PyCAMA report generated by tropl2-proc

tropl2-proc

2025-03-10 (04:15)

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:

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

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]	0.611 ± 0.386	18264303	5.000×10^{-3}	0.690	0.780	0.0	1.000
cloud fraction [1]	0.540 ± 0.346	18264303	0.995	0.730	0.481	3.441×10^{-3}	1.000
cloud top height [m]	$(0.390 \pm 0.261) \times 10^4$	18264303	1.725×10^3	3.527×10^3	3.289×10^3	0.0	2.000×10^4
cloud optical thickness [1]	17.0 ± 30.2	18264303	9.34	9.42	8.94	1.000	250
cloud fraction crb [1]	0.540 ± 0.346	18264303	0.995	0.729	0.481	8.120×10^{-3}	1.000
cloud height crb [m]	$(0.304 \pm 0.226) \times 10^4$	18264303	1.125×10^3	3.104×10^3	2.542×10^3	0.0	2.000×10^4
cloud albedo crb [1]	0.597 ± 0.217	18264303	0.995	0.279	0.575	0.0	1.000
surface albedo fitted [1]	0.272 ± 0.329	18264303	2.500×10^{-2}	0.516	5.419×10^{-2}	0.0	1.000
surface albedo fitted crb [1]	0.260 ± 0.317	18264303	1.500×10^{-2}	0.519	4.525×10^{-2}	0.0	1.000
fitted root mean square [1]	$(6.687 \pm 9.771) \times 10^{-4}$	18264303	5.000×10^{-5}	7.682×10^{-4}	4.329×10^{-4}	1.418×10^{-6}	0.389
fitted root mean square crb [1]	$(5.838 \pm 8.357) \times 10^{-4}$	18264303	5.000×10^{-5}	6.893×10^{-4}	3.226×10^{-4}	1.200×10^{-6}	0.319
wavelength shift [nm]	$(7.712 \pm 6.854) \times 10^{-3}$	18264303	9.000×10^{-4}	9.457×10^{-3}	7.325×10^{-3}	-4.489×10^{-2}	0.159
cloud fraction apriori [1]	0.548 ± 0.350	18264303	0.995	0.776	0.494	0.0	1.000
reflectance blue ocra [1]	0.577 ± 0.236	18264303	0.255	0.407	0.562	0.142	1.99
reflectance green ocra [1]	0.528 ± 0.263	18264303	0.175	0.481	0.521	8.232×10^{-2}	1.93
reflectance continuum aband [1]	0.482 ± 0.285	18264303	4.500×10^{-2}	0.491	0.493	1.240×10^{-2}	4.91

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	0.260	0.950	1.000	1.000	1.000	1.000
cloud fraction [1]	2.547×10^{-2}	6.503×10^{-2}	0.100	0.145	0.223	0.952	1.000	1.000	1.000	1.000
cloud top height [m]	285	798	1.155×10^{3}	1.461×10^{3}	1.863×10^{3}	5.390×10^{3}	6.569×10^{3}	7.622×10^{3}	8.975×10^{3}	1.151×10^{4}
cloud optical thickness [1]	1.000	2.56	3.74	4.60	5.49	14.9	22.3	33.1	54.3	210
cloud fraction crb [1]	2.515×10^{-2}	6.430×10^{-2}	9.986×10^{-2}	0.145	0.223	0.951	1.000	1.000	1.000	1.000
cloud height crb [m]	0.0	296	627	897	1.244×10^{3}	4.348×10^{3}	5.309×10^{3}	6.278×10^{3}	7.588×10^{3}	9.527×10^{3}
cloud albedo crb [1]	0.0	0.230	0.351	0.416	0.466	0.745	0.836	0.911	0.995	1.000
surface albedo fitted [1]	0.0	9.712×10^{-3}	1.437×10^{-2}	1.876×10^{-2}	2.535×10^{-2}	0.541	0.759	0.837	0.912	0.995
surface albedo fitted crb [1]	1.110×10^{-3}	7.203×10^{-3}	1.060×10^{-2}	1.402×10^{-2}	1.942×10^{-2}	0.538	0.723	0.793	0.869	0.951
fitted root mean square [1]	1.721×10^{-5}	3.320×10^{-5}	5.240×10^{-5}	8.194×10^{-5}	1.454×10^{-4}	9.136×10^{-4}	1.228×10^{-3}	1.564×10^{-3}	2.109×10^{-3}	3.372×10^{-3}
fitted root mean square crb [1]	9.638×10^{-6}	2.284×10^{-5}	3.901×10^{-5}	6.030×10^{-5}	1.046×10^{-4}	7.939×10^{-4}	1.135×10^{-3}	1.492×10^{-3}	2.040×10^{-3}	3.211×10^{-3}
wavelength shift [nm]	-8.731×10^{-3}	-1.321×10^{-3}	7.400×10^{-5}	1.088×10^{-3}	2.731×10^{-3}	1.219×10^{-2}	1.444×10^{-2}	1.641×10^{-2}	1.912×10^{-2}	2.522×10^{-2}
cloud fraction apriori [1]	2.612×10^{-2}	6.288×10^{-2}	9.632×10^{-2}	0.142	0.224	1.000	1.000	1.000	1.000	1.000
reflectance blue ocra [1]	0.234	0.257	0.280	0.311	0.364	0.771	0.827	0.872	0.936	1.16
reflectance green ocra [1]	0.152	0.172	0.191	0.218	0.274	0.755	0.816	0.864	0.924	1.11
reflectance continuum aband [1]	3.009×10^{-2}	5.398×10^{-2}	8.582×10^{-2}	0.132	0.229	0.720	0.790	0.840	0.903	1.05

Table 3: Parameterlist and basic statistics for the analysis for observations in the northern hemisphere

Variable	mean $\pm\sigma$	Count	IQR	Median	Minimum	Maximum	25 % percentile	75 % percentile
qa value [1]	0.542 ± 0.396	8578332	0.900	0.700	0.0	1.000	0.0	0.900
cloud fraction [1]	0.507 ± 0.342	8578332	0.685	0.428	3.441×10^{-3}	1.000	0.201	0.885
cloud top height [m]	$(0.368 \pm 0.249) \times 10^4$	8578332	3.146×10^3	3.143×10^3	0.0	2.000×10^4	1.797×10^3	4.943×10^3
cloud optical thickness [1]	18.5 ± 35.7	8578332	8.92	8.58	1.000	250	5.57	14.5
cloud fraction crb [1]	0.507 ± 0.342	8578332	0.683	0.429	8.120×10^{-3}	1.000	0.201	0.884
cloud height crb [m]	$(0.284 \pm 0.216) \times 10^4$	8578332	2.972×10^3	2.406×10^3	0.0	2.000×10^4	1.134×10^3	4.106×10^3
cloud albedo crb [1]	0.619 ± 0.234	8578332	0.324	0.603	0.0	1.000	0.471	0.795
surface albedo fitted [1]	0.322 ± 0.311	8578332	0.580	0.214	0.0	1.000	3.729×10^{-2}	0.617
surface albedo fitted crb [1]	0.307 ± 0.295	8578332	0.576	0.213	0.0	1.000	2.945×10^{-2}	0.606
fitted root mean square [1]	$(7.215 \pm 11.855) \times 10^{-4}$	8578332	8.062×10^{-4}	4.659×10^{-4}	1.418×10^{-6}	0.389	1.626×10^{-4}	9.688×10^{-4}
fitted root mean square crb [1]	$(5.907 \pm 9.734) \times 10^{-4}$	8578332	6.799×10^{-4}	3.182×10^{-4}	2.027×10^{-6}	0.319	1.005×10^{-4}	7.803×10^{-4}
wavelength shift [nm]	$(7.926 \pm 6.970) \times 10^{-3}$	8578332	9.747×10^{-3}	7.509×10^{-3}	-4.435×10^{-2}	0.159	2.761×10^{-3}	1.251×10^{-2}
cloud fraction apriori [1]	0.519 ± 0.346	8578332	0.718	0.446	0.0	1.000	0.206	0.924
reflectance blue ocra [1]	0.585 ± 0.241	8578332	0.408	0.580	0.142	1.99	0.365	0.773
reflectance green ocra [1]	0.539 ± 0.265	8578332	0.482	0.545	8.232×10^{-2}	1.93	0.280	0.762
reflectance continuum aband [1]	0.498 ± 0.282	8578332	0.483	0.519	1.404×10^{-2}	4.11	0.250	0.733

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]	0.672 ± 0.367	9685971	0.570	0.880	0.0	1.000	0.400	0.970
cloud fraction [1]	0.570 ± 0.346	9685971	0.739	0.537	8.298×10^{-3}	1.000	0.246	0.984
cloud top height [m]	$(0.409 \pm 0.269) \times 10^4$	9685971	3.937×10^3	3.438×10^3	0.0	2.000×10^4	1.920×10^3	5.857×10^3
cloud optical thickness [1]	15.6 ± 24.3	9685971	9.82	9.28	1.000	250	5.42	15.2
cloud fraction crb [1]	0.569 ± 0.346	9685971	0.739	0.537	8.439×10^{-3}	1.000	0.245	0.984
cloud height crb [m]	$(0.322 \pm 0.234) \times 10^4$	9685971	3.299×10^3	2.659×10^3	0.0	2.000×10^4	1.339×10^3	4.637×10^3
cloud albedo crb [1]	0.578 ± 0.199	9685971	0.238	0.557	0.0	1.000	0.463	0.701
surface albedo fitted [1]	0.228 ± 0.338	9685971	0.269	3.653×10^{-2}	0.0	1.000	2.013×10^{-2}	0.290
surface albedo fitted crb [1]	0.218 ± 0.329	9685971	0.270	2.931×10^{-2}	0.0	1.000	1.509×10^{-2}	0.285
fitted root mean square [1]	$(6.219 \pm 7.421) \times 10^{-4}$	9685971	7.333×10^{-4}	4.048×10^{-4}	1.592×10^{-6}	0.236	1.322×10^{-4}	8.655×10^{-4}
fitted root mean square crb [1]	$(5.776 \pm 6.912) \times 10^{-4}$	9685971	6.963×10^{-4}	3.269×10^{-4}	1.200×10^{-6}	0.111	1.081×10^{-4}	8.043×10^{-4}
wavelength shift [nm]	$(7.523 \pm 6.745) \times 10^{-3}$	9685971	9.210×10^{-3}	7.168×10^{-3}	-4.489×10^{-2}	6.511×10^{-2}	2.705×10^{-3}	1.192×10^{-2}
cloud fraction apriori [1]	0.573 ± 0.351	9685971	0.758	0.545	0.0	1.000	0.242	1.000
reflectance blue ocra [1]	0.570 ± 0.231	9685971	0.406	0.548	0.156	1.99	0.363	0.769
reflectance green ocra [1]	0.518 ± 0.260	9685971	0.477	0.504	8.575×10^{-2}	1.91	0.269	0.746
reflectance continuum aband [1]	0.468 ± 0.286	9685971	0.498	0.473	1.240×10^{-2}	4.91	0.207	0.705

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]	0.691 ± 0.361	11888861	0.600	0.900	0.0	1.000	0.400	1.000
cloud fraction [1]	0.565 ± 0.358	11888861	0.778	0.547	3.441×10^{-3}	1.000	0.213	0.992
cloud top height [m]	$(0.338 \pm 0.224) \times 10^4$	11888861	2.768×10^3	2.816×10^3	0.0	2.000×10^4	1.722×10^3	4.490×10^3
cloud optical thickness [1]	17.0 ± 25.6	11888861	9.42	9.92	1.000	250	6.70	16.1
cloud fraction crb [1]	0.564 ± 0.358	11888861	0.778	0.546	8.169×10^{-3}	1.000	0.212	0.991
cloud height crb [m]	$(0.270 \pm 0.204) \times 10^4$	11888861	2.679×10^3	2.183×10^3	0.0	2.000×10^4	1.143×10^3	3.822×10^3
cloud albedo crb [1]	0.561 ± 0.181	11888861	0.208	0.540	0.0	1.000	0.457	0.665
surface albedo fitted [1]	0.112 ± 0.217	11888861	3.327×10^{-2}	3.157×10^{-2}	0.0	1.000	1.911×10^{-2}	5.238×10^{-2}
surface albedo fitted crb [1]	0.103 ± 0.207	11888861	2.923×10^{-2}	2.475×10^{-2}	0.0	1.000	1.430×10^{-2}	4.353×10^{-2}
fitted root mean square [1]	$(5.660 \pm 9.441) \times 10^{-4}$	11888861	6.897×10^{-4}	3.023×10^{-4}	1.418×10^{-6}	0.389	9.582×10^{-5}	7.855×10^{-4}
fitted root mean square crb [1]	$(5.179 \pm 8.620) \times 10^{-4}$	11888861	6.343×10^{-4}	2.419×10^{-4}	1.200×10^{-6}	0.319	7.948×10^{-5}	7.137×10^{-4}
wavelength shift [nm]	$(7.040 \pm 7.060) \times 10^{-3}$	11888861	9.354×10^{-3}	6.350×10^{-3}	-4.489×10^{-2}	0.159	2.125×10^{-3}	1.148×10^{-2}
cloud fraction apriori [1]	0.567 ± 0.364	11888861	0.793	0.551	0.0	1.000	0.207	1.000
reflectance blue ocra [1]	0.521 ± 0.211	11888861	0.344	0.487	0.165	1.95	0.339	0.683
reflectance green ocra [1]	0.462 ± 0.237	11888861	0.416	0.429	8.575×10^{-2}	1.85	0.241	0.657
reflectance continuum aband [1]	0.396 ± 0.269	11888861	0.484	0.376	1.240×10^{-2}	4.91	0.138	0.622

