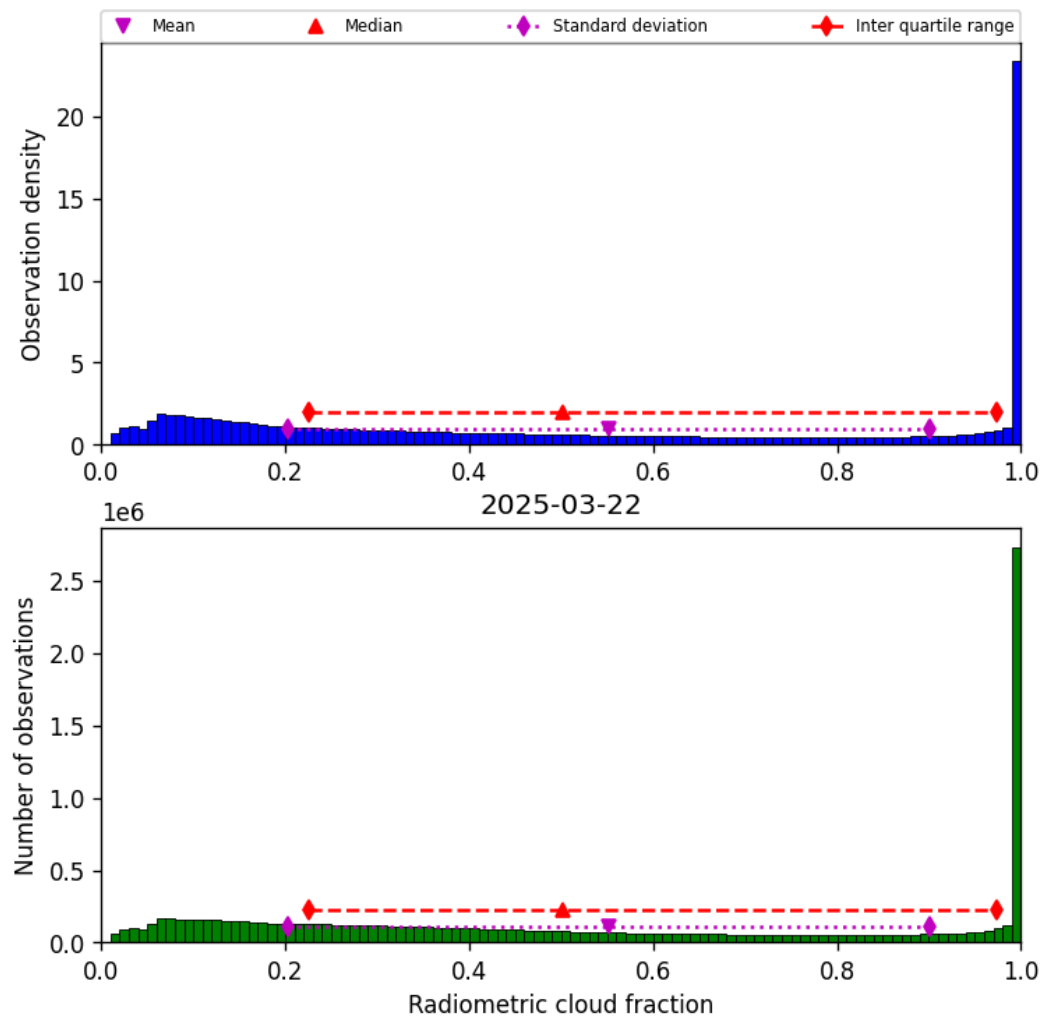


Figure 37: Histogram of “Radiometric cloud fraction” for 2025-03-22 to 2025-03-22