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]	0.454 ± 0.392	4877584	0.800	0.610	0.0	1.000	0.0	0.800
cloud fraction [1]	0.488 ± 0.312	4877584	0.503	0.409	4.288×10^{-3}	1.000	0.236	0.739
cloud top height [m]	$(0.529 \pm 0.290) \times 10^4$	4877584	4.130×10^3	5.164×10^3	0.0	2.000×10^4	3.019×10^3	7.150×10^3
cloud optical thickness [1]	13.7 ± 30.6	4877584	6.32	5.83	1.000	250	4.24	10.6
cloud fraction crb [1]	0.489 ± 0.311	4877584	0.502	0.411	8.258×10^{-3}	1.000	0.237	0.740
cloud height crb [m]	$(0.401 \pm 0.248) \times 10^4$	4877584	3.496×10^3	3.751×10^3	0.0	2.000×10^4	2.048×10^3	5.544×10^3
cloud albedo crb [1]	0.656 ± 0.257	4877584	0.361	0.684	0.0	1.000	0.502	0.863
surface albedo fitted [1]	0.589 ± 0.293	4877584	0.578	0.665	0.0	1.000	0.283	0.862
surface albedo fitted crb [1]	0.575 ± 0.277	4877584	0.546	0.657	0.0	1.000	0.282	0.828
fitted root mean square [1]	$(8.537 \pm 10.258) \times 10^{-4}$	4877584	7.571×10^{-4}	6.121×10^{-4}	2.658×10^{-6}	0.236	3.260×10^{-4}	1.083×10^{-3}
fitted root mean square crb [1]	$(7.116 \pm 7.878) \times 10^{-4}$	4877584	7.433×10^{-4}	4.413×10^{-4}	2.065×10^{-6}	3.354×10^{-2}	1.886×10^{-4}	9.319×10^{-4}
wavelength shift [nm]	$(8.661 \pm 6.150) \times 10^{-3}$	4877584	8.767×10^{-3}	8.525×10^{-3}	-3.941×10^{-2}	5.942×10^{-2}	4.039×10^{-3}	1.280×10^{-2}
cloud fraction apriori [1]	0.503 ± 0.316	4877584	0.530	0.426	0.0	1.000	0.244	0.774
reflectance blue ocra [1]	0.684 ± 0.250	4877584	0.395	0.770	0.143	1.99	0.461	0.857
reflectance green ocra [1]	0.655 ± 0.269	4877584	0.439	0.752	8.232×10^{-2}	1.91	0.413	0.852
reflectance continuum aband [1]	0.646 ± 0.239	4877584	0.379	0.694	1.707×10^{-2}	3.30	0.446	0.825

3 Granule outlines

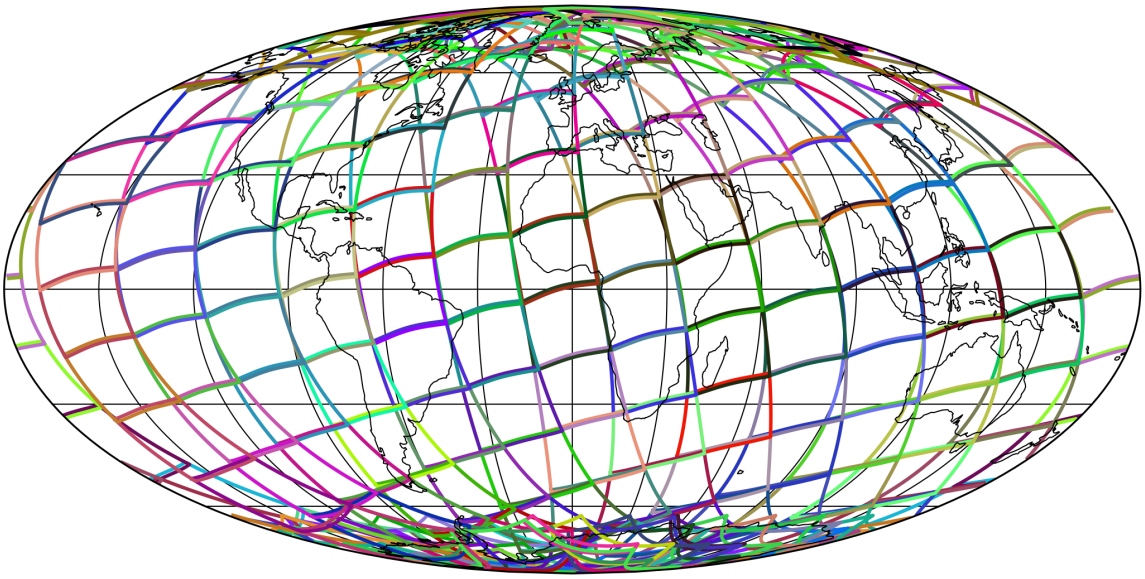

Figure 1: Outline of the granules.

4 Input data monitoring

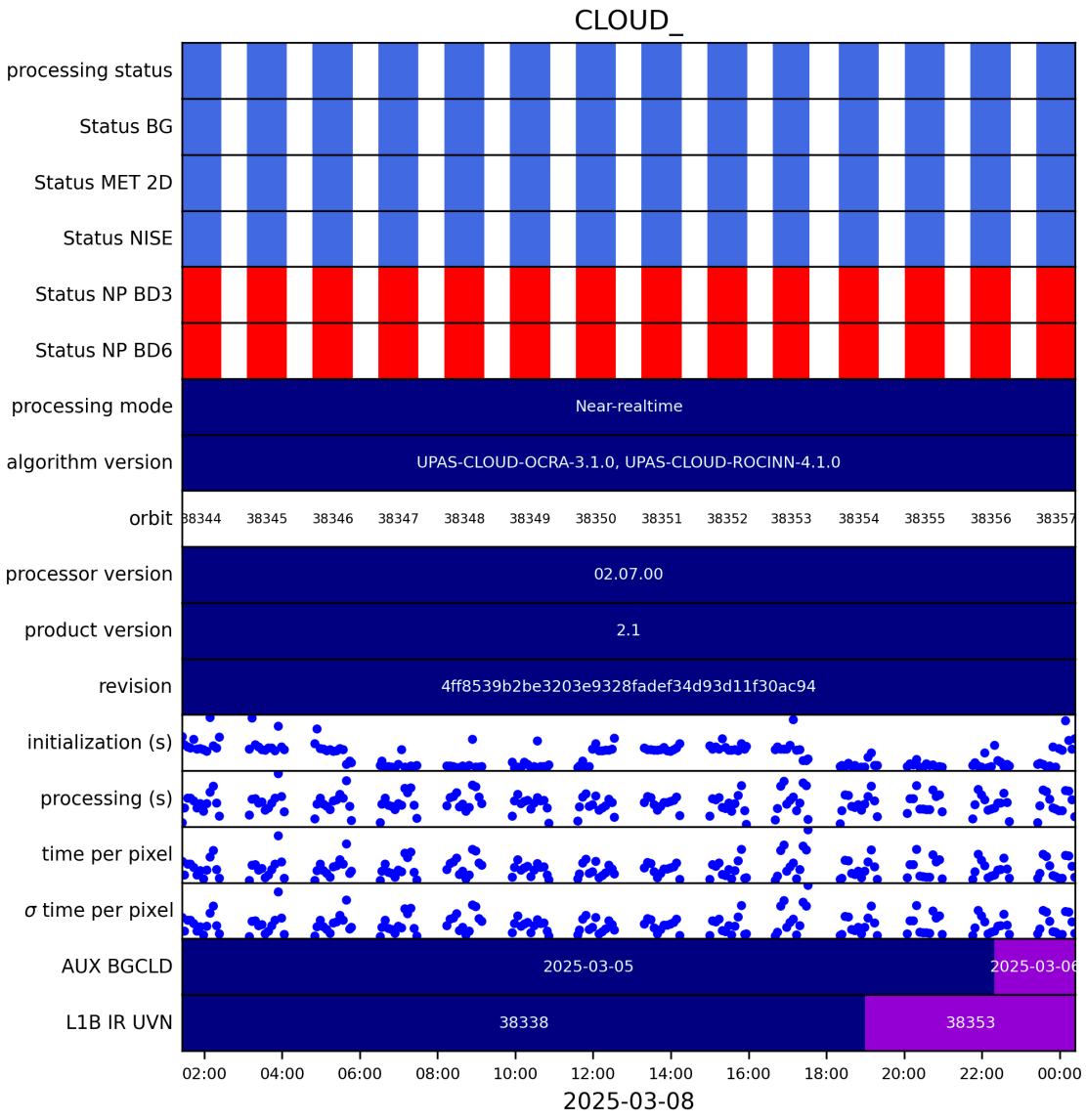

Figure 2: Input data per granule

5 Warnings and errors

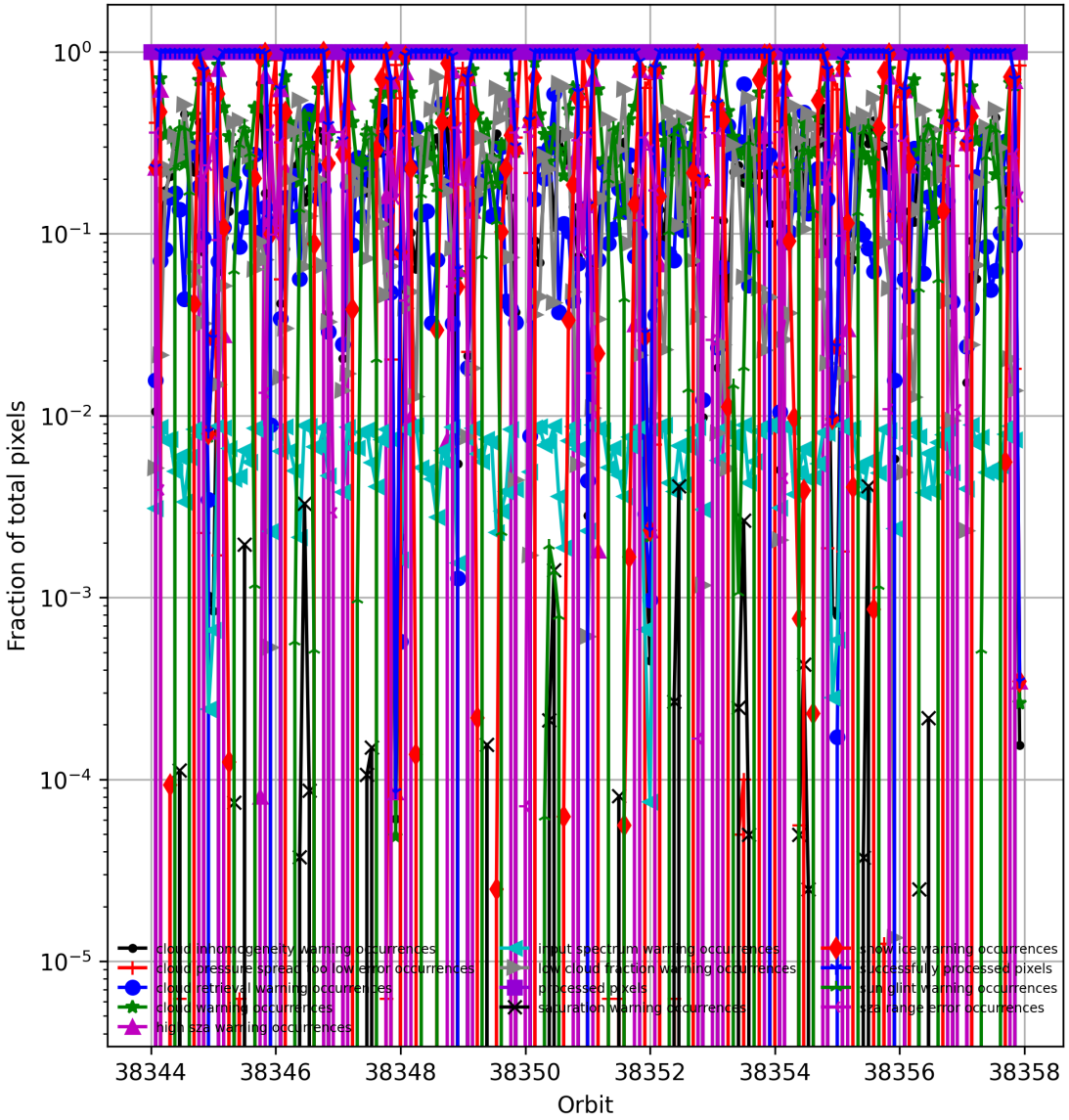

Figure 3: Fraction of pixels with specific warnings and errors during processing

6 World maps

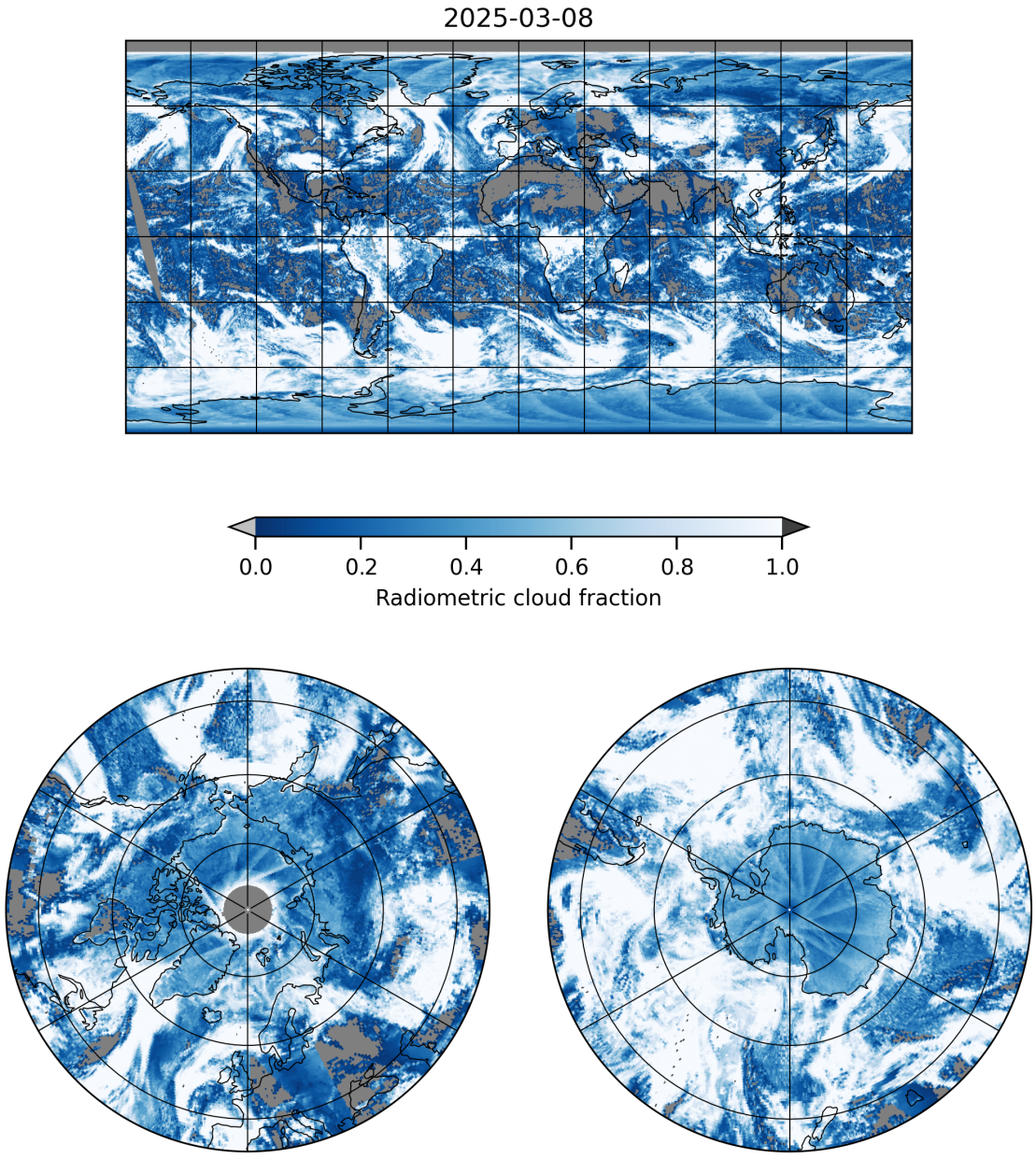

Figure 4: Map of “Radiometric cloud fraction” for 2025-03-08 to 2025-03-09

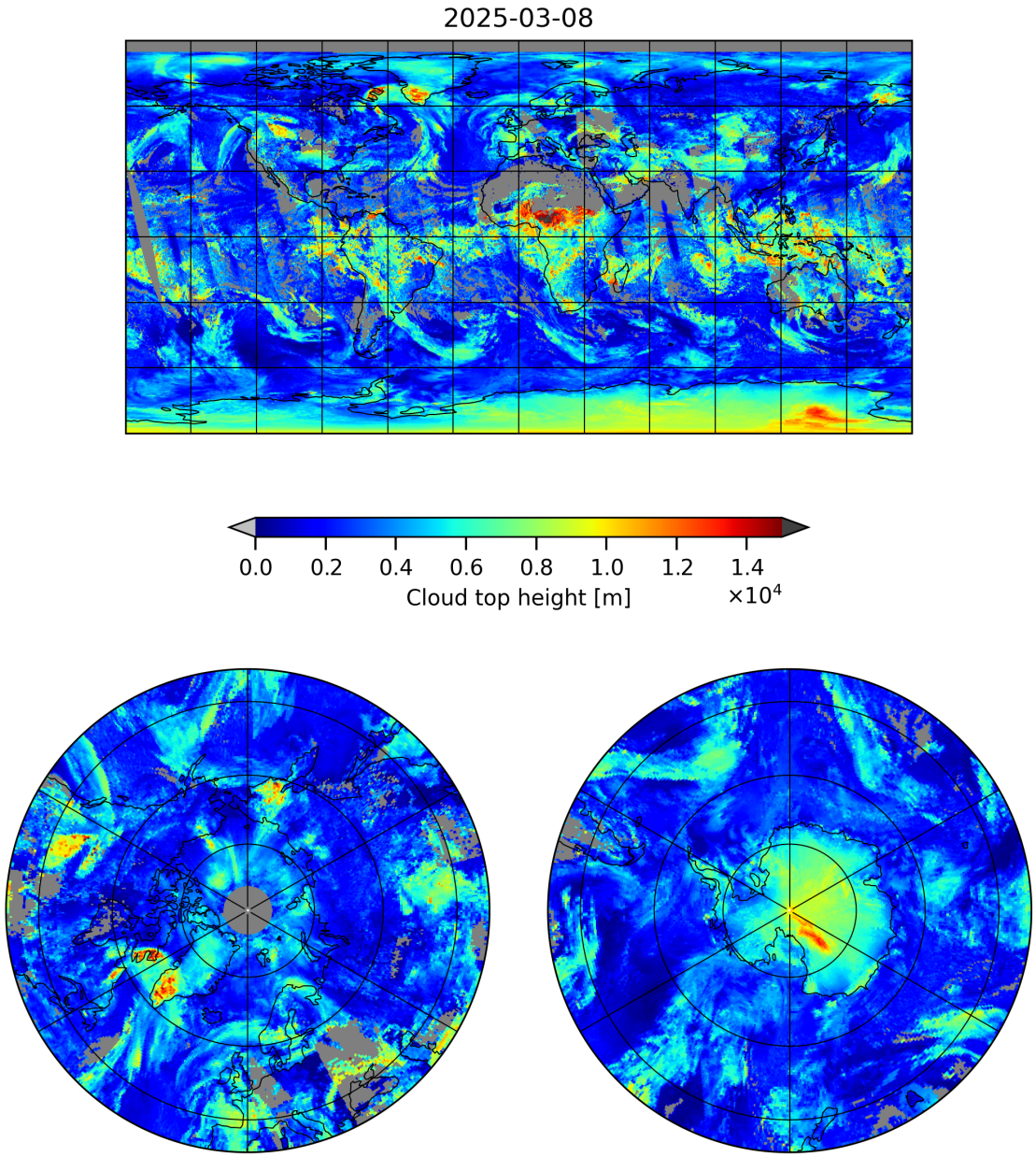