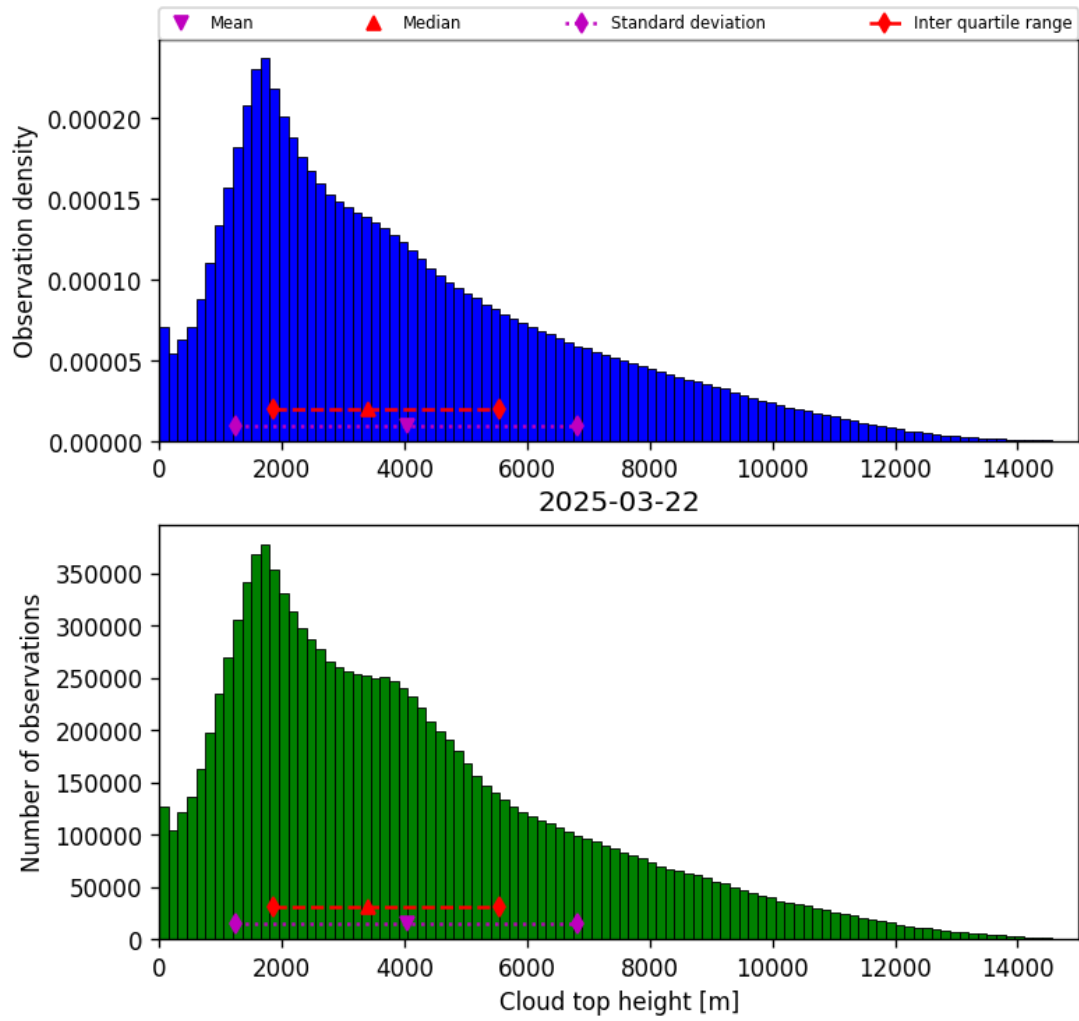


Figure 38: Histogram of “Cloud top height” for 2025-03-22 to 2025-03-22

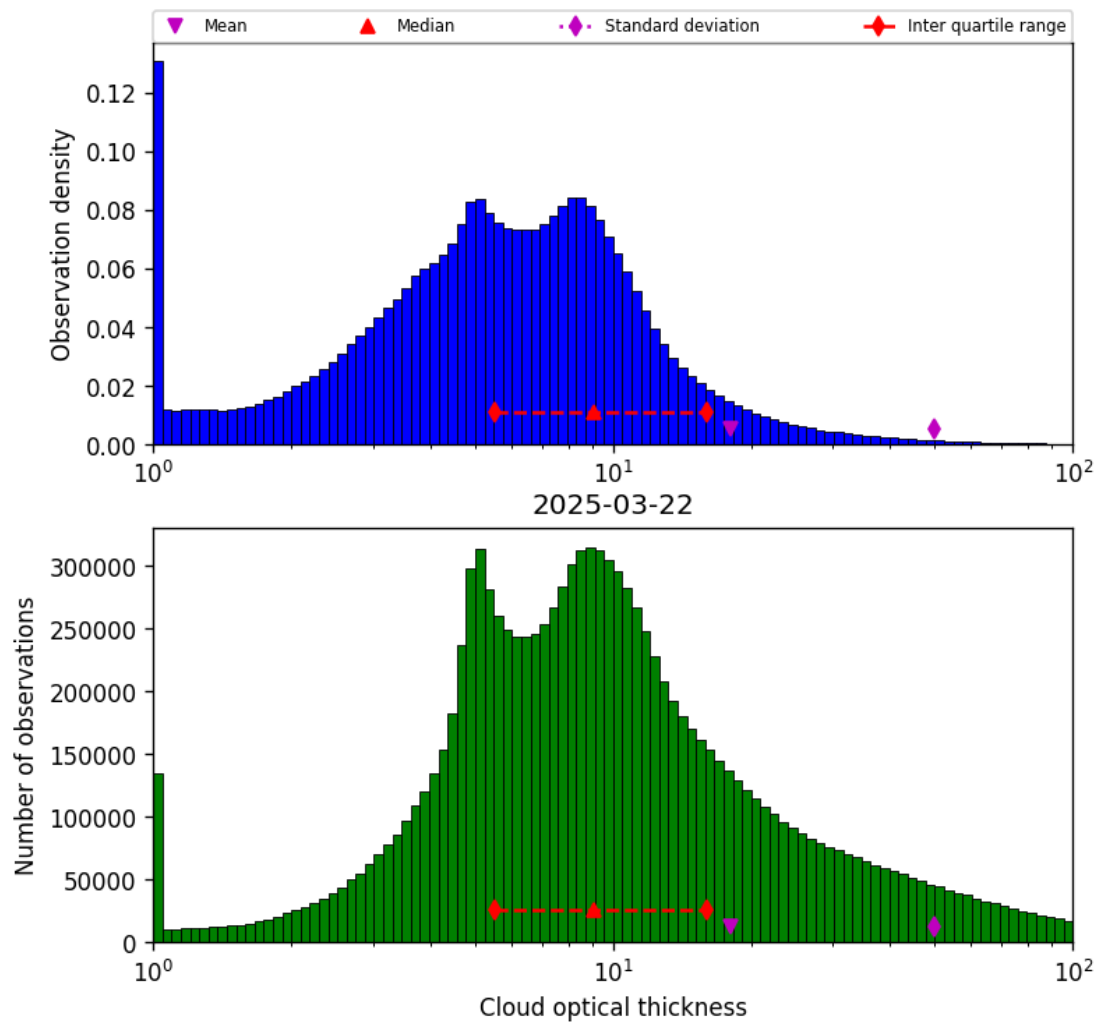


Figure 39: Histogram of “Cloud optical thickness” for 2025-03-22 to 2025-03-22

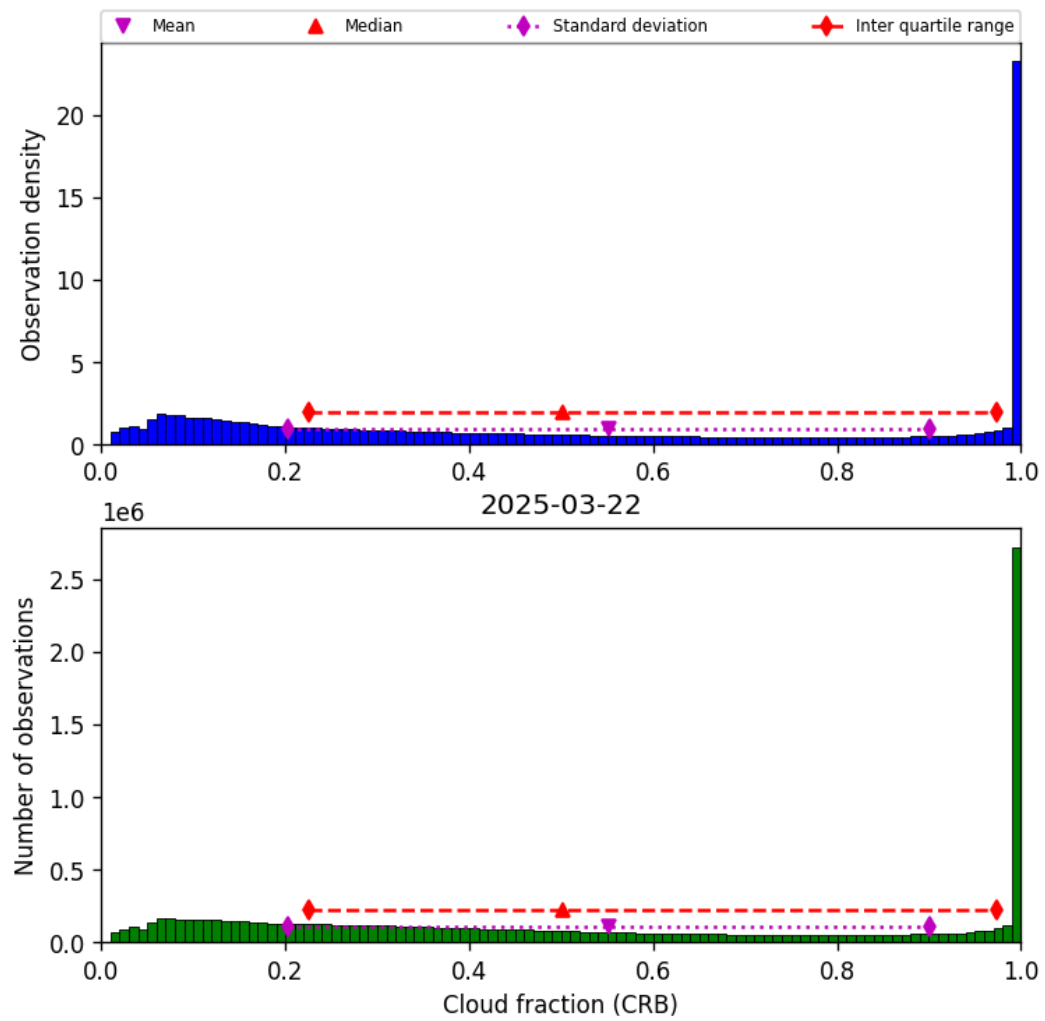


Figure 40: Histogram of “Cloud fraction (CRB)” for 2025-03-22 to 2025-03-22

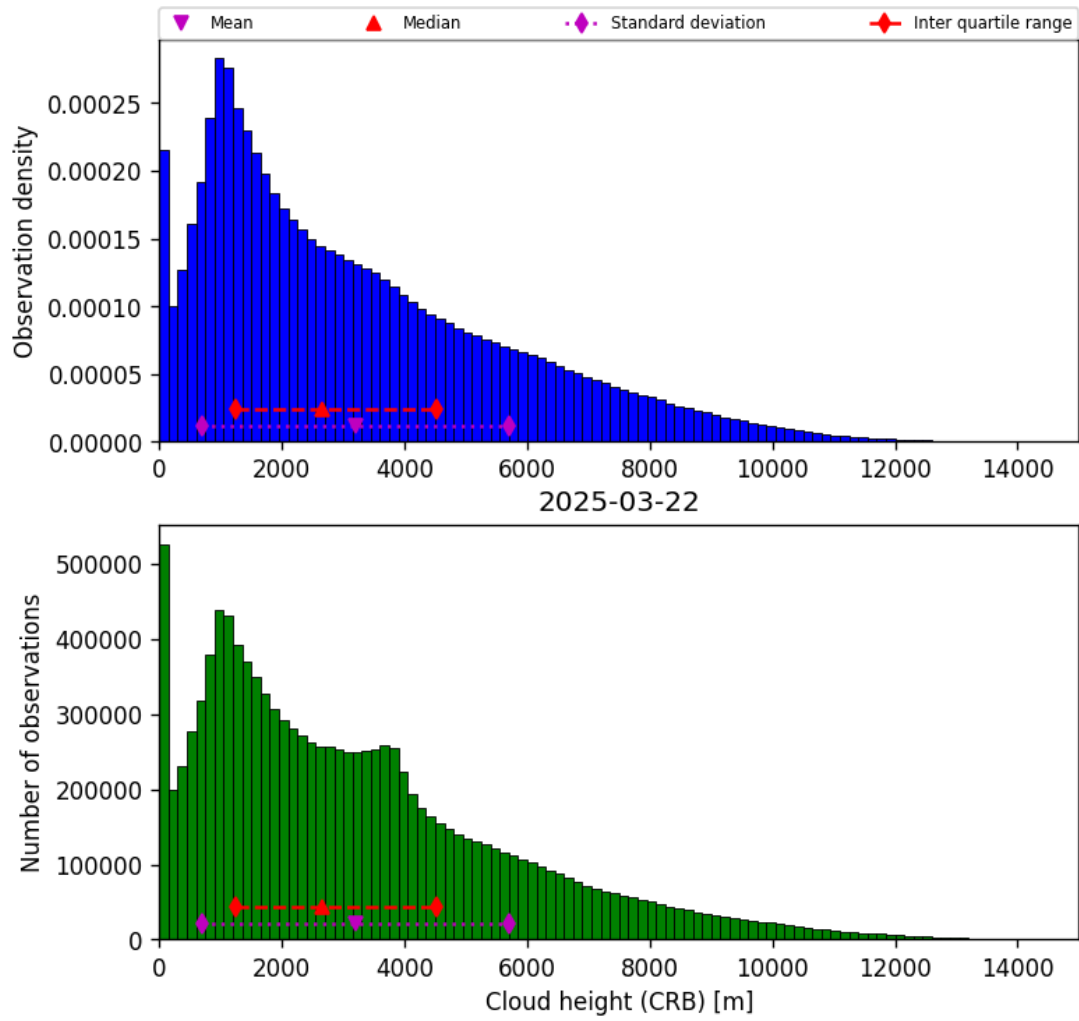


Figure 41: Histogram of “Cloud height (CRB)” for 2025-03-22 to 2025-03-22

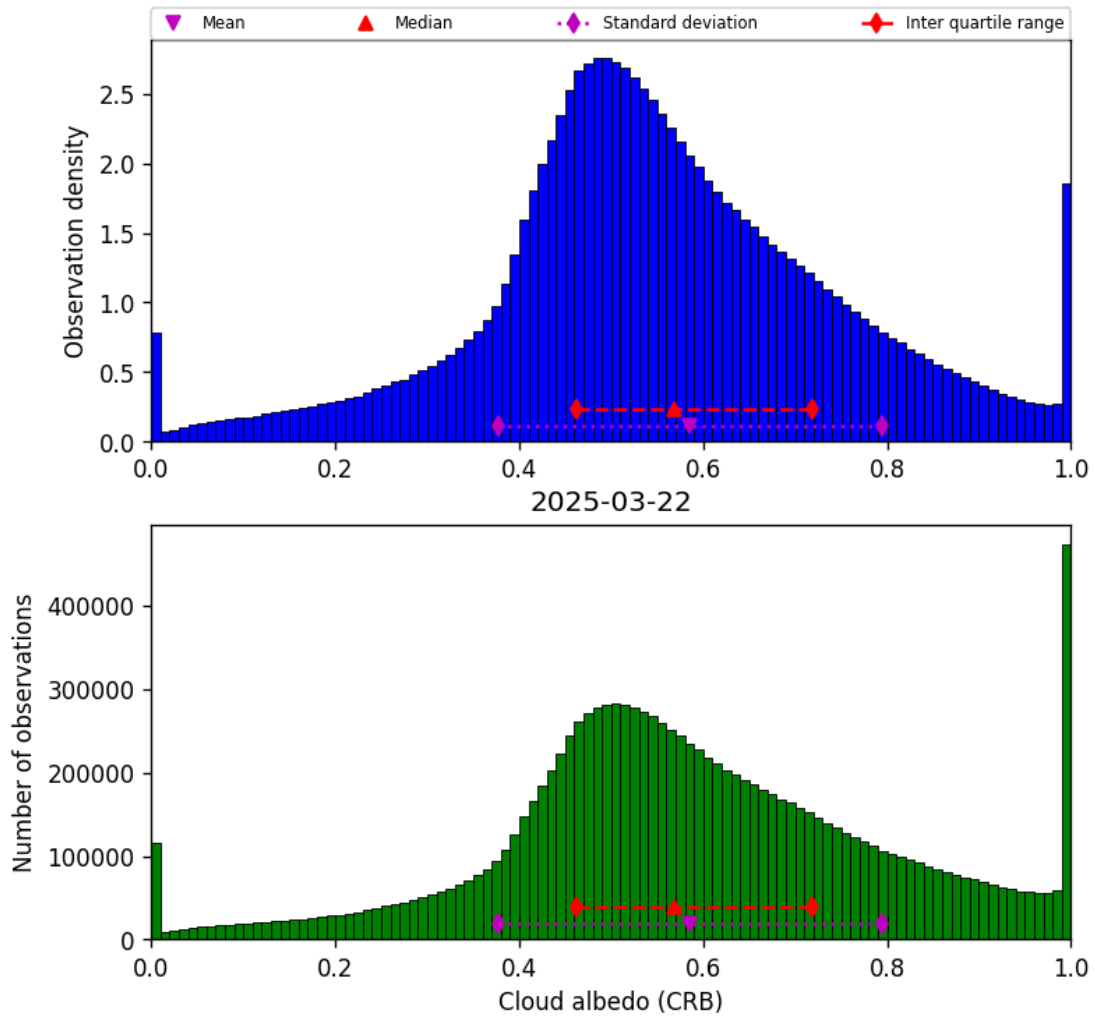


Figure 42: Histogram of “Cloud albedo (CRB)” for 2025-03-22 to 2025-03-22

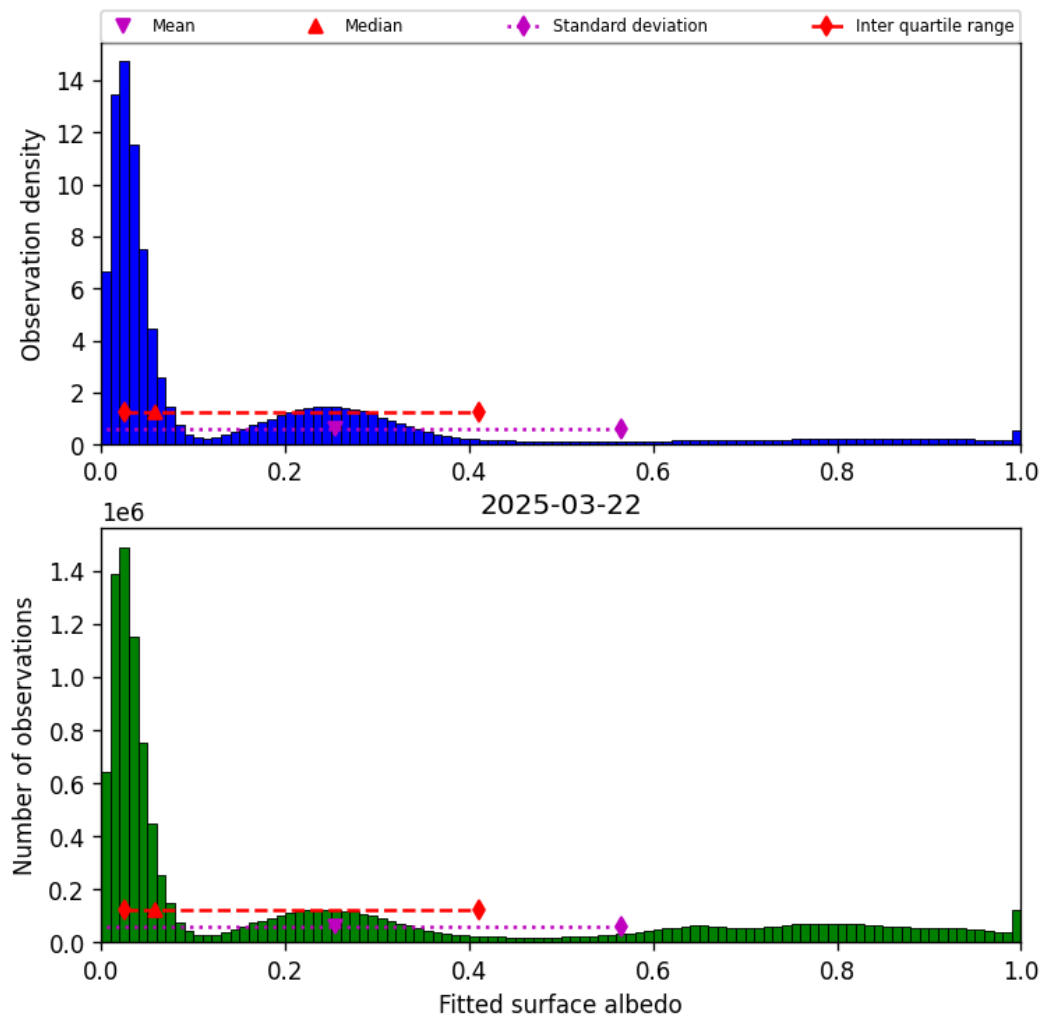


Figure 43: Histogram of “Fitted surface albedo” for 2025-03-22 to 2025-03-22

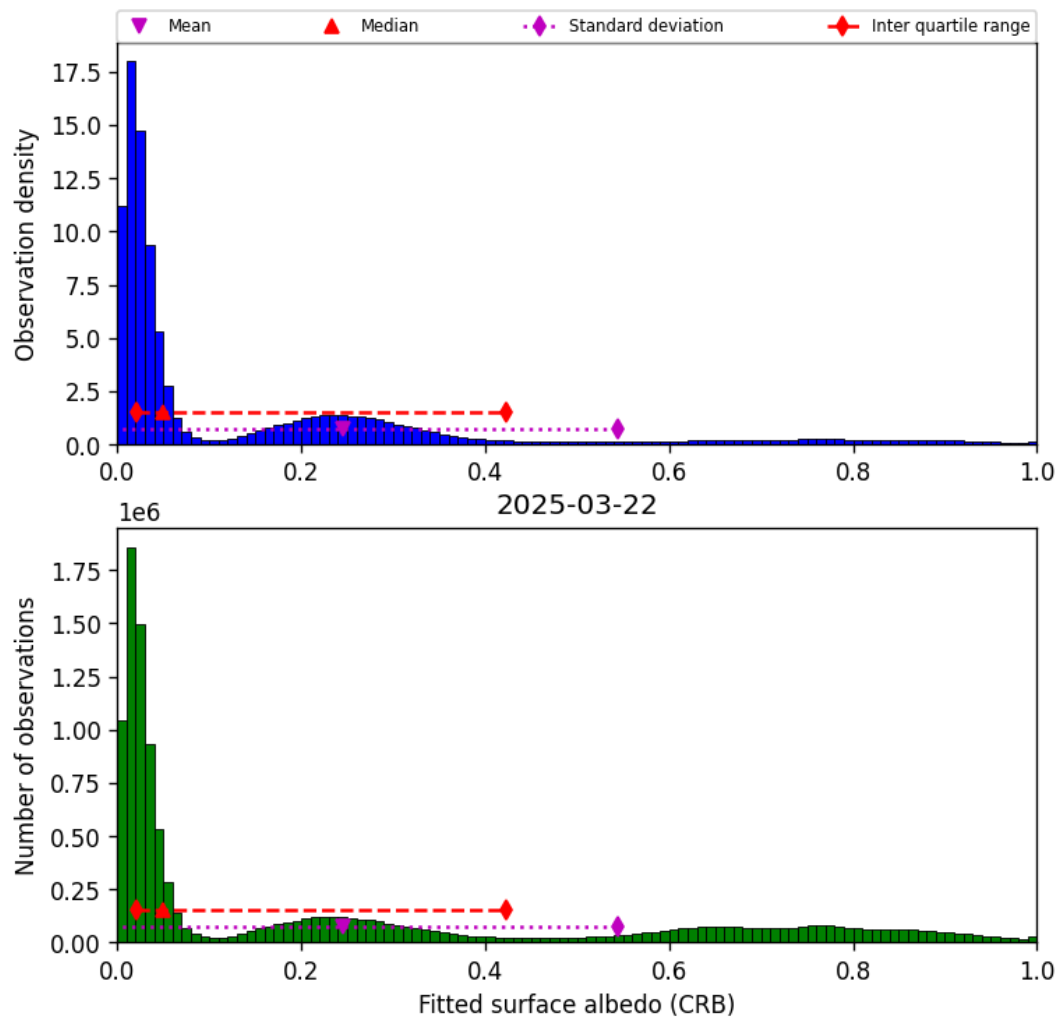


Figure 44: Histogram of “Fitted surface albedo (CRB)” for 2025-03-22 to 2025-03-22