Figure 5: Map of “Cloud top height” for 2025-03-08 to 2025-03-09

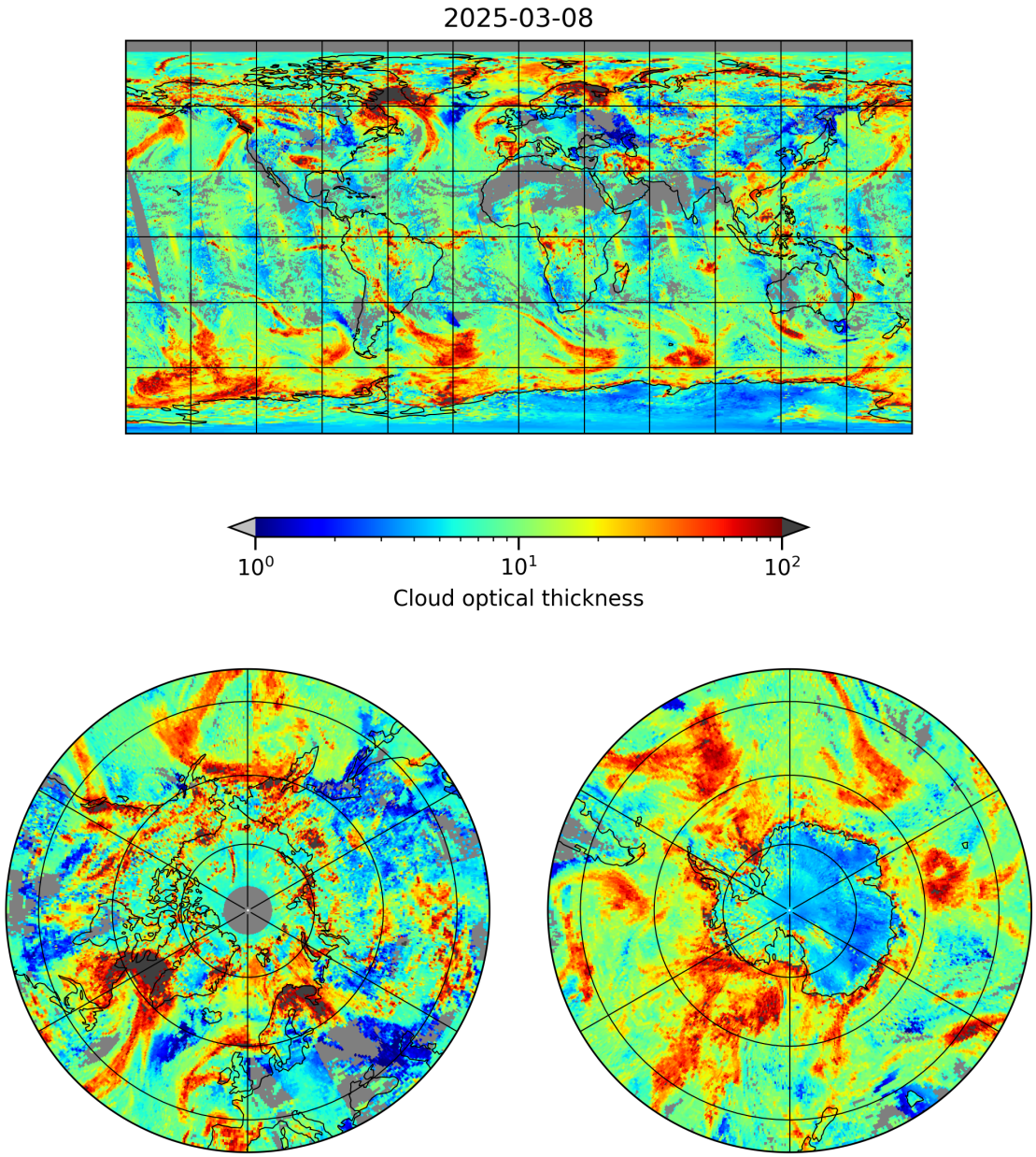

Figure 6: Map of “Cloud optical thickness” for 2025-03-08 to 2025-03-09

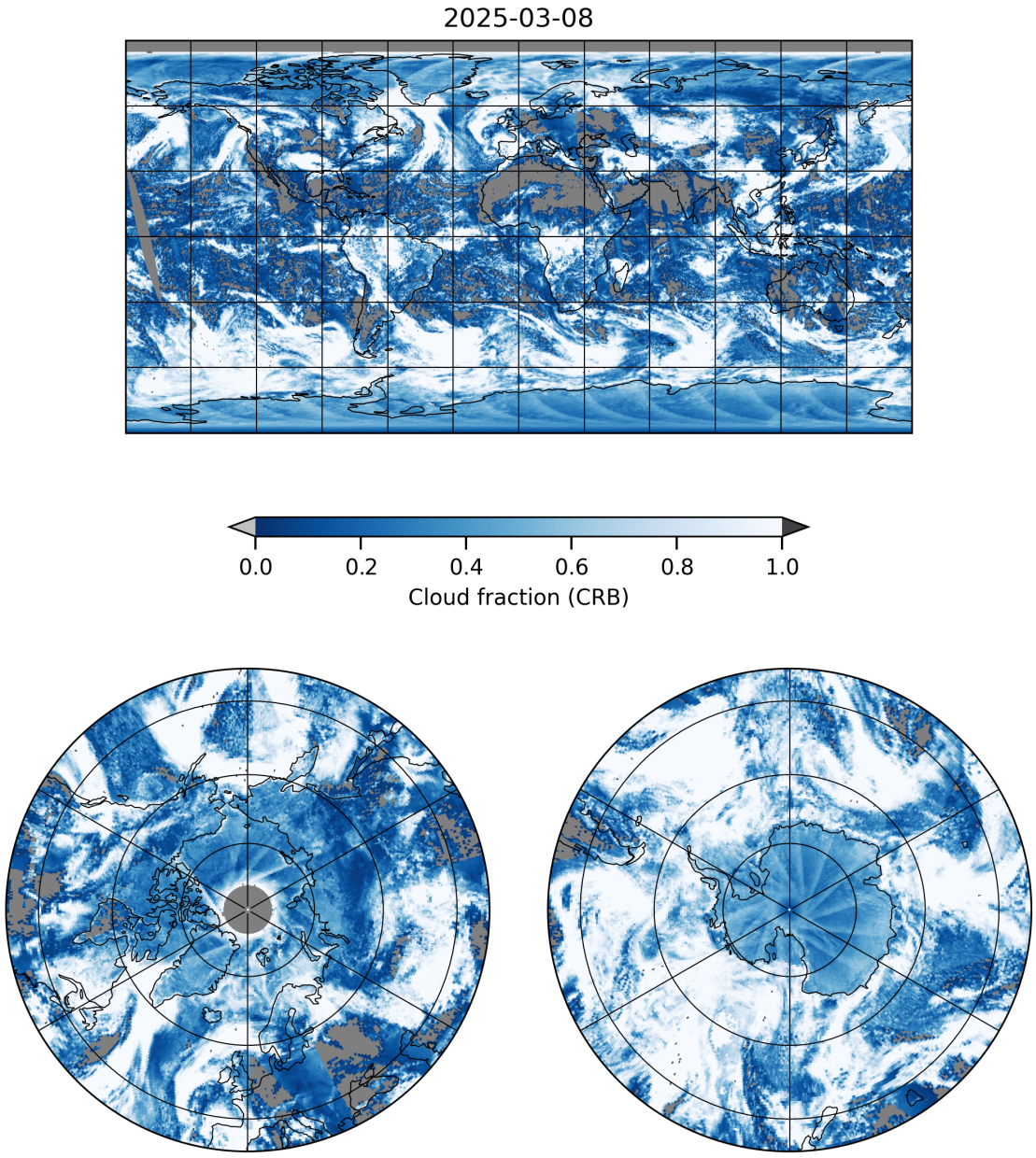

Figure 7: Map of “Cloud fraction (CRB)” for 2025-03-08 to 2025-03-09

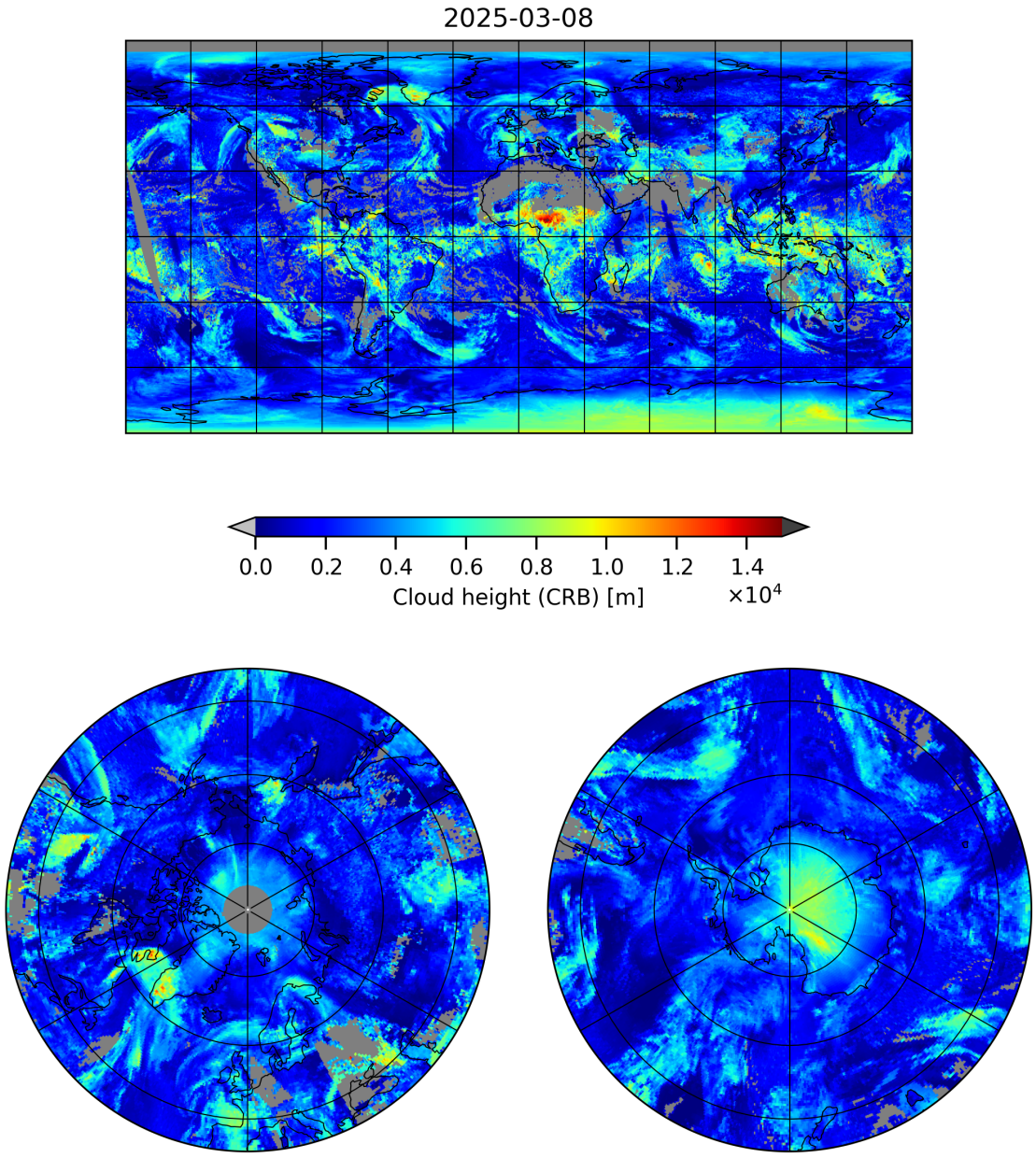

Figure 8: Map of “Cloud height (CRB)” for 2025-03-08 to 2025-03-09

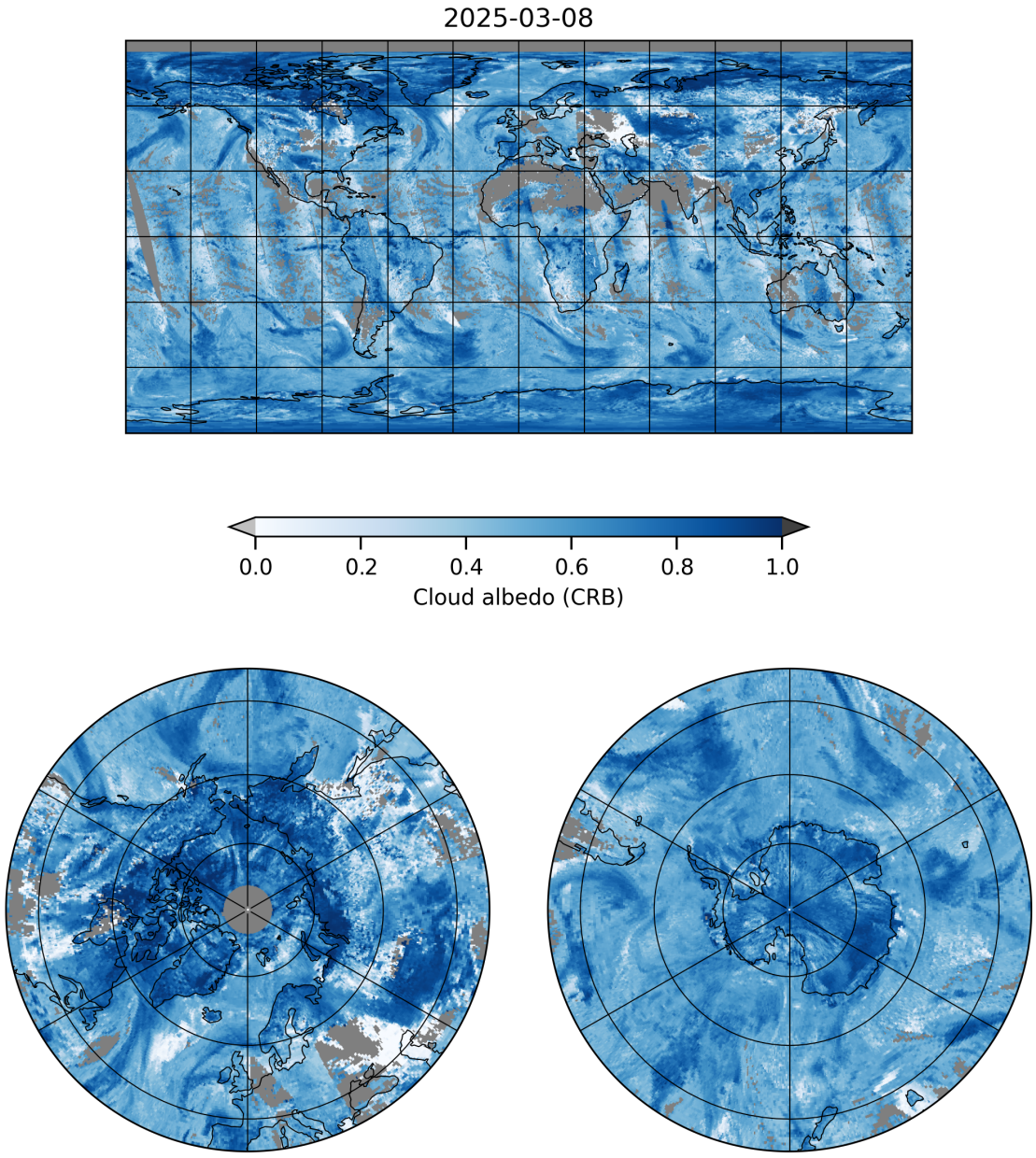

Figure 9: Map of “Cloud albedo (CRB)” for 2025-03-08 to 2025-03-09

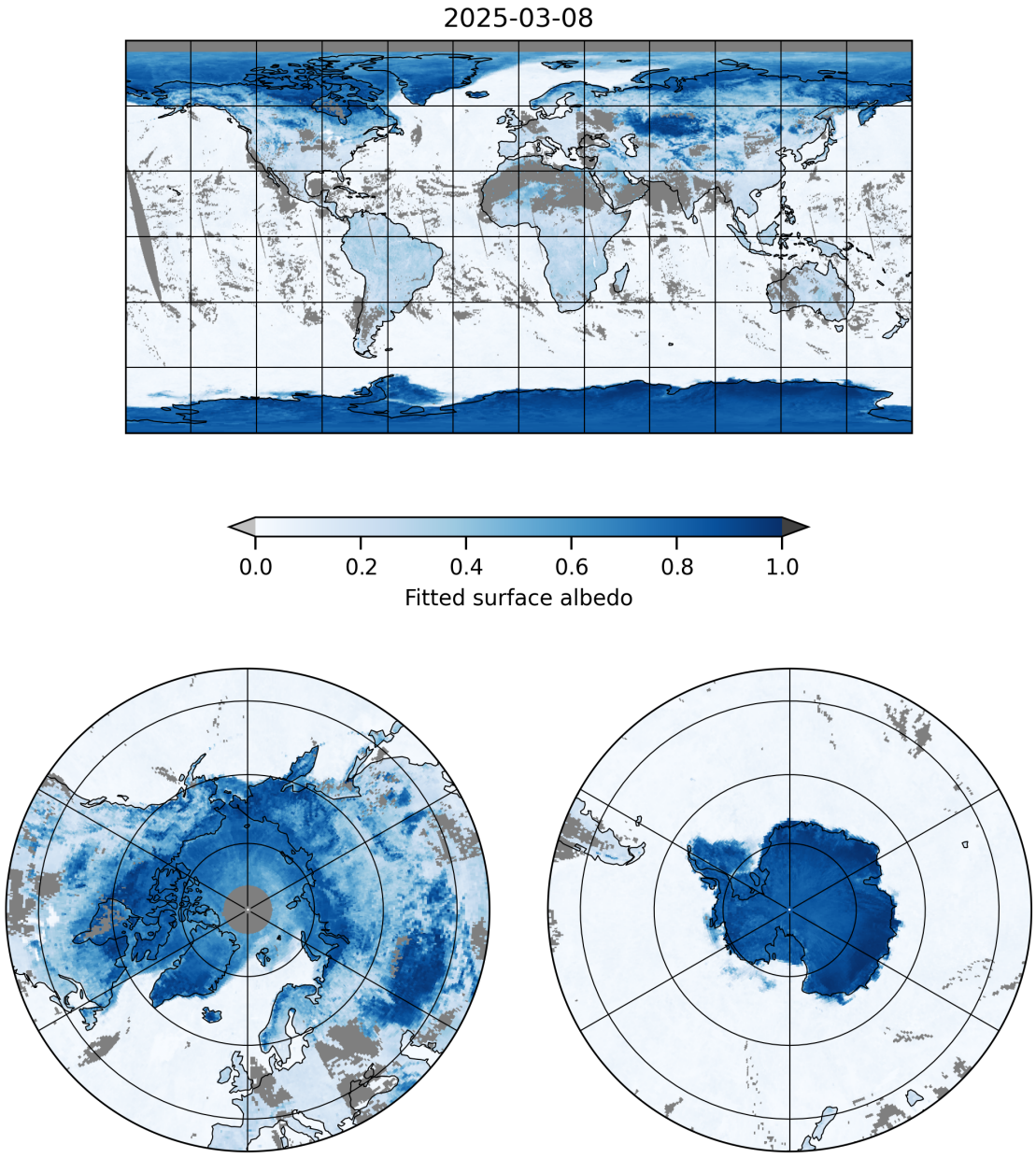

Figure 10: Map of “Fitted surface albedo” for 2025-03-08 to 2025-03-09

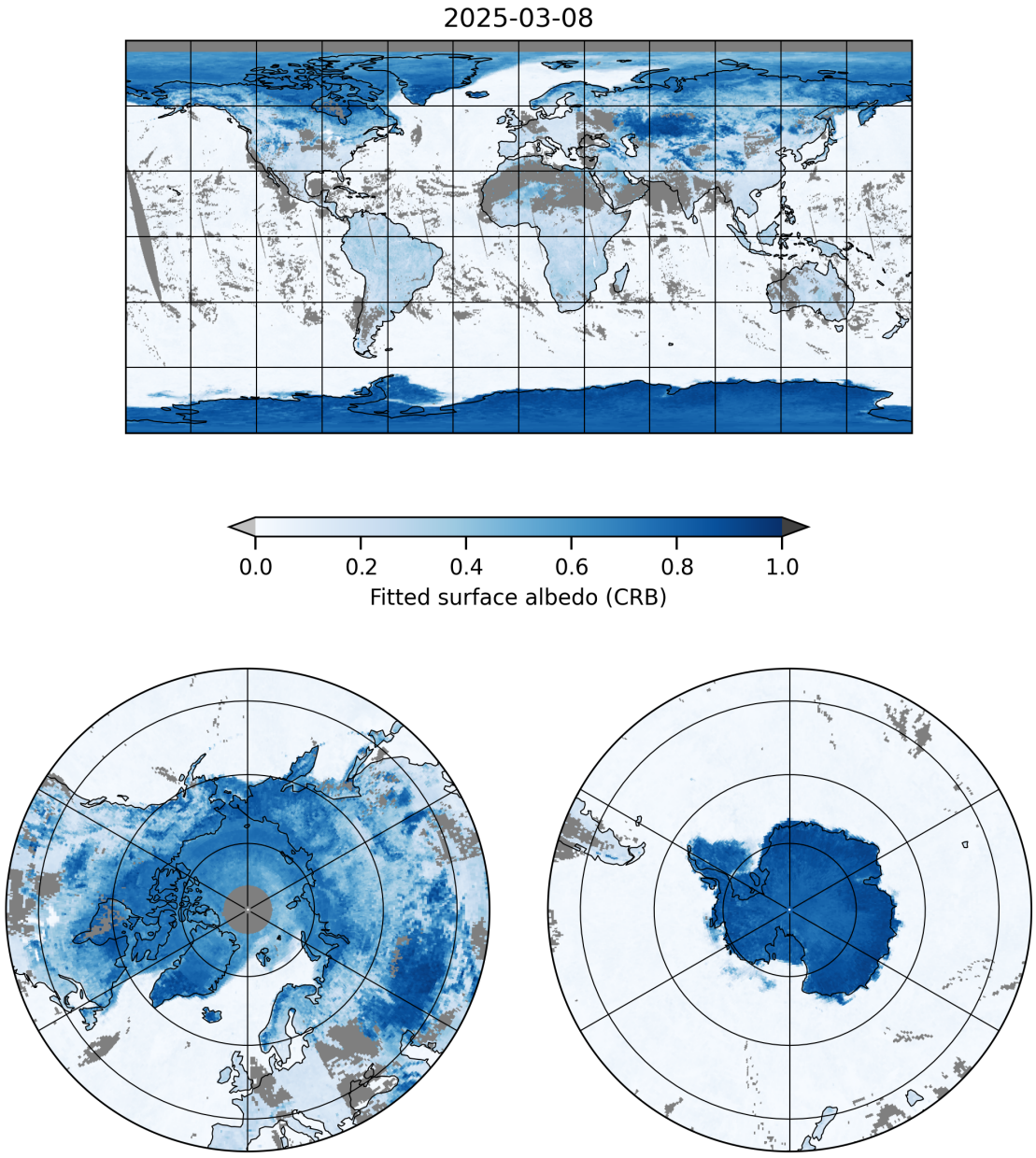

Figure 11: Map of “Fitted surface albedo (CRB)” for 2025-03-08 to 2025-03-09

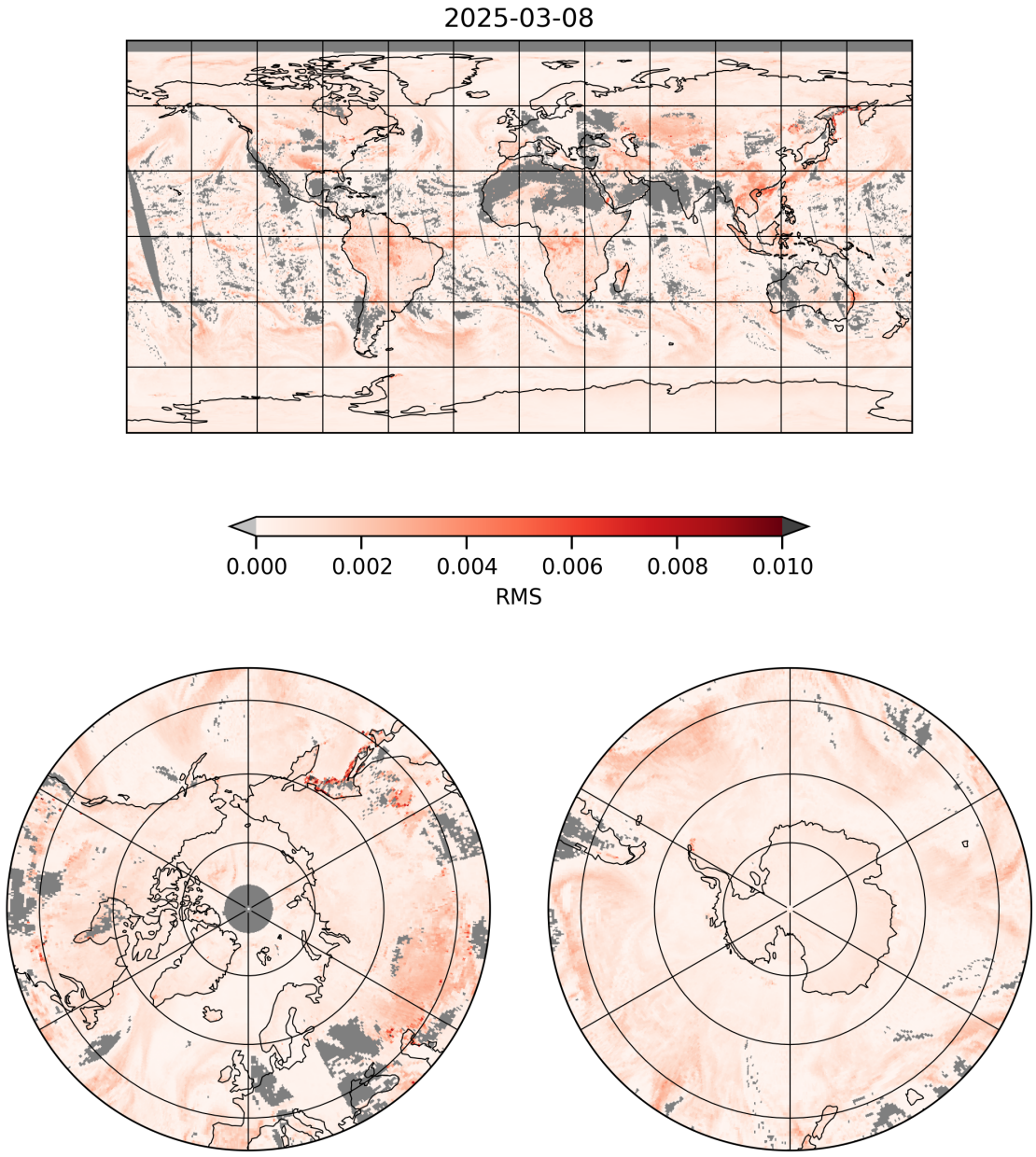