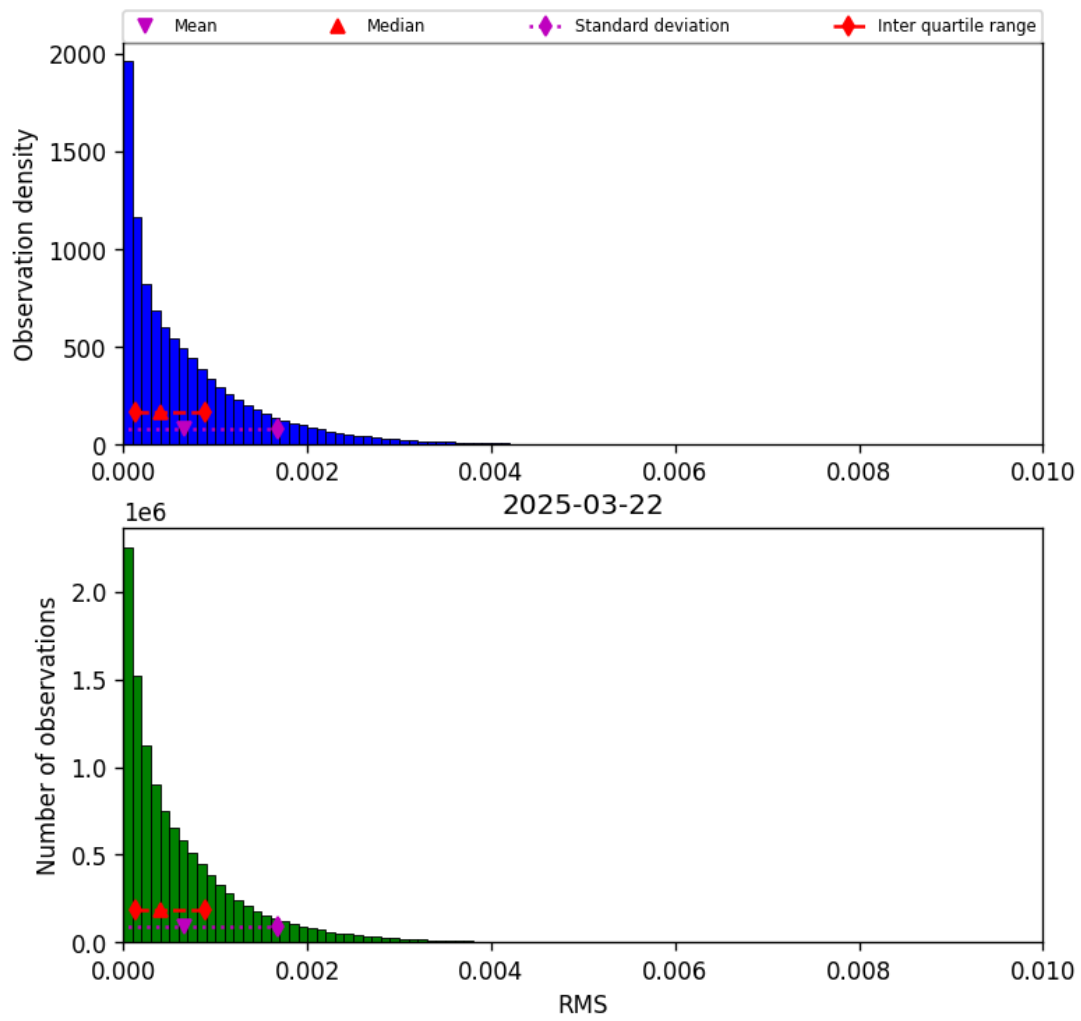


Figure 45: Histogram of “RMS” for 2025-03-22 to 2025-03-22

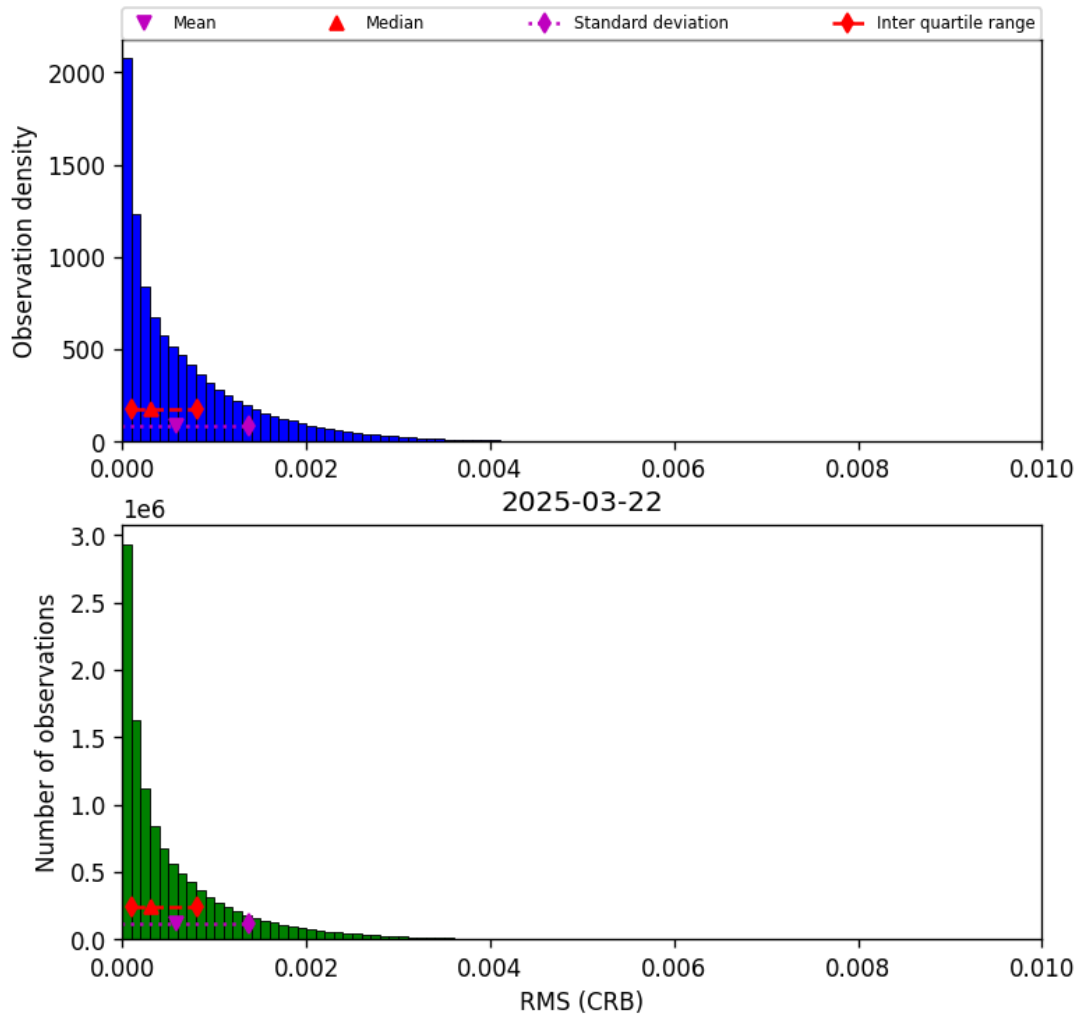


Figure 46: Histogram of “RMS (CRB)” for 2025-03-22 to 2025-03-22

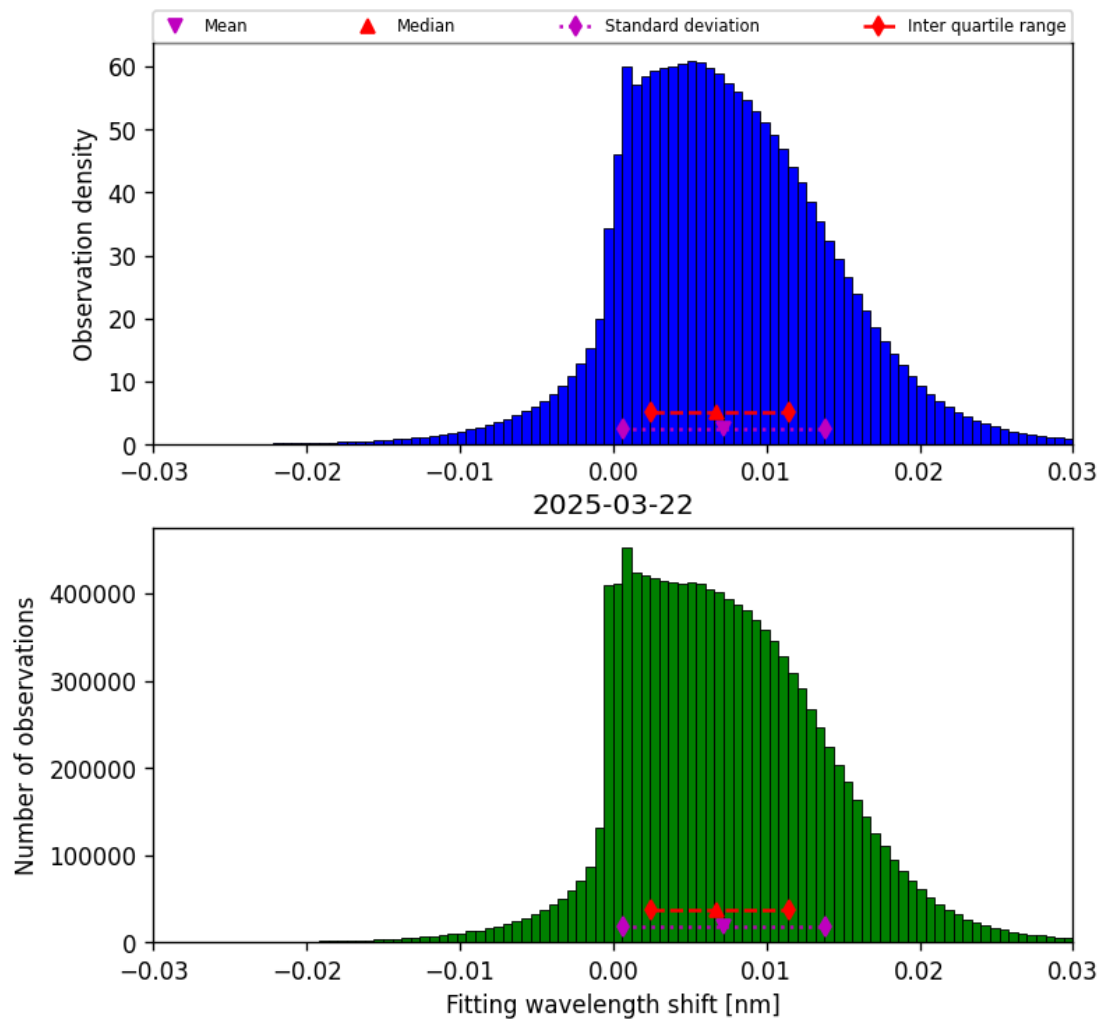


Figure 47: Histogram of “Fitting wavelength shift” for 2025-03-22 to 2025-03-22

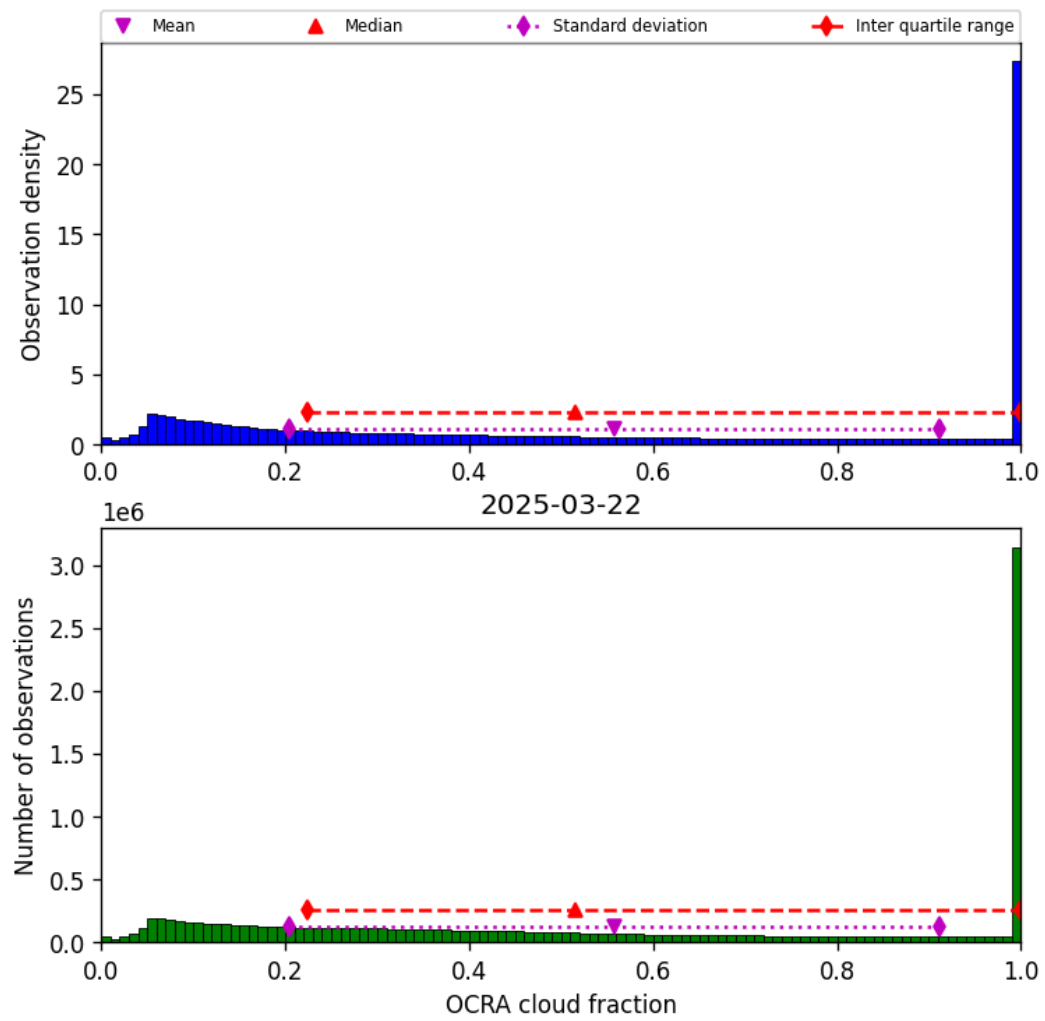


Figure 48: Histogram of “OCRA cloud fraction” for 2025-03-22 to 2025-03-22

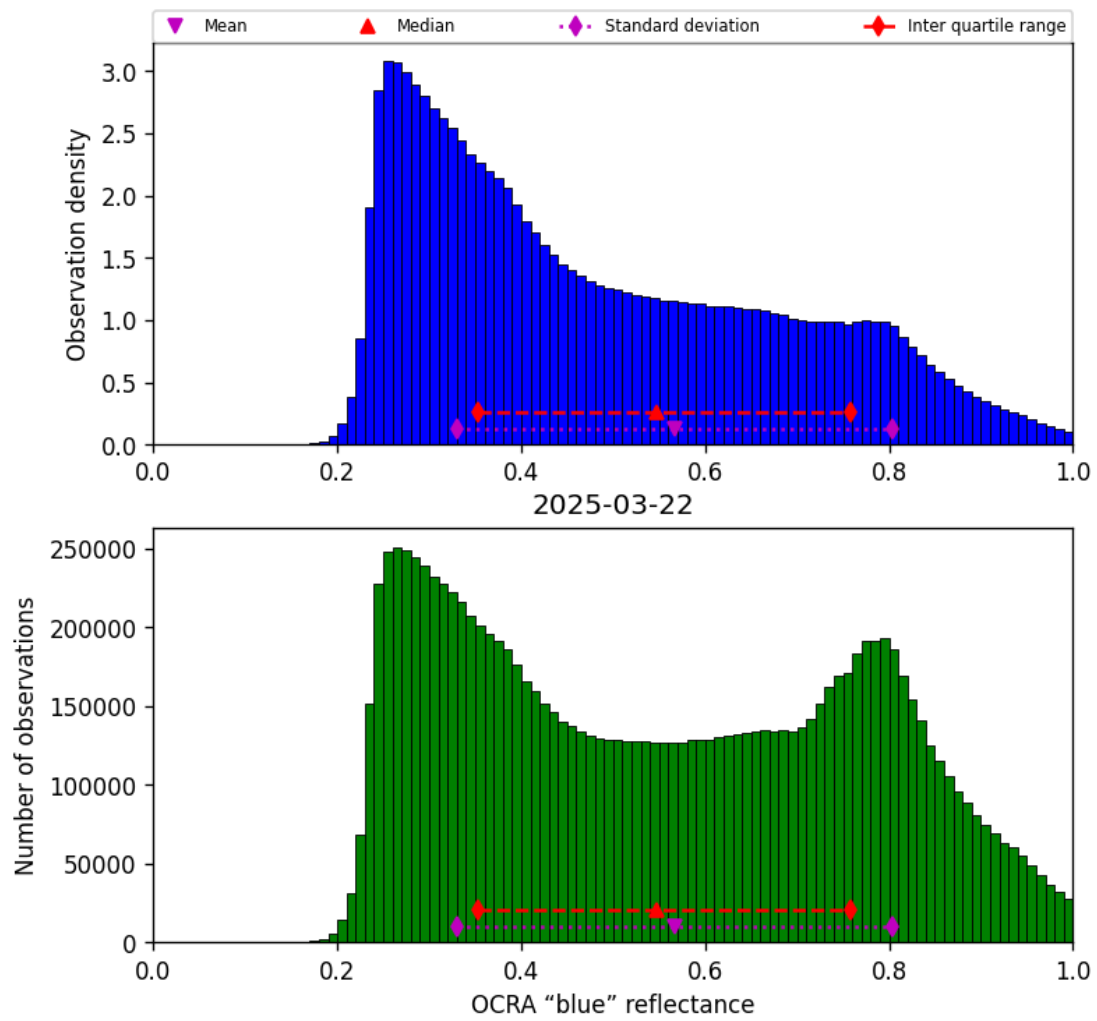


Figure 49: Histogram of “OCRA “blue” reflectance” for 2025-03-22 to 2025-03-22