Figure 12: Map of “RMS” for 2025-03-08 to 2025-03-09

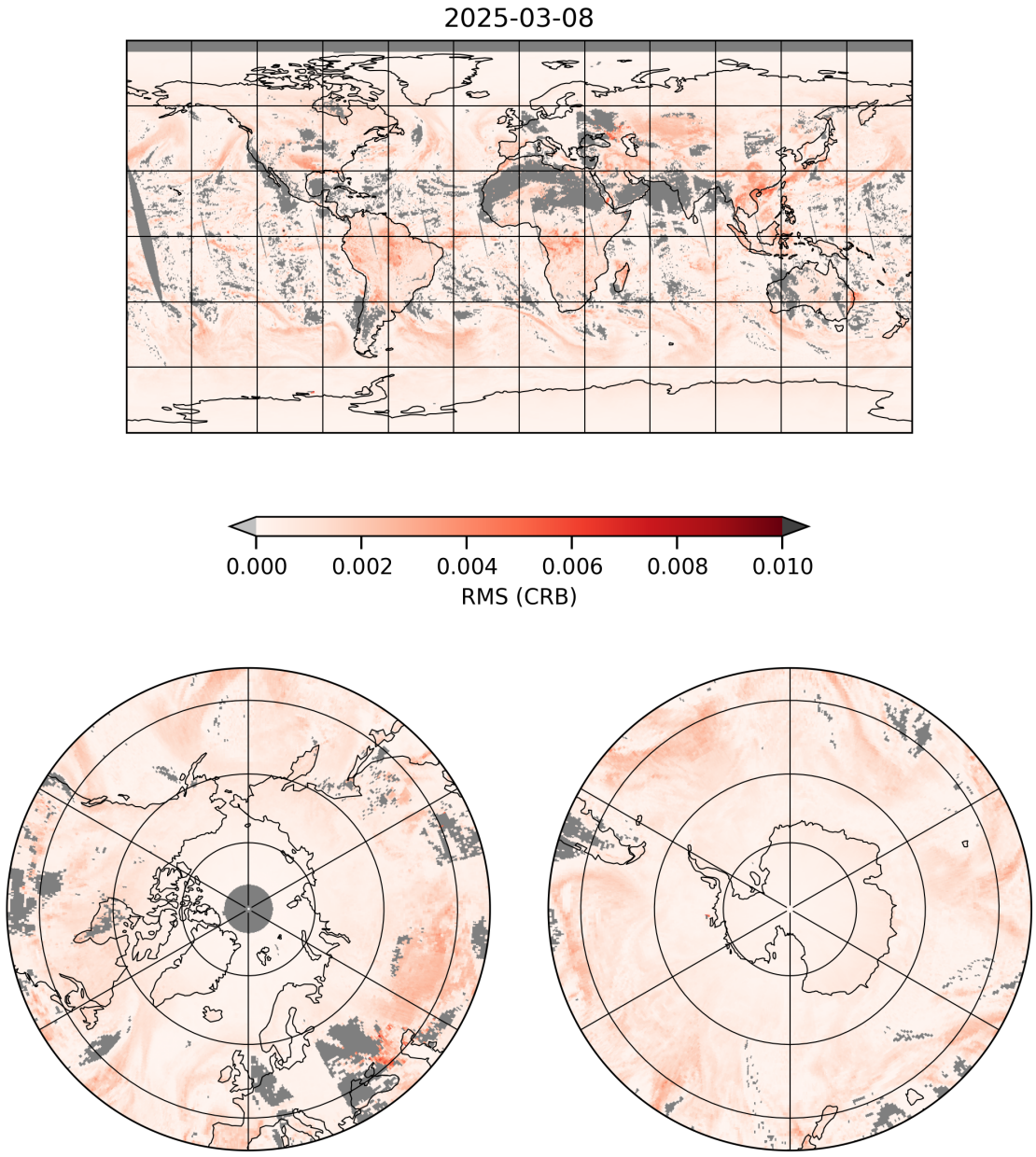

Figure 13: Map of “RMS (CRB)” for 2025-03-08 to 2025-03-09

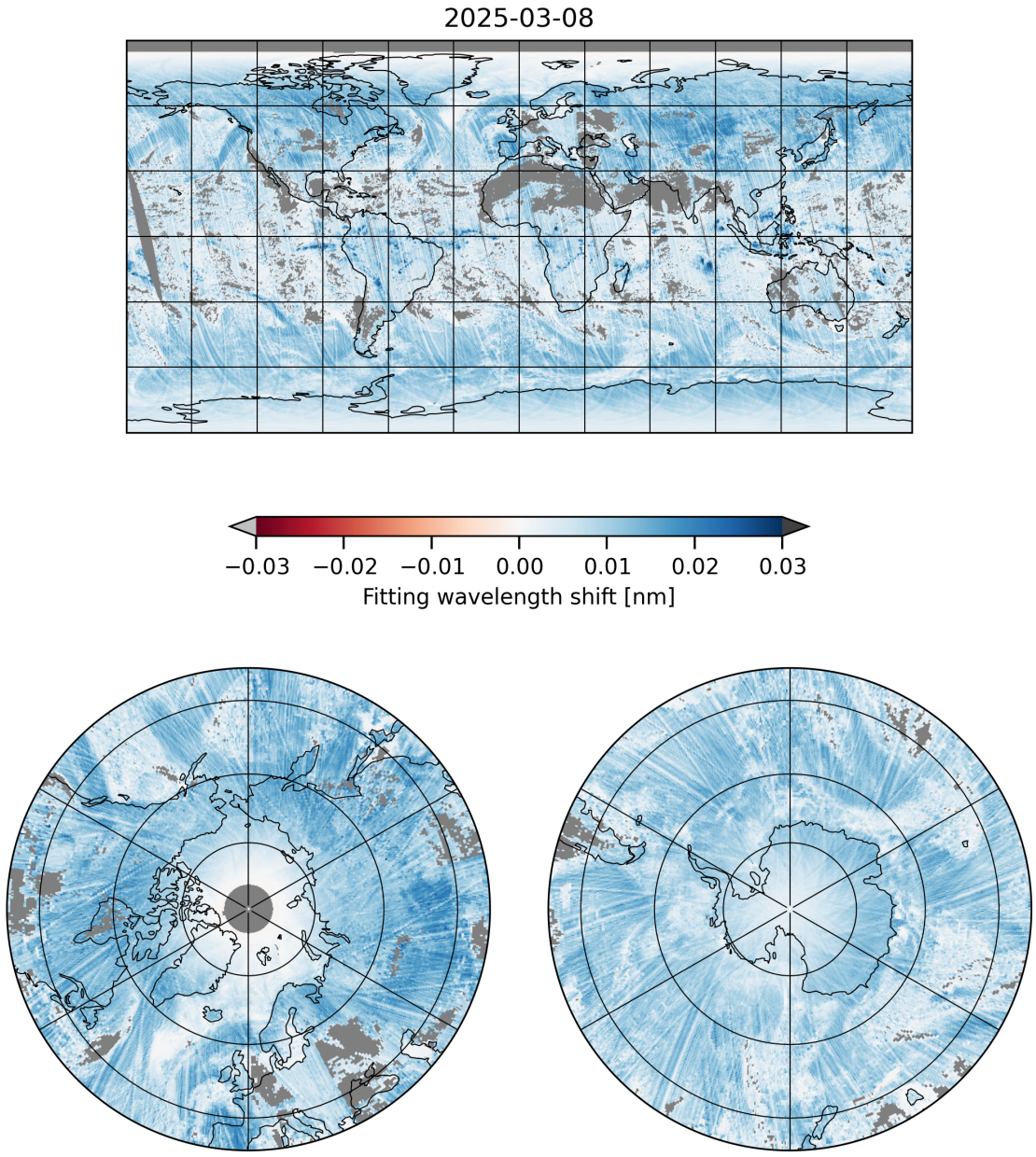

Figure 14: Map of “Fitting wavelength shift” for 2025-03-08 to 2025-03-09

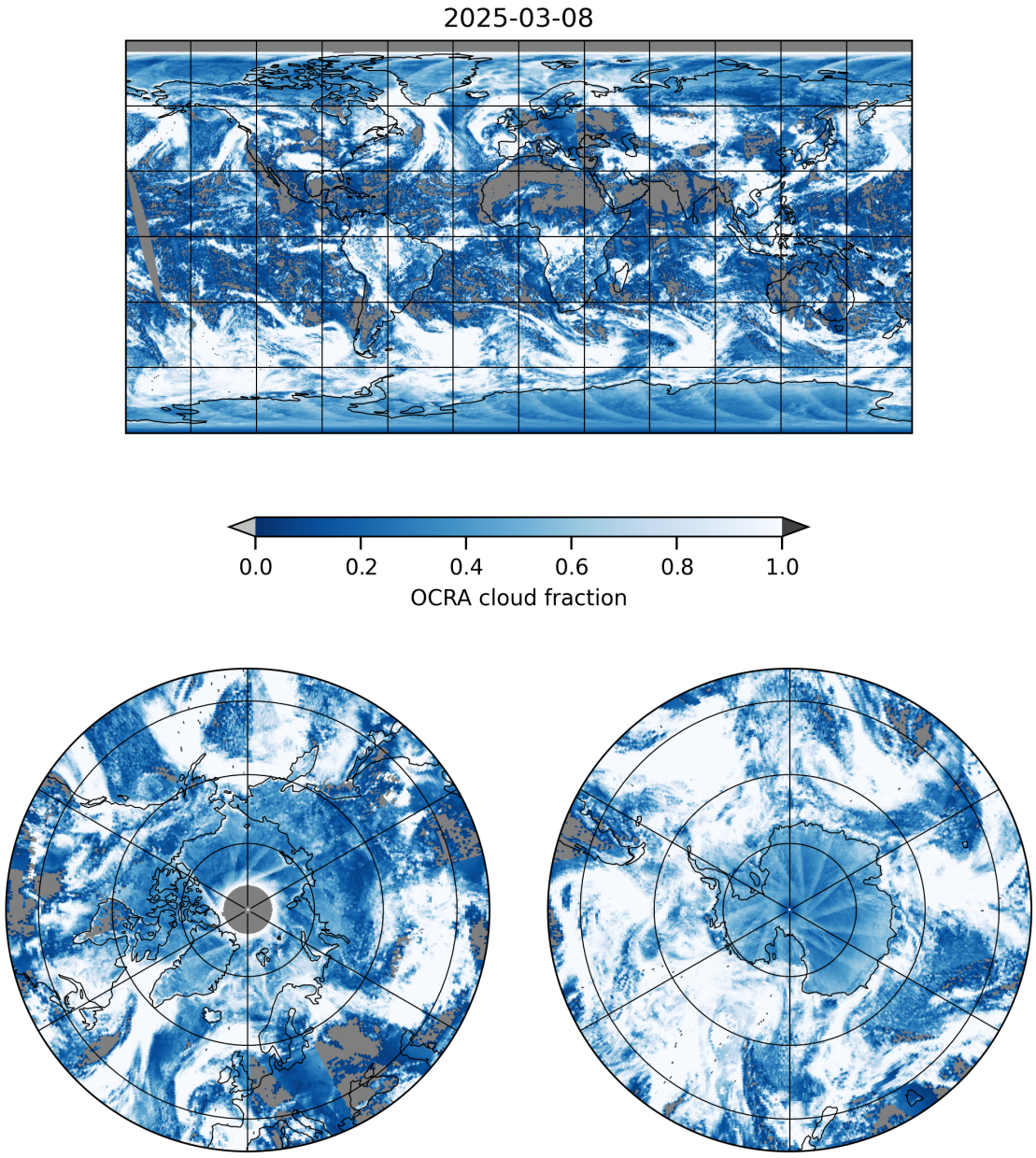

Figure 15: Map of “OCRA cloud fraction” for 2025-03-08 to 2025-03-09

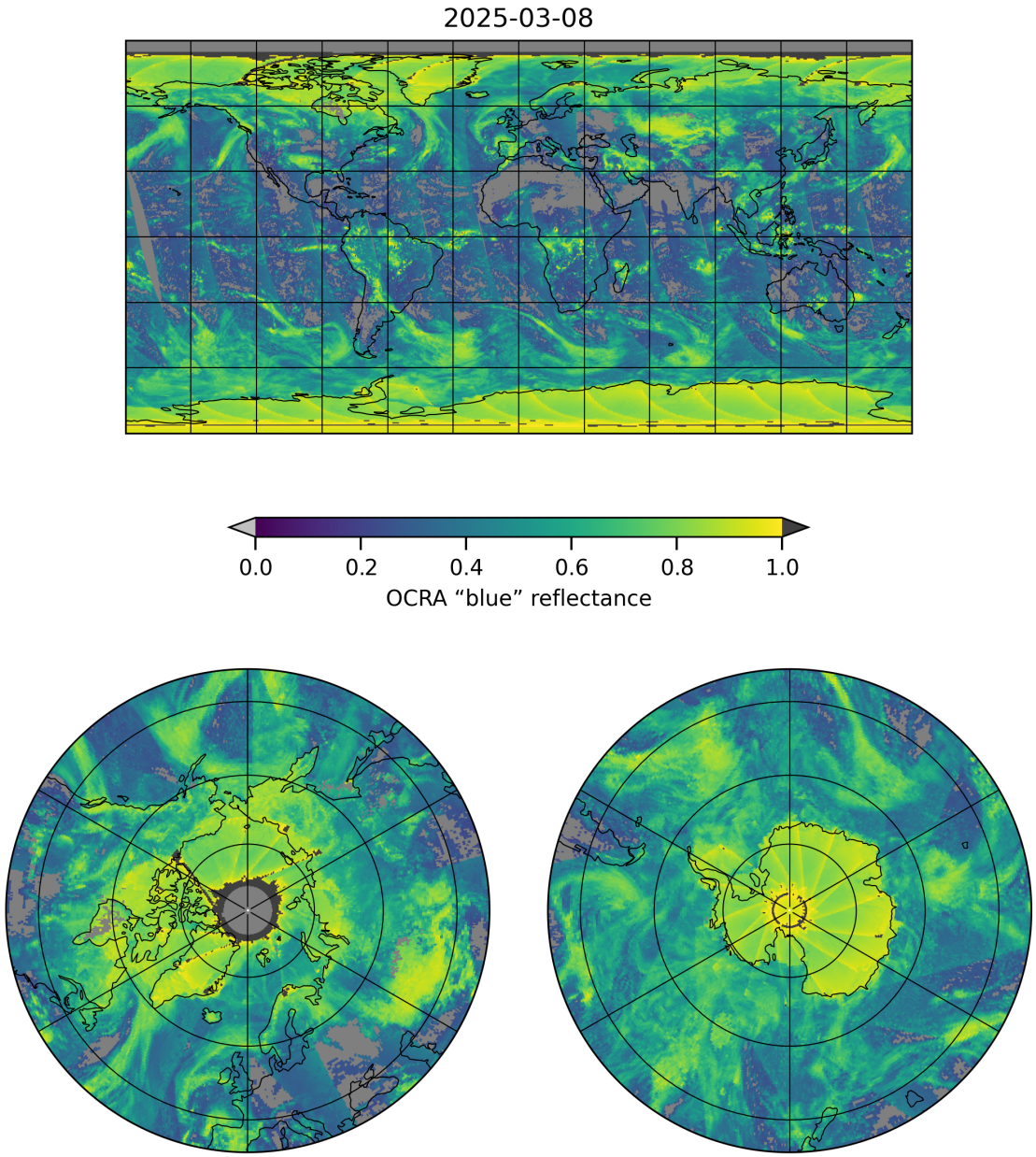

Figure 16: Map of “OCRA “blue” reflectance” for 2025-03-08 to 2025-03-09

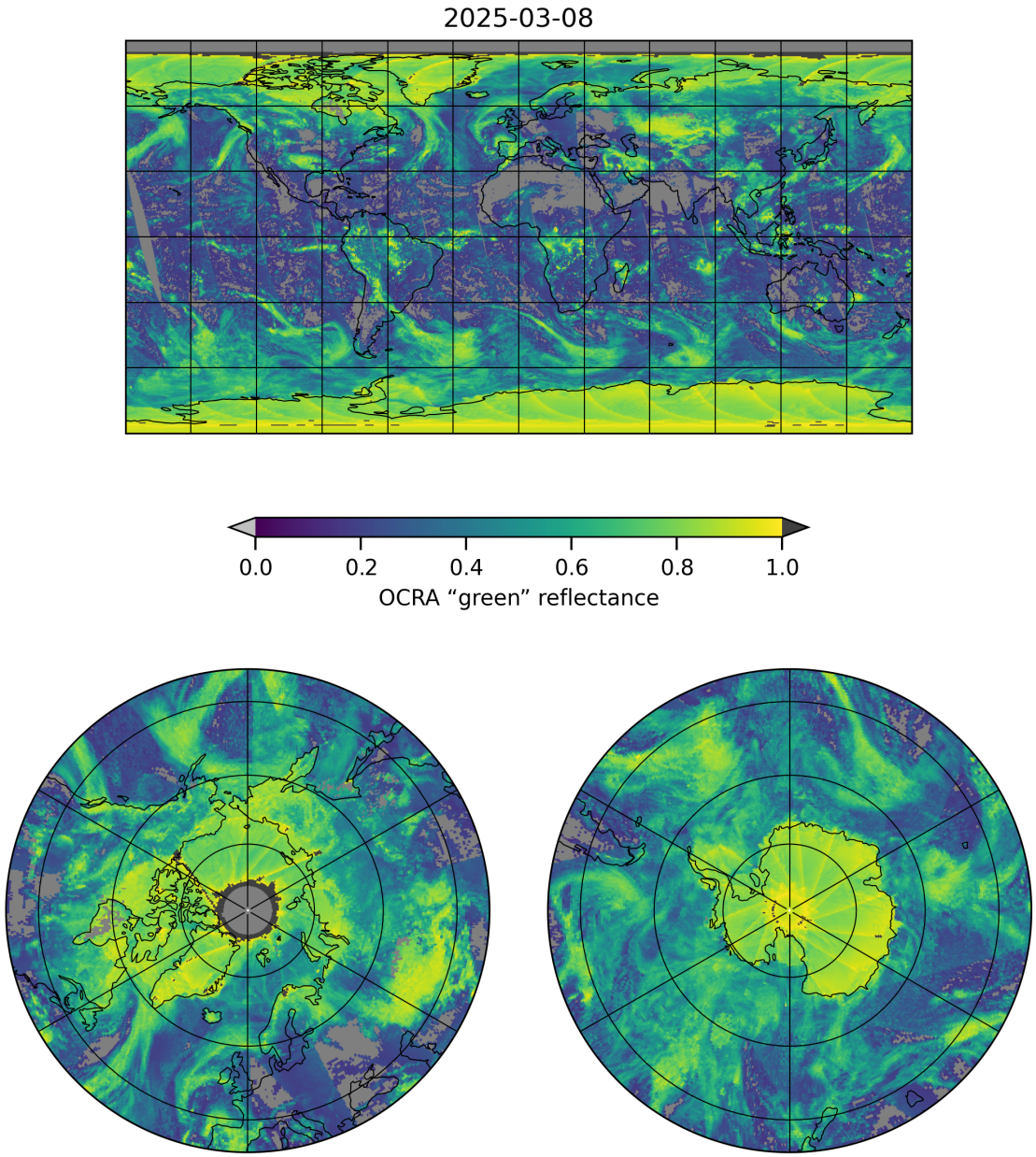

Figure 17: Map of “OCRA “green” reflectance” for 2025-03-08 to 2025-03-09

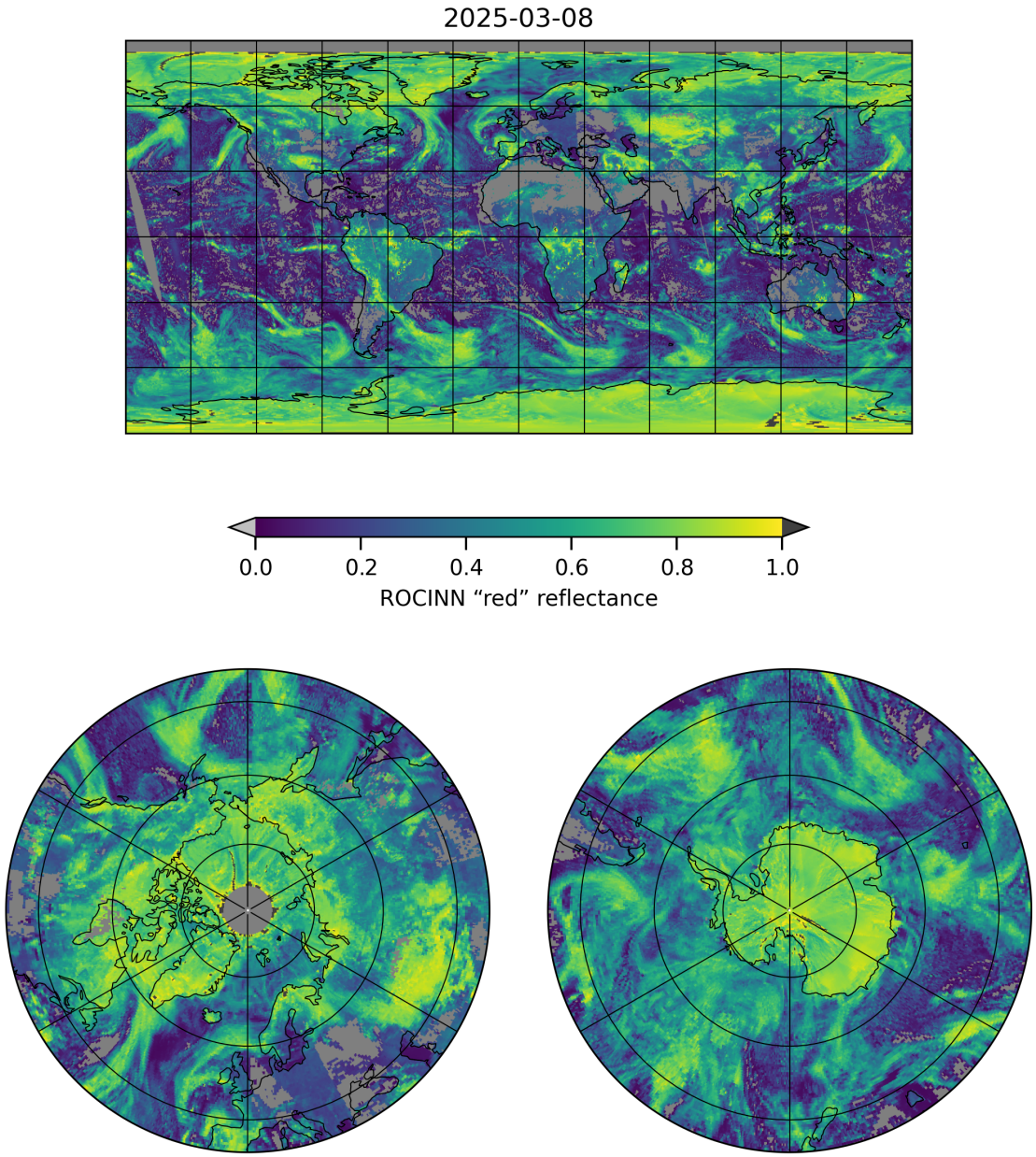

Figure 18: Map of “ROCINN “red” reflectance” for 2025-03-08 to 2025-03-09

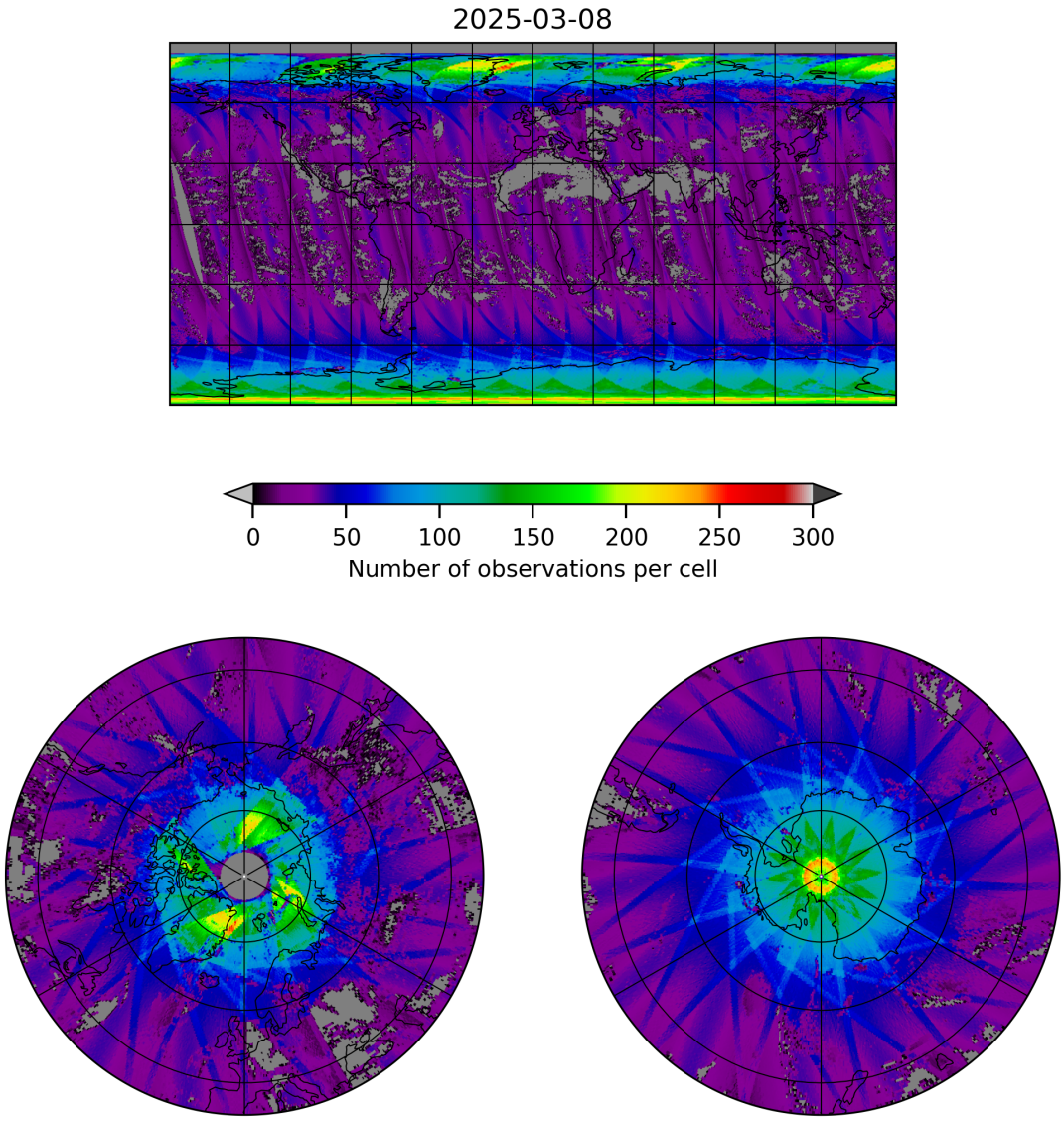

Figure 19: Map of the number of observations for 2025-03-08 to 2025-03-09