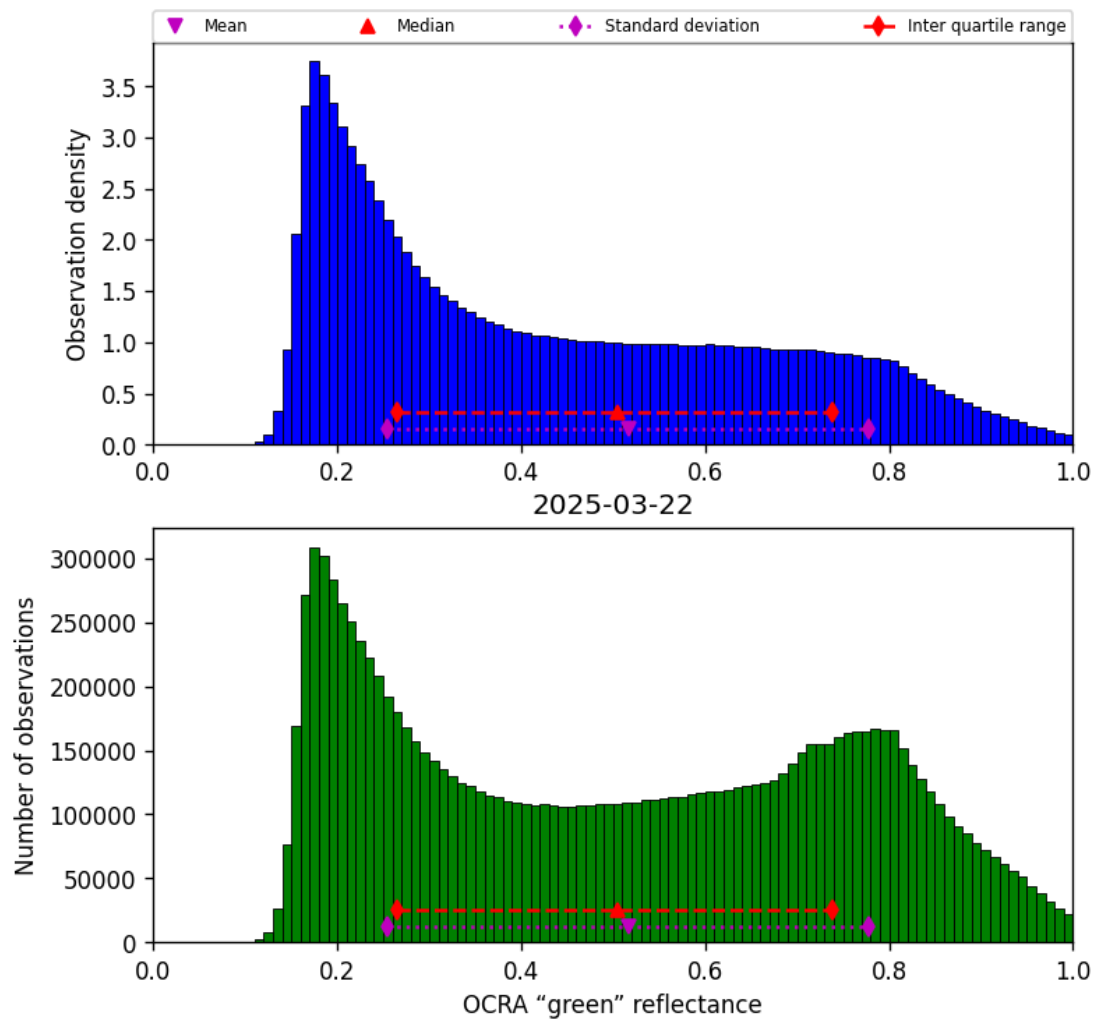


Figure 50: Histogram of “OCRA “green” reflectance” for 2025-03-22 to 2025-03-22

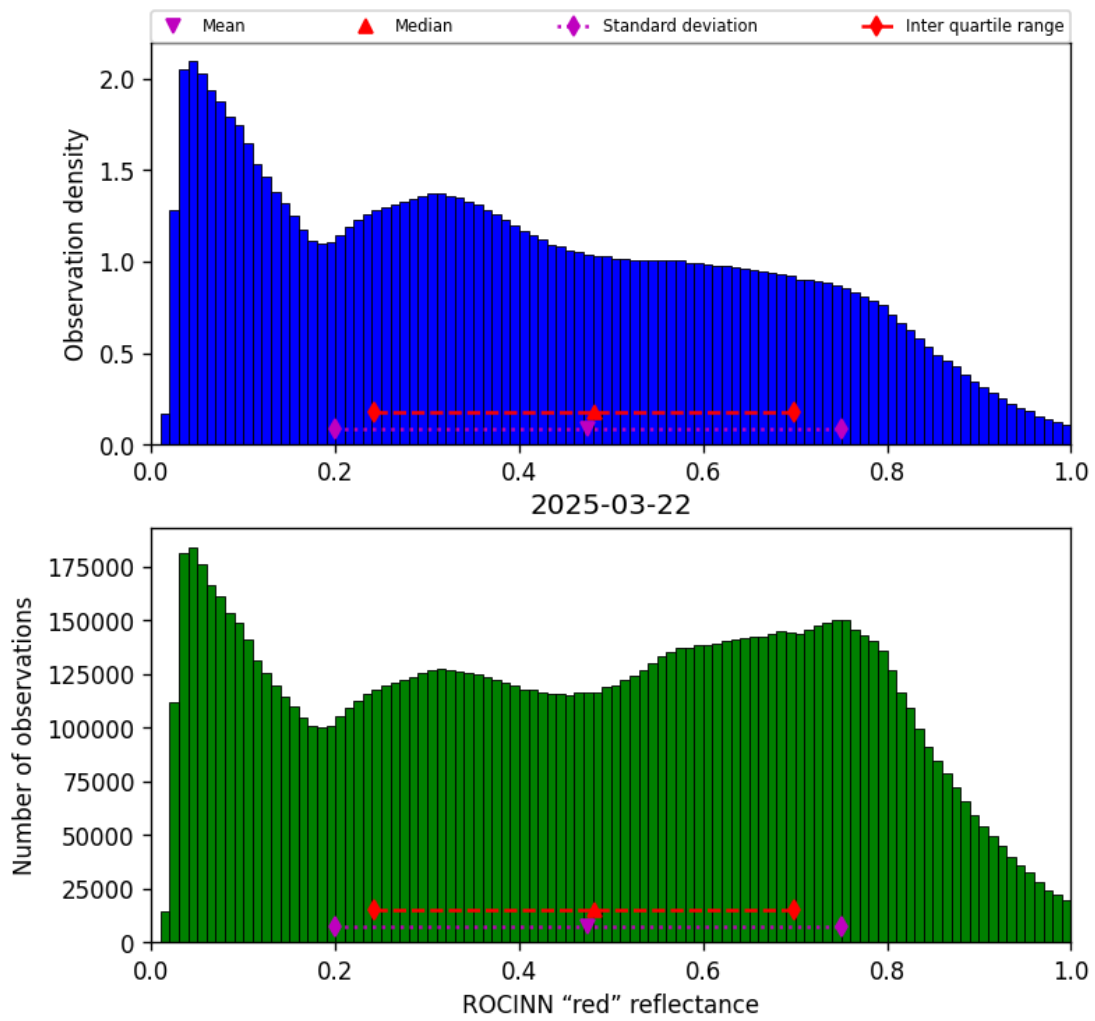


Figure 51: Histogram of “ROCINN “red” reflectance” for 2025-03-22 to 2025-03-22

9 Along track statistics

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

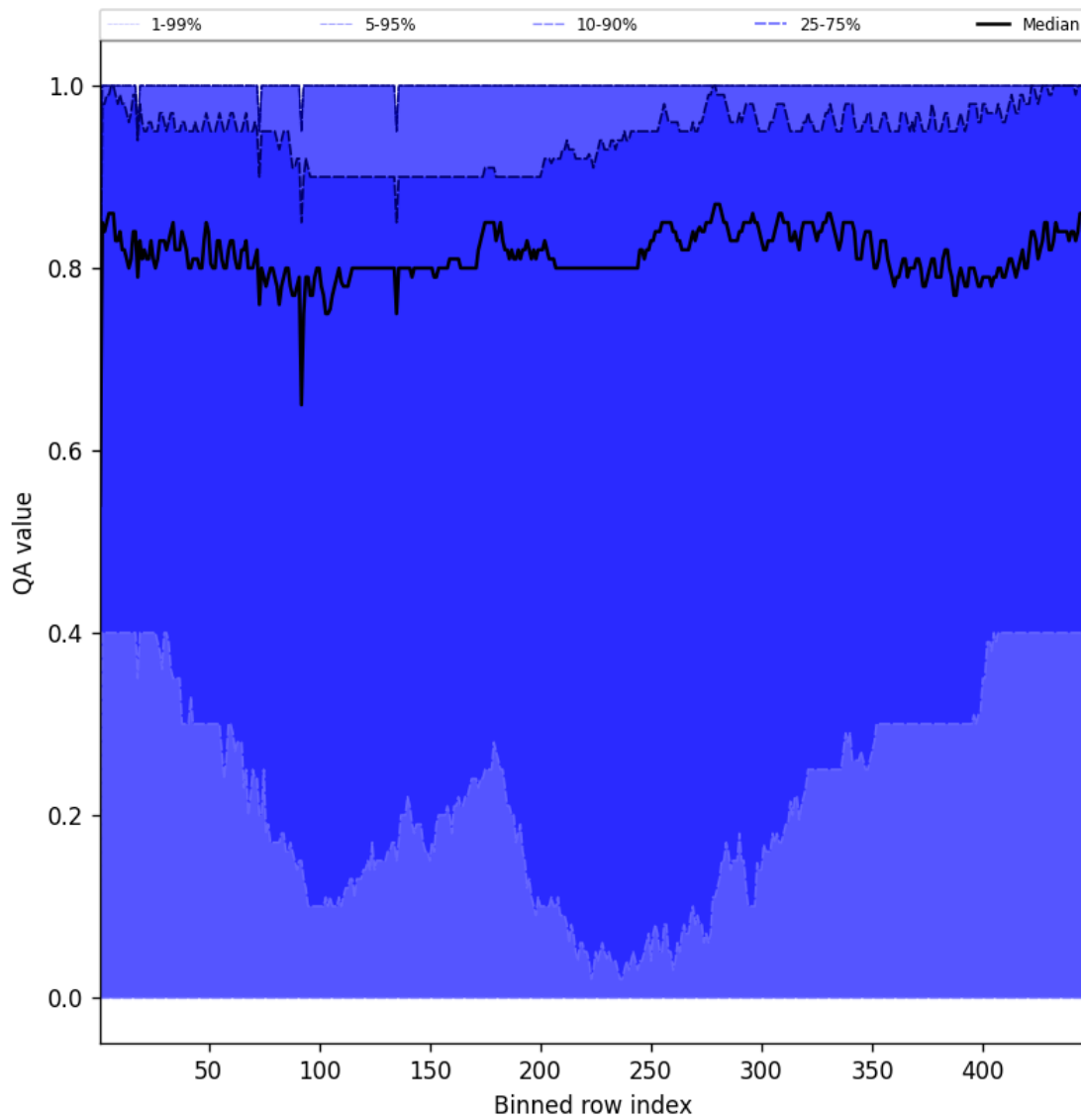


Figure 52: Along track statistics of “QA value” for 2025-03-22 to 2025-03-22

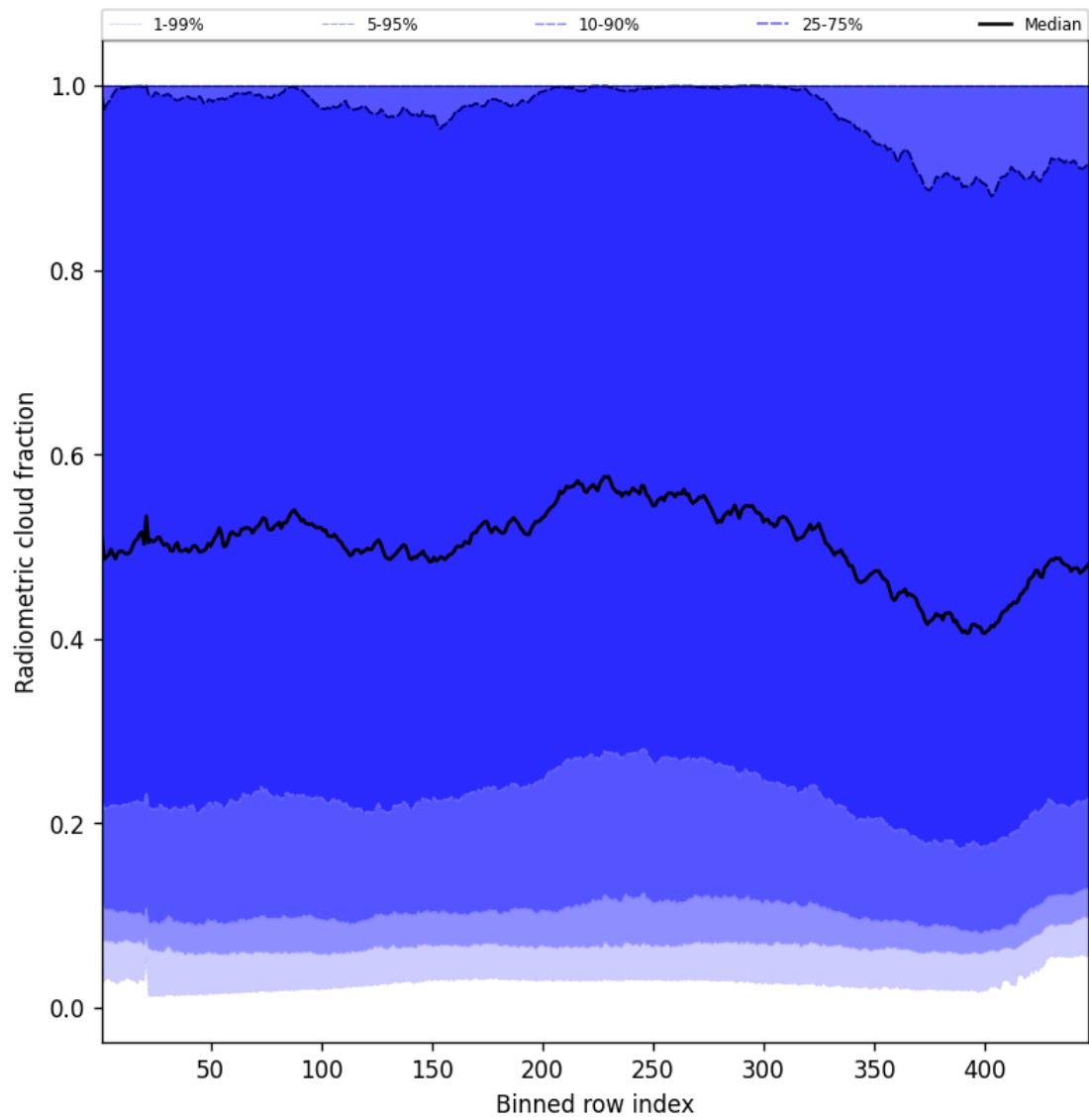


Figure 53: Along track statistics of “Radiometric cloud fraction” for 2025-03-22 to 2025-03-22

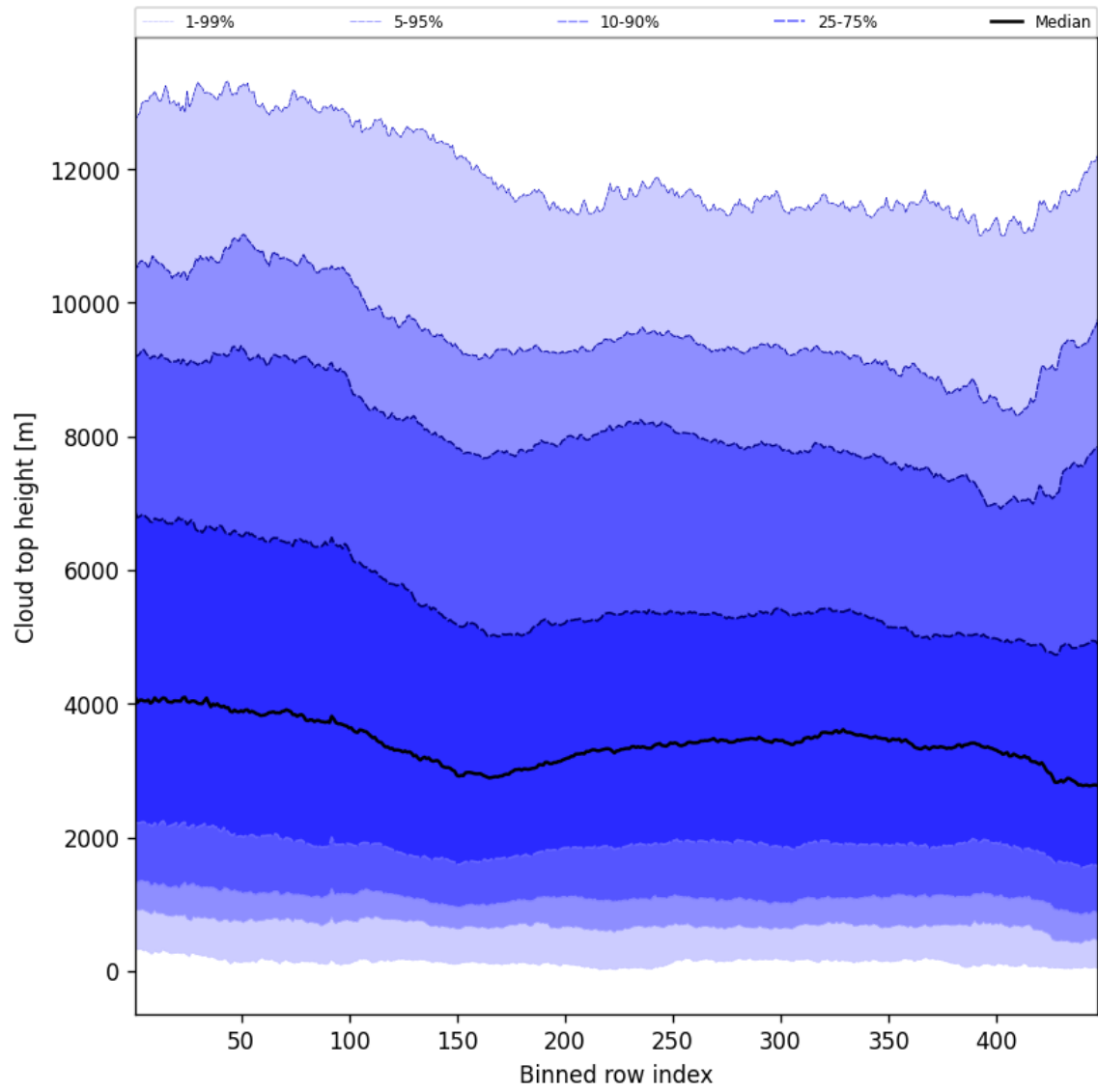


Figure 54: Along track statistics of “Cloud top height” for 2025-03-22 to 2025-03-22

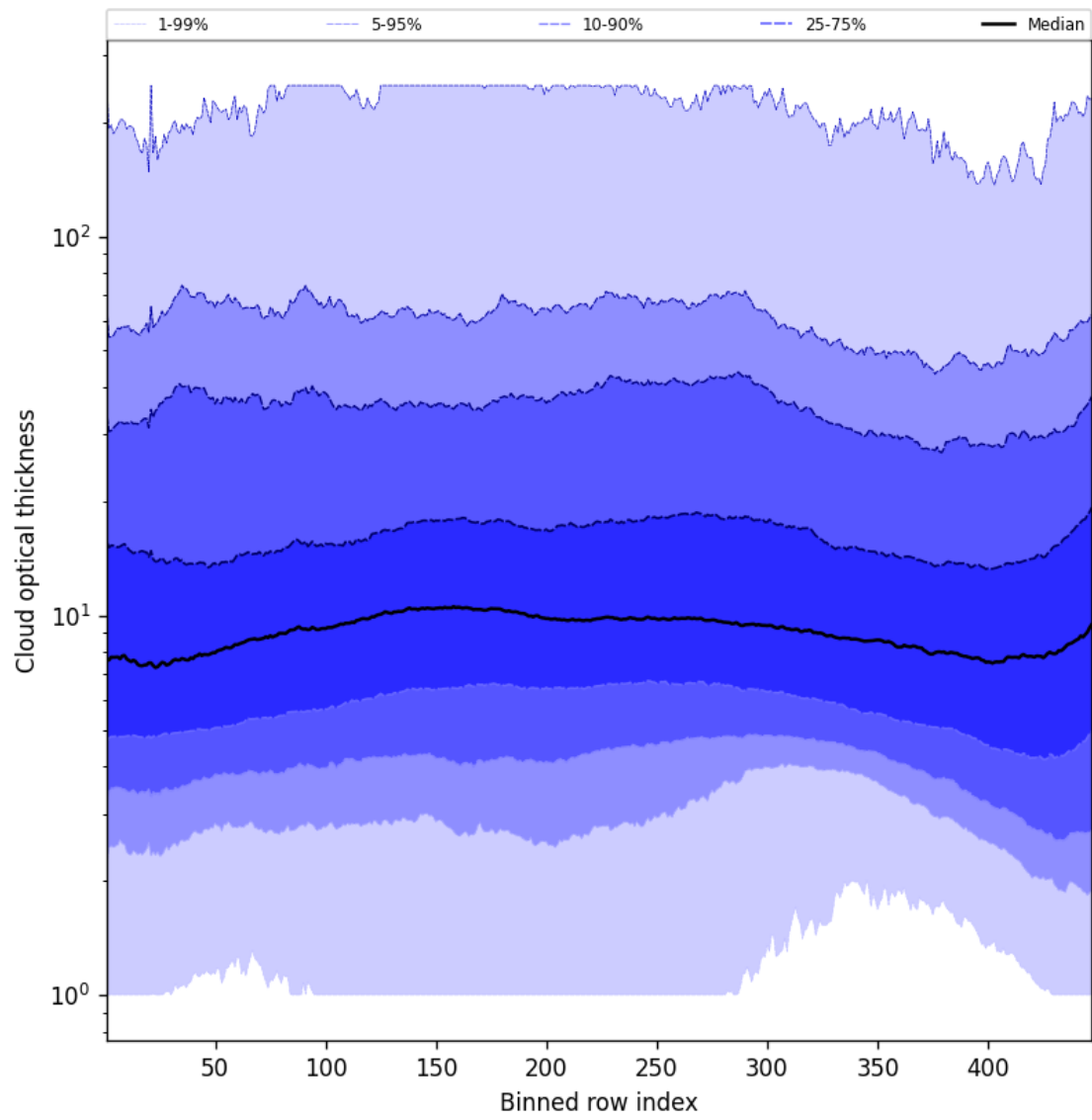


Figure 55: Along track statistics of “Cloud optical thickness” for 2025-03-22 to 2025-03-22

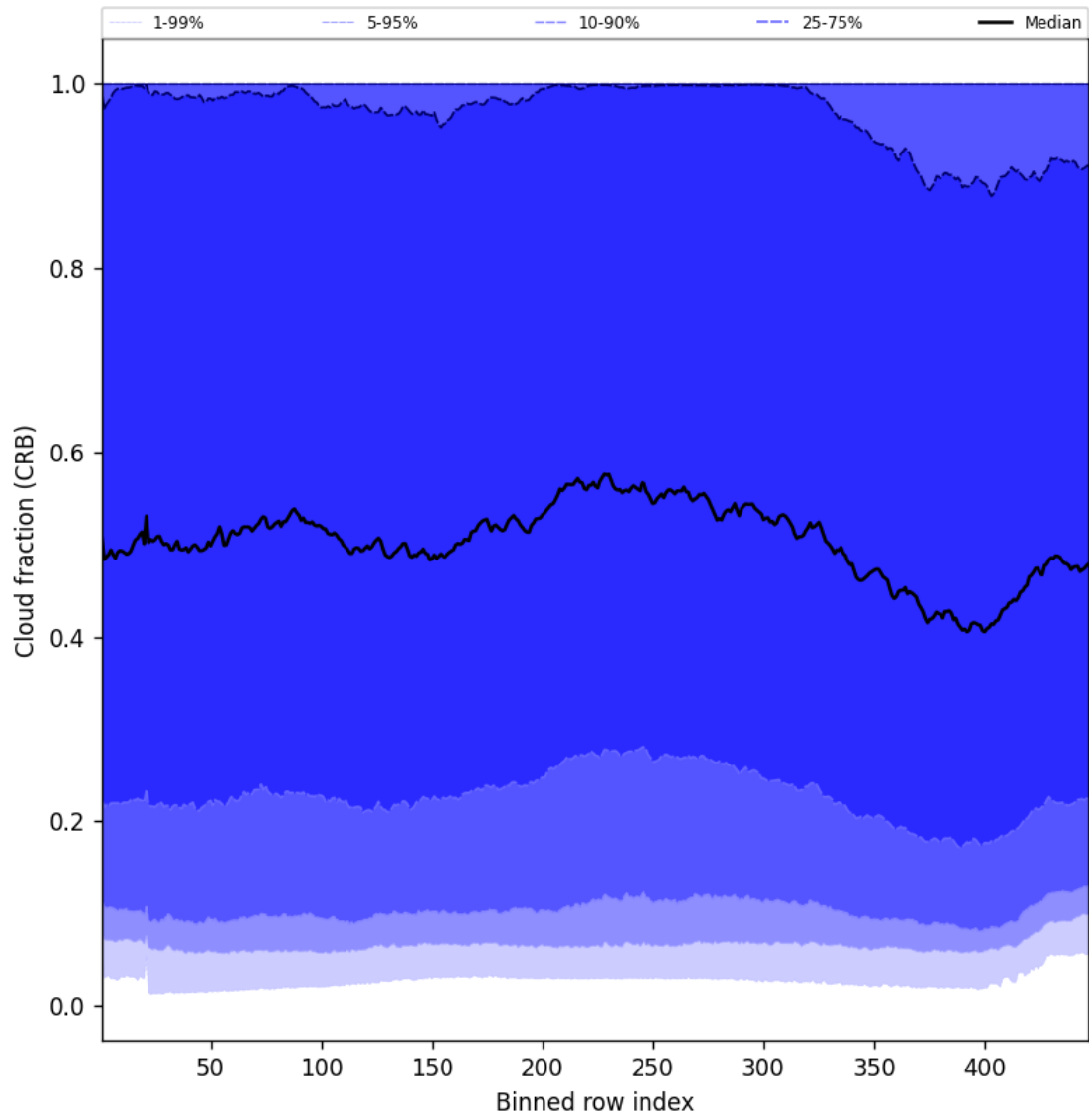


Figure 56: Along track statistics of “Cloud fraction (CRB)” for 2025-03-22 to 2025-03-22

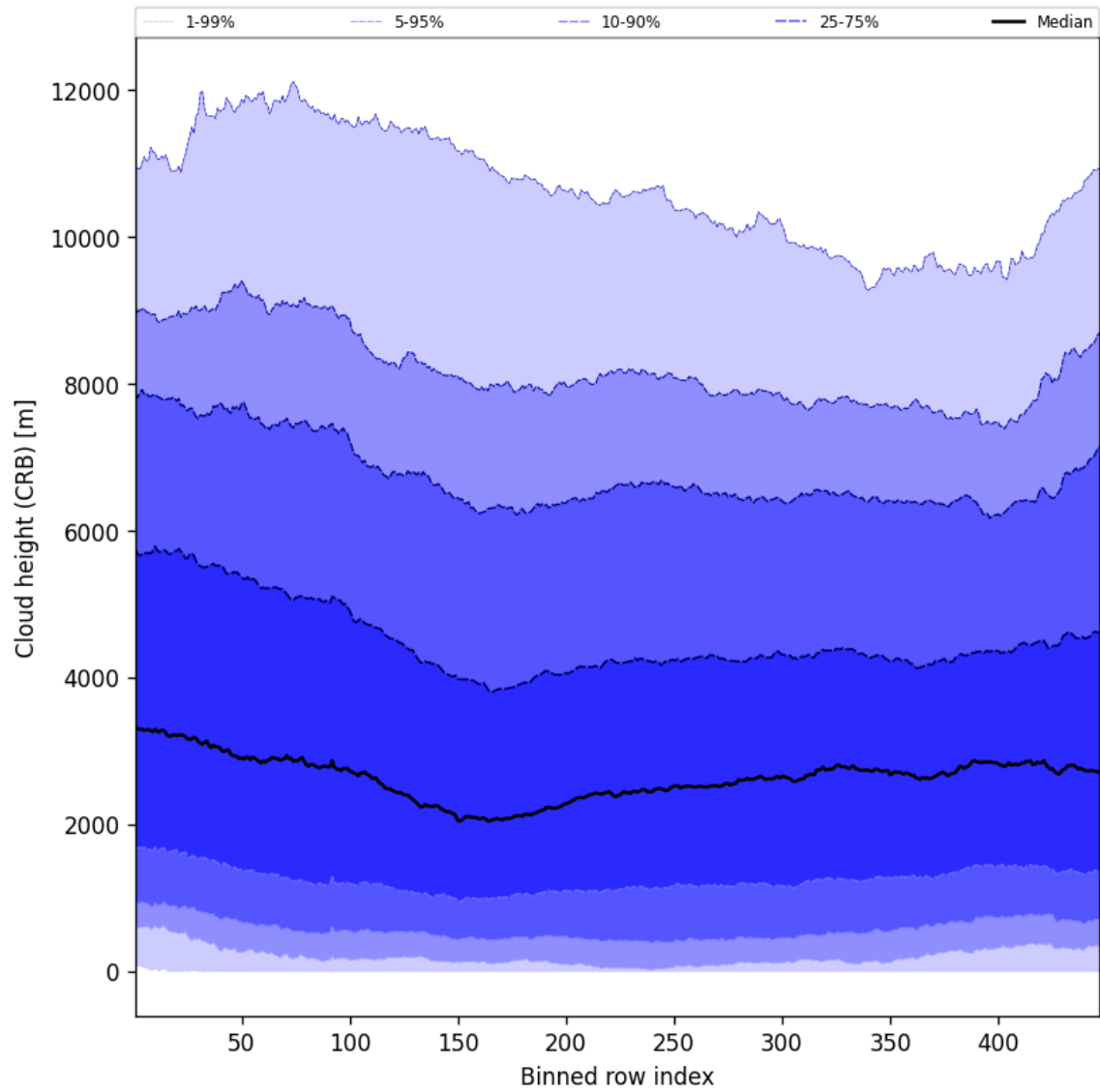


Figure 57: Along track statistics of “Cloud height (CRB)” for 2025-03-22 to 2025-03-22

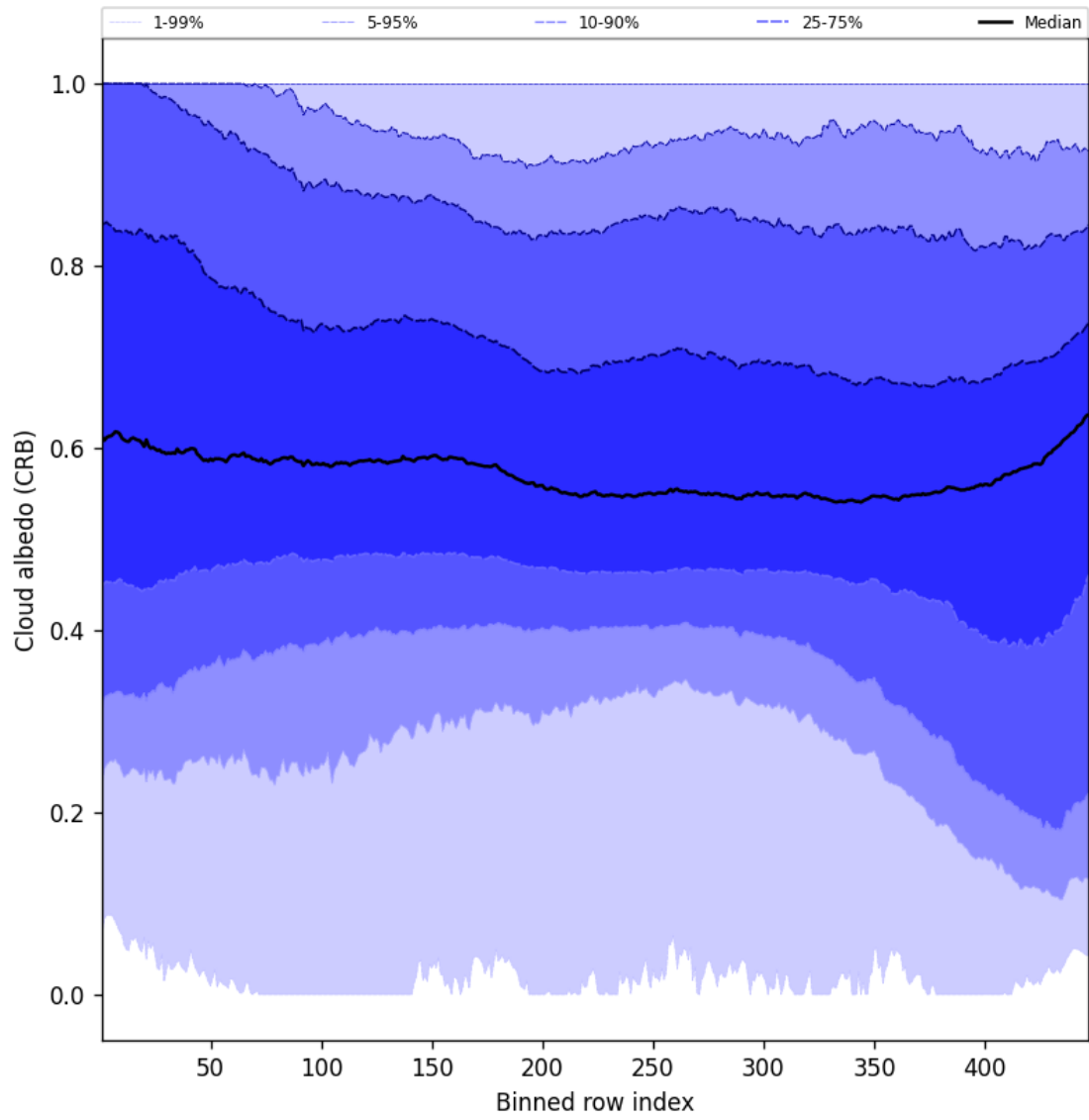


Figure 58: Along track statistics of “Cloud albedo (CRB)” for 2025-03-22 to 2025-03-22

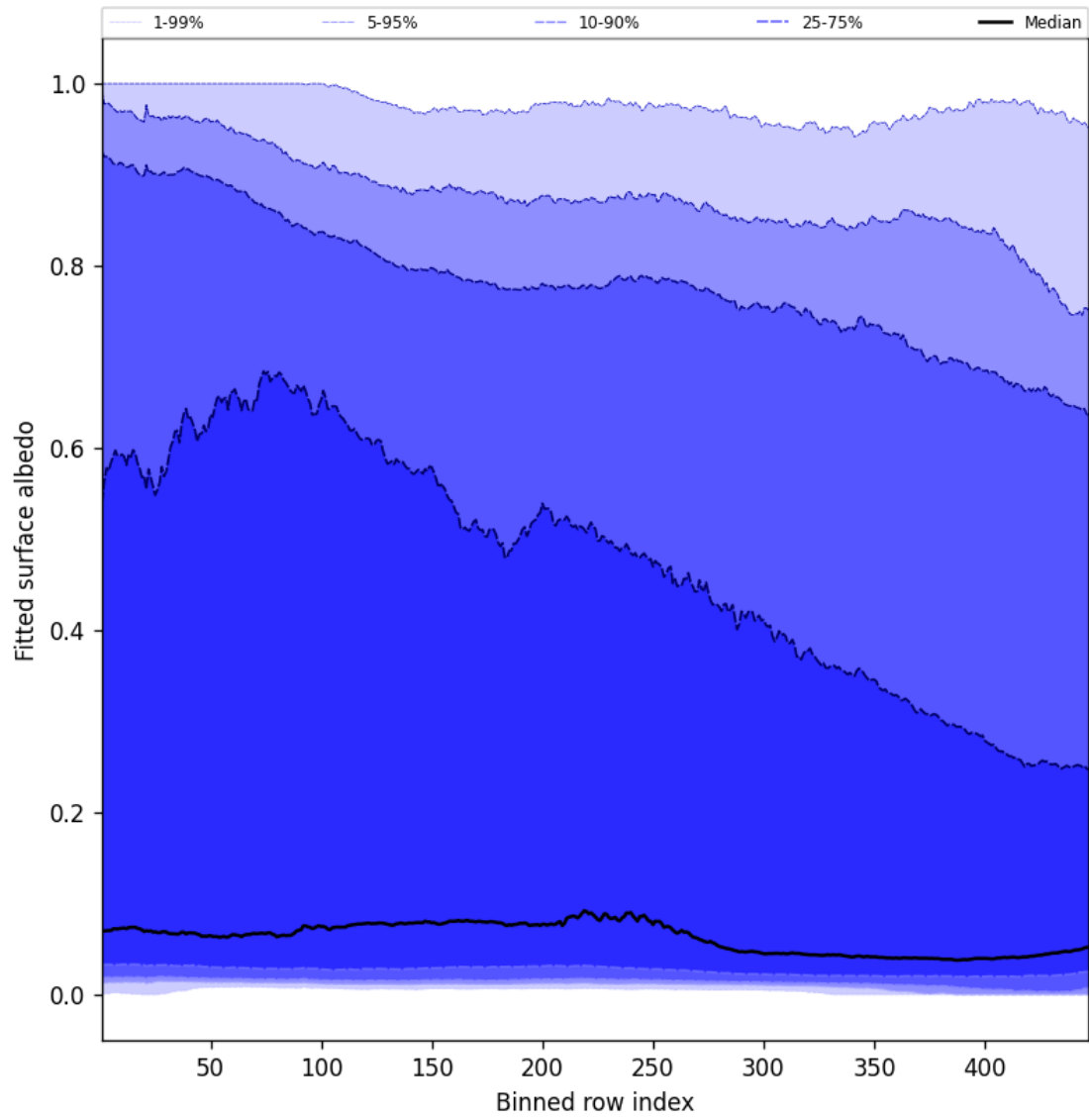


Figure 59: Along track statistics of “Fitted surface albedo” for 2025-03-22 to 2025-03-22

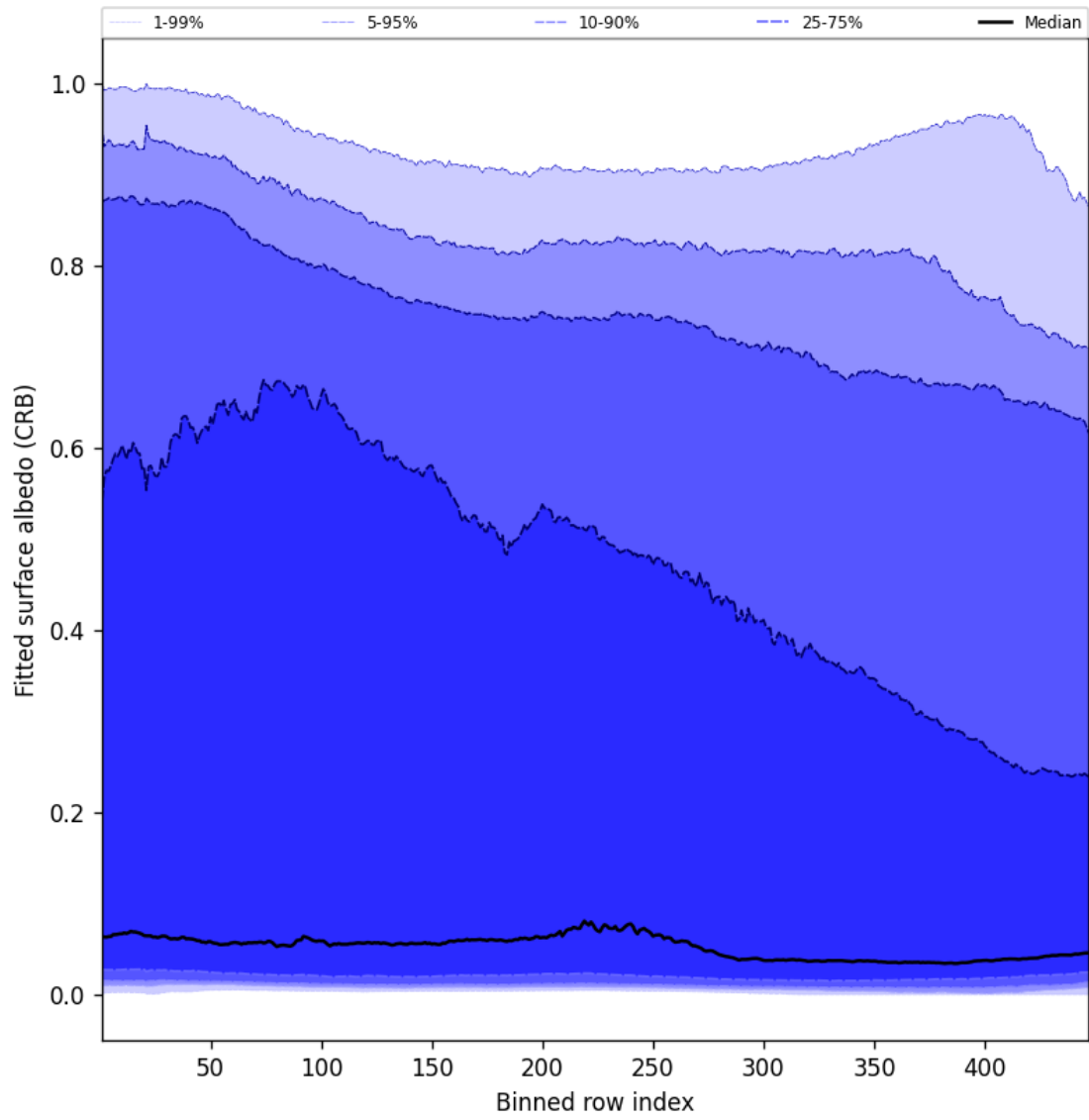


Figure 60: Along track statistics of “Fitted surface albedo (CRB)” for 2025-03-22 to 2025-03-22

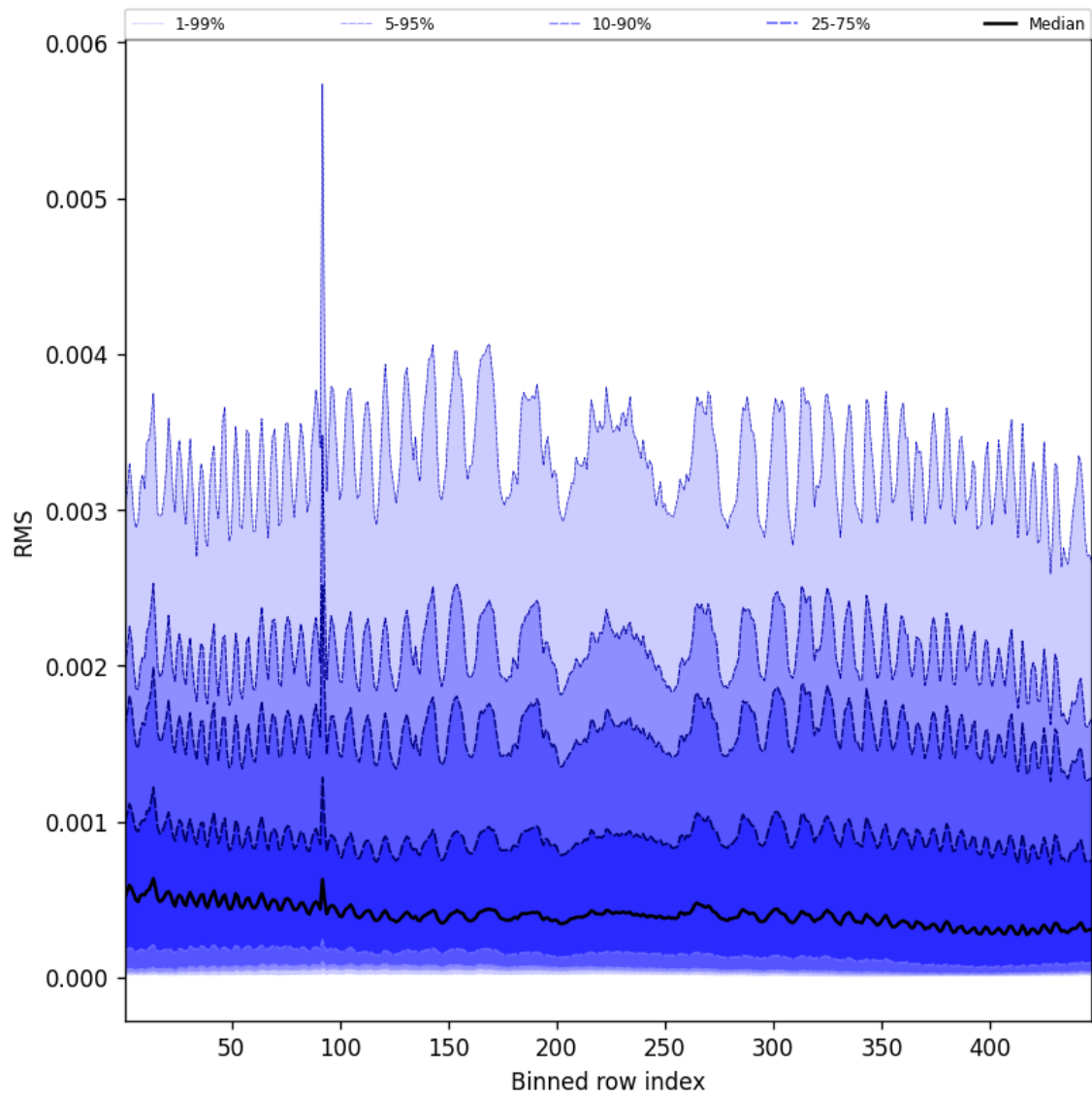


Figure 61: Along track statistics of “RMS” for 2025-03-22 to 2025-03-22

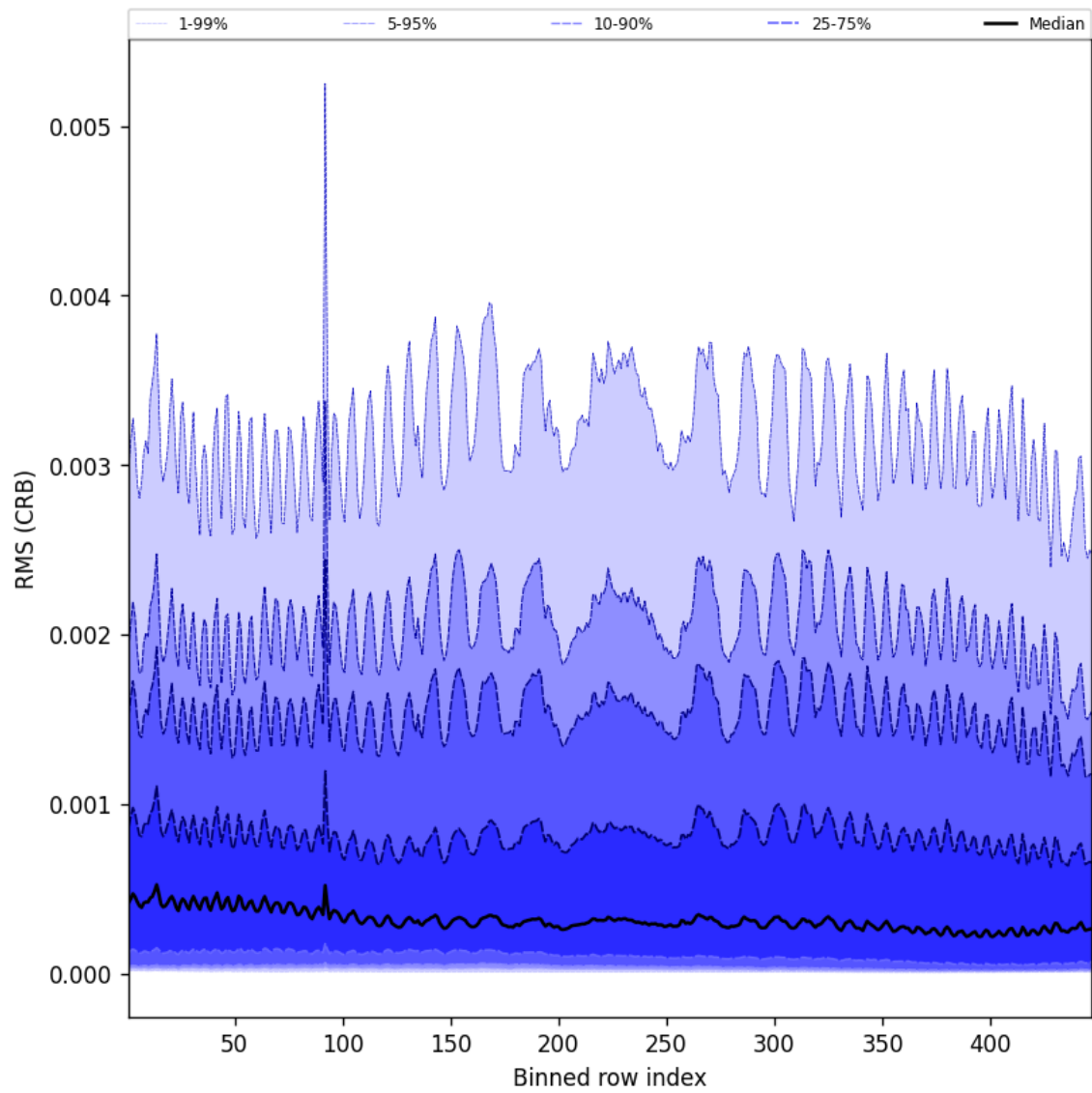


Figure 62: Along track statistics of “RMS (CRB)” for 2025-03-22 to 2025-03-22

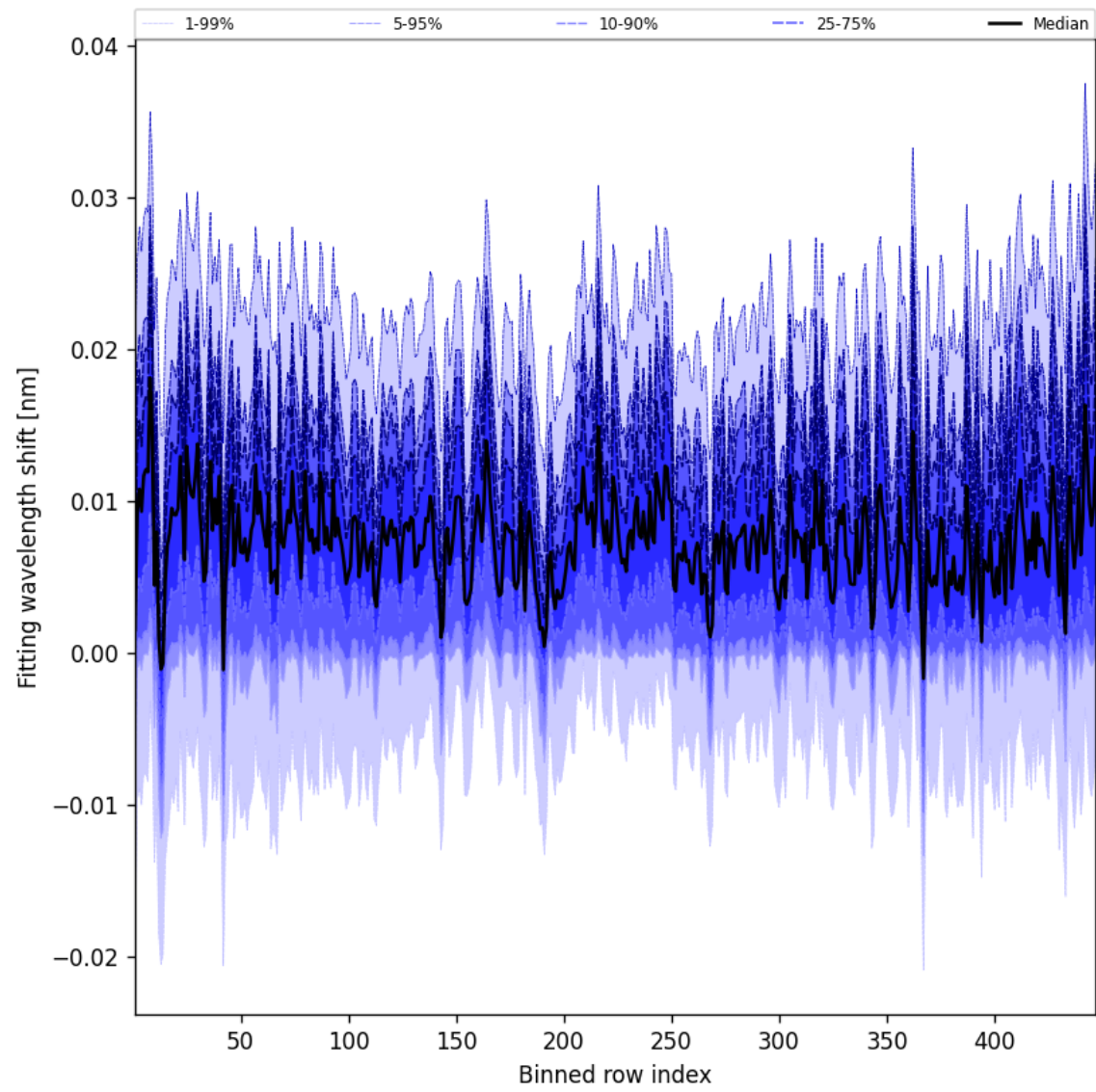


Figure 63: Along track statistics of “Fitting wavelength shift” for 2025-03-22 to 2025-03-22

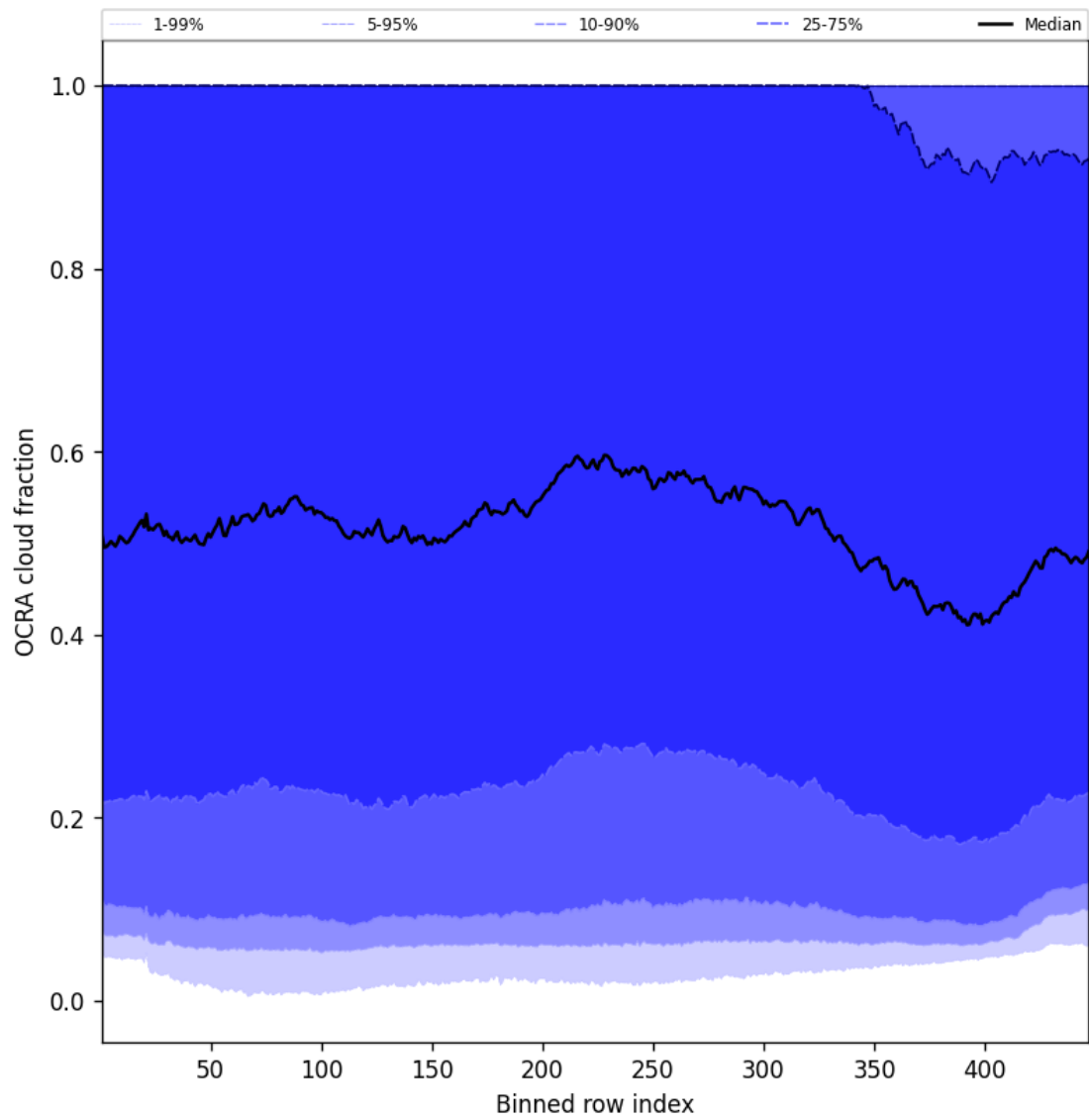


Figure 64: Along track statistics of “OCRA cloud fraction” for 2025-03-22 to 2025-03-22

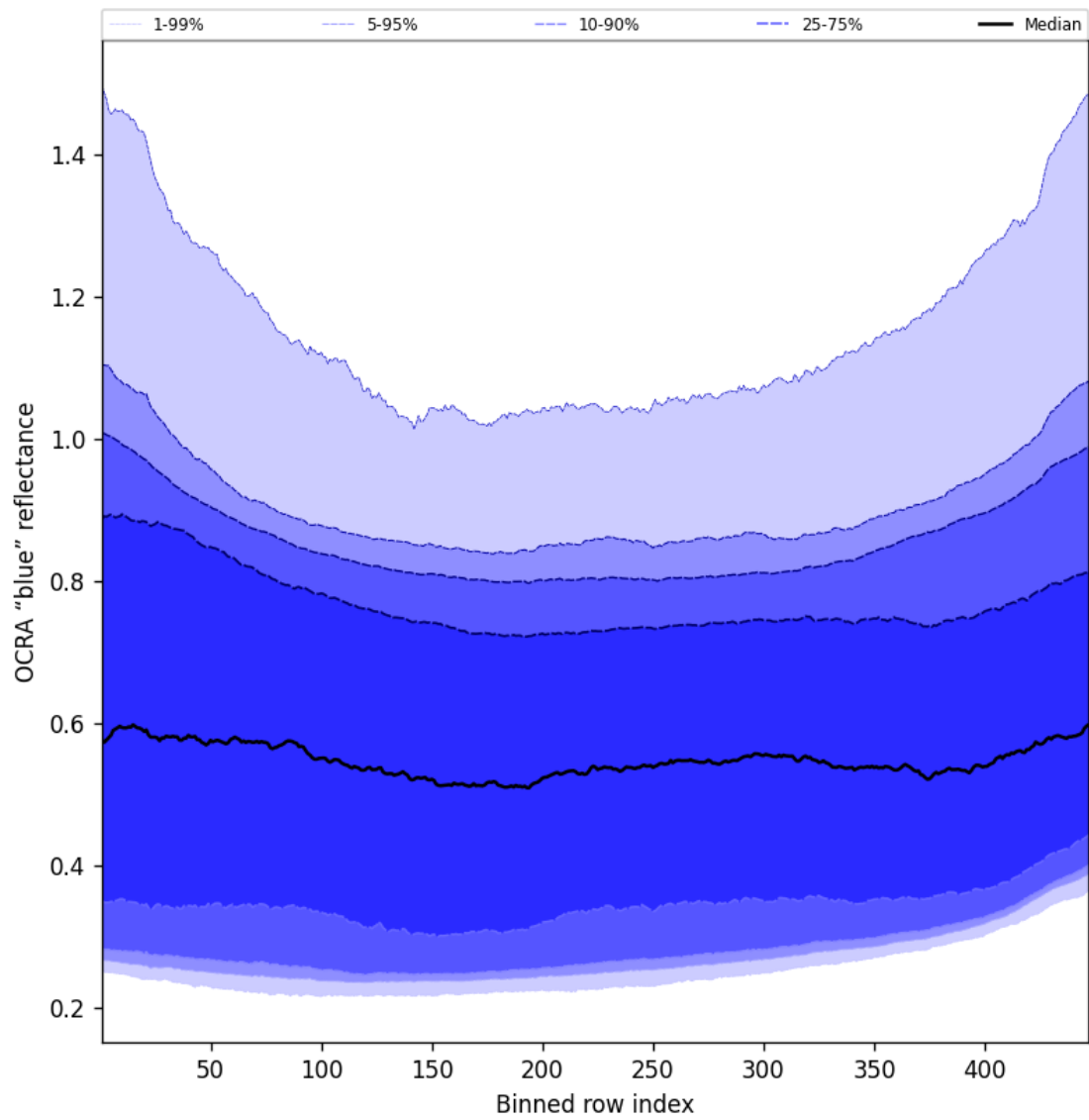


Figure 65: Along track statistics of “OCRA “blue” reflectance” for 2025-03-22 to 2025-03-22

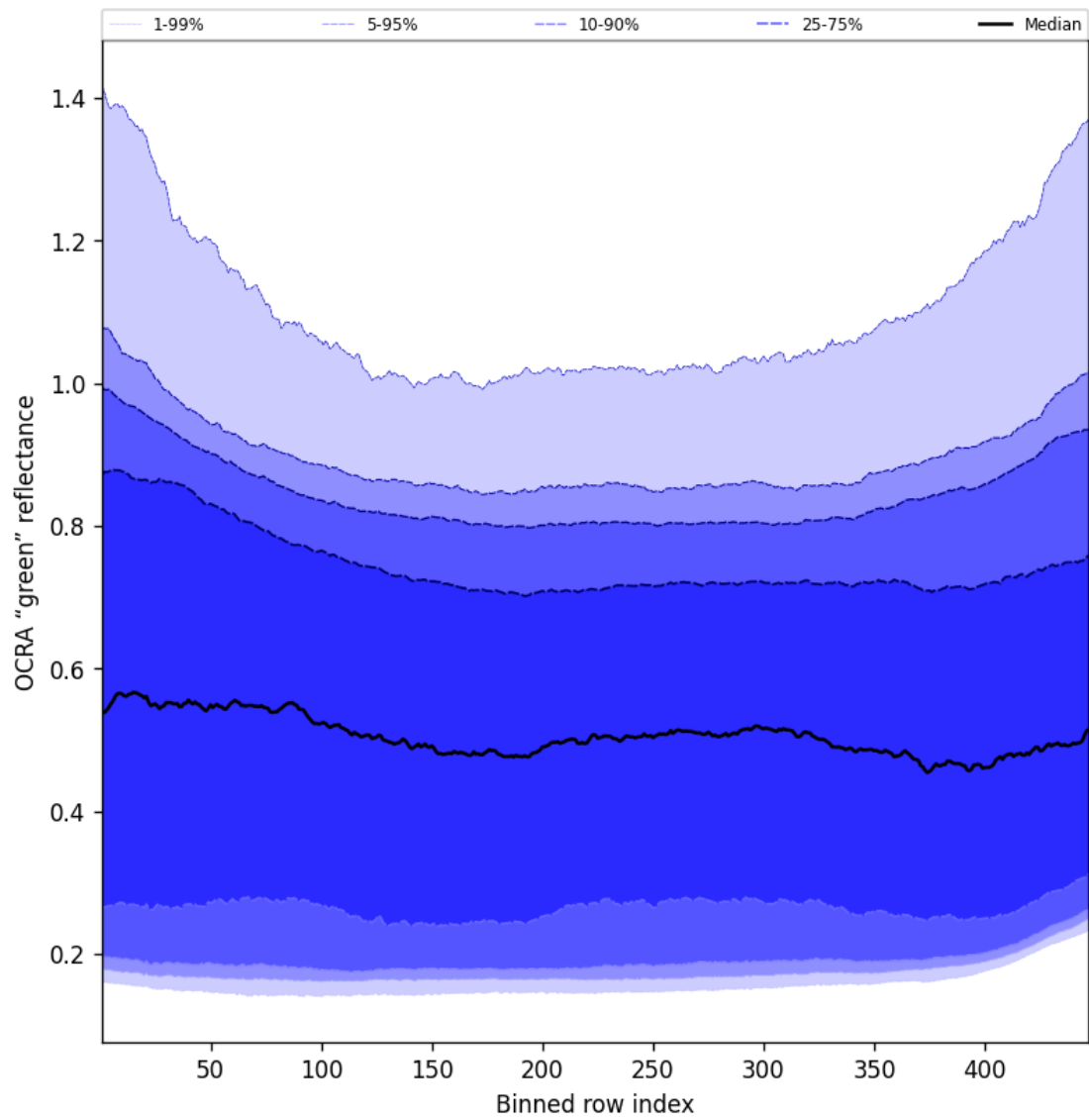


Figure 66: Along track statistics of “OCRA “green” reflectance” for 2025-03-22 to 2025-03-22

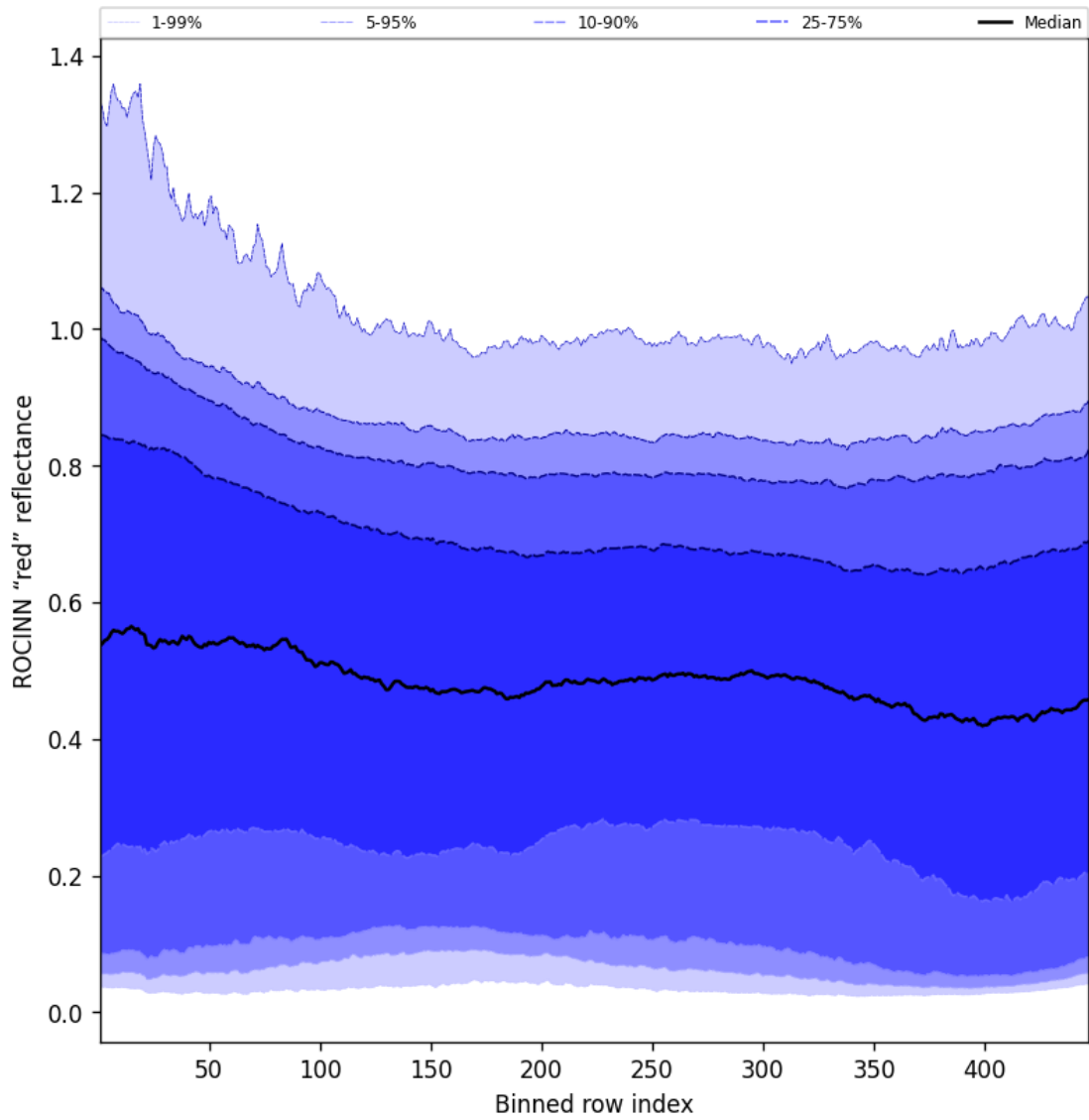


Figure 67: Along track statistics of “ROCINN “red” reflectance” for 2025-03-22 to 2025-03-22

10 Coincidence density

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

Contents

1	Short Introduction	1
1.1	The list of parameters	1
2	Definitions	1
3	Granule outlines	8
4	Input data monitoring	9
5	Warnings and errors	10
6	World maps	11
7	Zonal average	27
8	Histograms	43
9	Along track statistics	59
10	Coincidence density	75
11	Copyright information of ‘PyCAMA’	75

List of Figures

1	Outline of the granules.	8
2	Input data per granule	9
3	Fraction of pixels with specific warnings and errors during processing	10
4	Map of “Radiometric cloud fraction” for 2025-03-22 to 2025-03-22	11
5	Map of “Cloud top height” for 2025-03-22 to 2025-03-22	12
6	Map of “Cloud optical thickness” for 2025-03-22 to 2025-03-22	13
7	Map of “Cloud fraction (CRB)” for 2025-03-22 to 2025-03-22	14
8	Map of “Cloud height (CRB)” for 2025-03-22 to 2025-03-22	15
9	Map of “Cloud albedo (CRB)” for 2025-03-22 to 2025-03-22	16
10	Map of “Fitted surface albedo” for 2025-03-22 to 2025-03-22	17
11	Map of “Fitted surface albedo (CRB)” for 2025-03-22 to 2025-03-22	18
12	Map of “RMS” for 2025-03-22 to 2025-03-22	19
13	Map of “RMS (CRB)” for 2025-03-22 to 2025-03-22	20
14	Map of “Fitting wavelength shift” for 2025-03-22 to 2025-03-22	21
15	Map of “OCRA cloud fraction” for 2025-03-22 to 2025-03-22	22
16	Map of “OCRA “blue” reflectance” for 2025-03-22 to 2025-03-22	23
17	Map of “OCRA “green” reflectance” for 2025-03-22 to 2025-03-22	24
18	Map of “ROCINN “red” reflectance” for 2025-03-22 to 2025-03-22	25
19	Map of the number of observations for 2025-03-22 to 2025-03-22	26
20	Zonal average of “QA value” for 2025-03-22 to 2025-03-22.	27
21	Zonal average of “Radiometric cloud fraction” for 2025-03-22 to 2025-03-22.	28
22	Zonal average of “Cloud top height” for 2025-03-22 to 2025-03-22.	29
23	Zonal average of “Cloud optical thickness” for 2025-03-22 to 2025-03-22.	30
24	Zonal average of “Cloud fraction (CRB)” for 2025-03-22 to 2025-03-22.	31
25	Zonal average of “Cloud height (CRB)” for 2025-03-22 to 2025-03-22.	32
26	Zonal average of “Cloud albedo (CRB)” for 2025-03-22 to 2025-03-22.	33
27	Zonal average of “Fitted surface albedo” for 2025-03-22 to 2025-03-22.	34
28	Zonal average of “Fitted surface albedo (CRB)” for 2025-03-22 to 2025-03-22.	35
29	Zonal average of “RMS” for 2025-03-22 to 2025-03-22.	36

30	Zonal average of “RMS (CRB)” for 2025-03-22 to 2025-03-22.	37
31	Zonal average of “Fitting wavelength shift” for 2025-03-22 to 2025-03-22.	38
32	Zonal average of “OCRA cloud fraction” for 2025-03-22 to 2025-03-22.	39
33	Zonal average of “OCRA “blue” reflectance” for 2025-03-22 to 2025-03-22.	40
34	Zonal average of “OCRA “green” reflectance” for 2025-03-22 to 2025-03-22.	41
35	Zonal average of “ROCINN “red” reflectance” for 2025-03-22 to 2025-03-22.	42
36	Histogram of “QA value” for 2025-03-22 to 2025-03-22	43
37	Histogram of “Radiometric cloud fraction” for 2025-03-22 to 2025-03-22	44
38	Histogram of “Cloud top height” for 2025-03-22 to 2025-03-22	45
39	Histogram of “Cloud optical thickness” for 2025-03-22 to 2025-03-22	46
40	Histogram of “Cloud fraction (CRB)” for 2025-03-22 to 2025-03-22	47
41	Histogram of “Cloud height (CRB)” for 2025-03-22 to 2025-03-22	48
42	Histogram of “Cloud albedo (CRB)” for 2025-03-22 to 2025-03-22	49
43	Histogram of “Fitted surface albedo” for 2025-03-22 to 2025-03-22	50
44	Histogram of “Fitted surface albedo (CRB)” for 2025-03-22 to 2025-03-22	51
45	Histogram of “RMS” for 2025-03-22 to 2025-03-22	52
46	Histogram of “RMS (CRB)” for 2025-03-22 to 2025-03-22	53
47	Histogram of “Fitting wavelength shift” for 2025-03-22 to 2025-03-22	54
48	Histogram of “OCRA cloud fraction” for 2025-03-22 to 2025-03-22	55
49	Histogram of “OCRA “blue” reflectance” for 2025-03-22 to 2025-03-22	56
50	Histogram of “OCRA “green” reflectance” for 2025-03-22 to 2025-03-22	57
51	Histogram of “ROCINN “red” reflectance” for 2025-03-22 to 2025-03-22	58
52	Along track statistics of “QA value” for 2025-03-22 to 2025-03-22	59
53	Along track statistics of “Radiometric cloud fraction” for 2025-03-22 to 2025-03-22	60
54	Along track statistics of “Cloud top height” for 2025-03-22 to 2025-03-22	61
55	Along track statistics of “Cloud optical thickness” for 2025-03-22 to 2025-03-22	62
56	Along track statistics of “Cloud fraction (CRB)” for 2025-03-22 to 2025-03-22	63
57	Along track statistics of “Cloud height (CRB)” for 2025-03-22 to 2025-03-22	64
58	Along track statistics of “Cloud albedo (CRB)” for 2025-03-22 to 2025-03-22	65
59	Along track statistics of “Fitted surface albedo” for 2025-03-22 to 2025-03-22	66
60	Along track statistics of “Fitted surface albedo (CRB)” for 2025-03-22 to 2025-03-22	67
61	Along track statistics of “RMS” for 2025-03-22 to 2025-03-22	68
62	Along track statistics of “RMS (CRB)” for 2025-03-22 to 2025-03-22	69
63	Along track statistics of “Fitting wavelength shift” for 2025-03-22 to 2025-03-22	70
64	Along track statistics of “OCRA cloud fraction” for 2025-03-22 to 2025-03-22	71
65	Along track statistics of “OCRA “blue” reflectance” for 2025-03-22 to 2025-03-22	72
66	Along track statistics of “OCRA “green” reflectance” for 2025-03-22 to 2025-03-22	73
67	Along track statistics of “ROCINN “red” reflectance” for 2025-03-22 to 2025-03-22	74

List of Tables

1	Parameterlist and basic statistics for the analysis	2
2	Percentile ranges	3
3	Parameterlist and basic statistics for the analysis for observations in the northern hemisphere	4
4	Parameterlist and basic statistics for the analysis for observations in the southern hemisphere	5
5	Parameterlist and basic statistics for the analysis for observations over water	6
6	Parameterlist and basic statistics for the analysis for observations over land	7

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Maarten Sneep (maarten.sneep@knmi.nl).