7 Zonal average

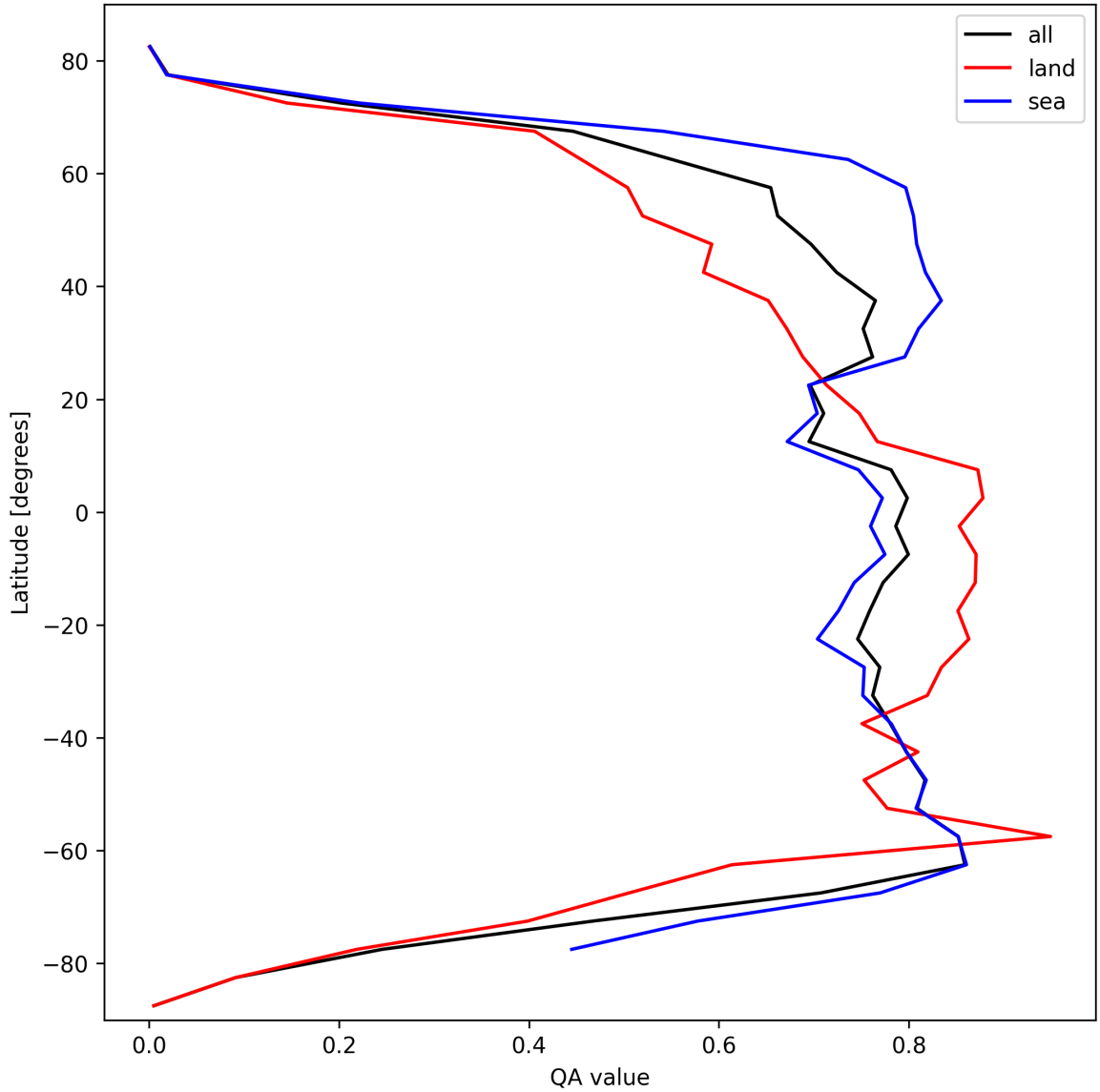

Figure 20: Zonal average of “QA value” for 2025-03-08 to 2025-03-09.

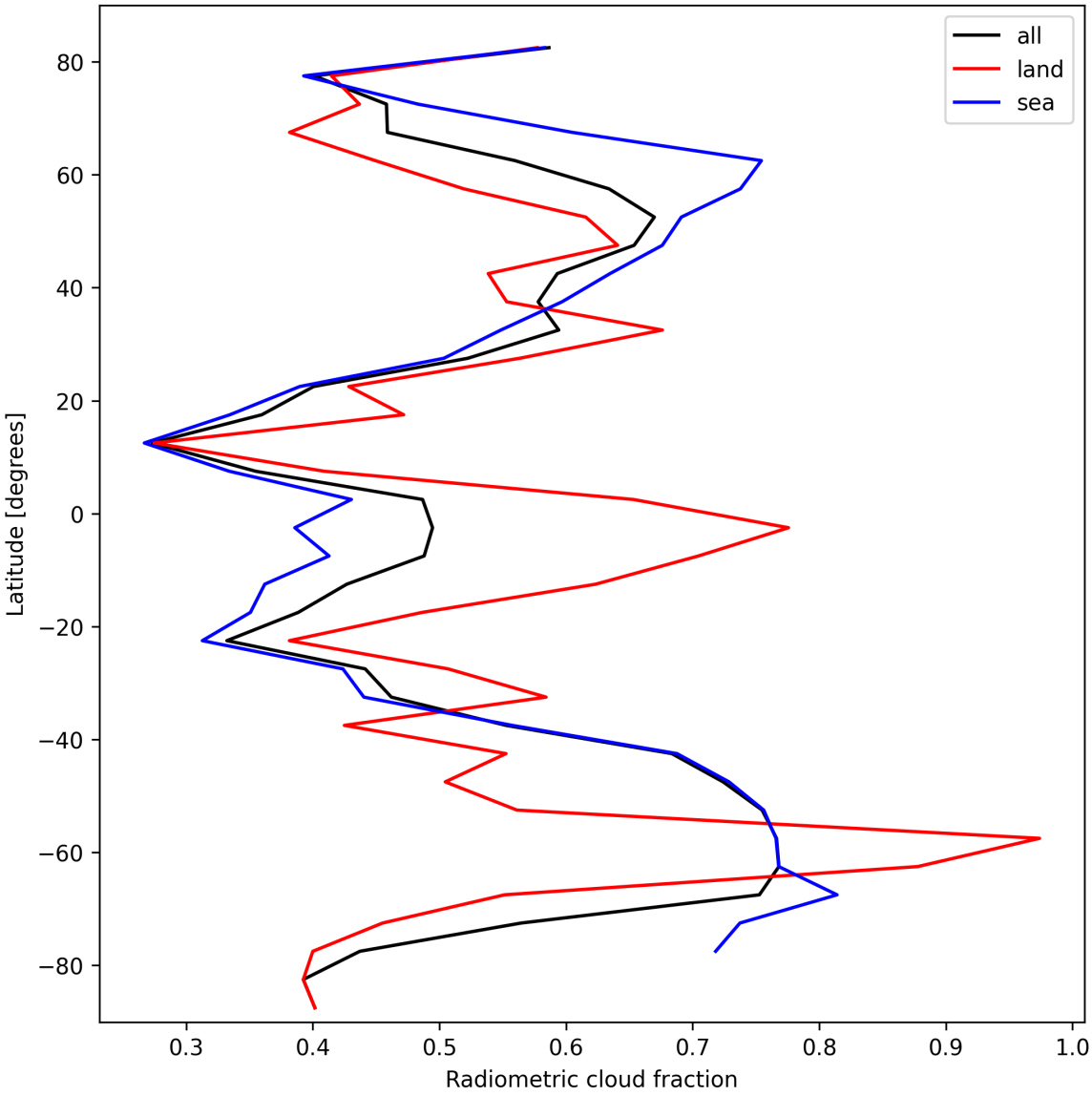

Figure 21: Zonal average of “Radiometric cloud fraction” for 2025-03-08 to 2025-03-09.

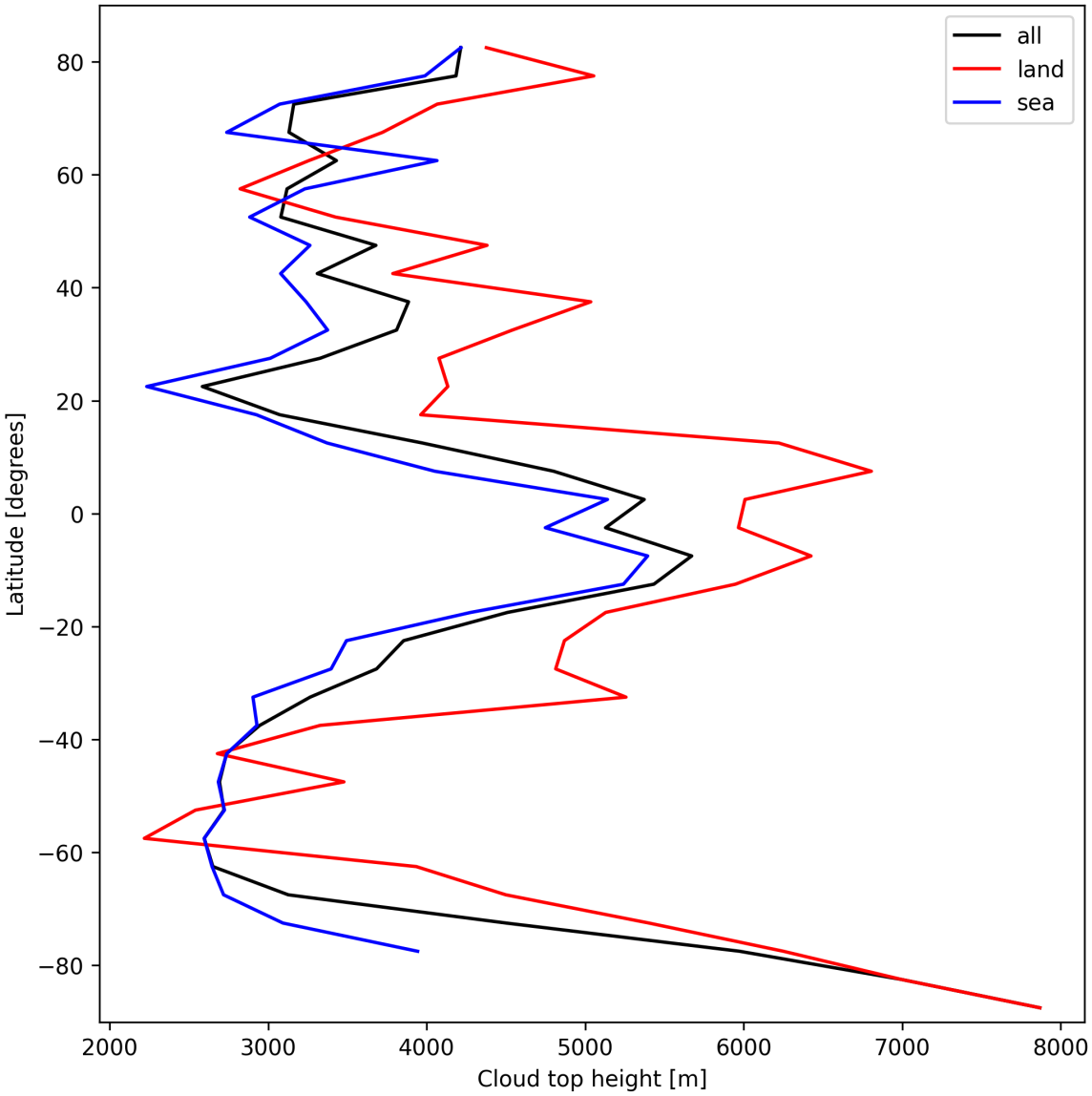

Figure 22: Zonal average of “Cloud top height” for 2025-03-08 to 2025-03-09.

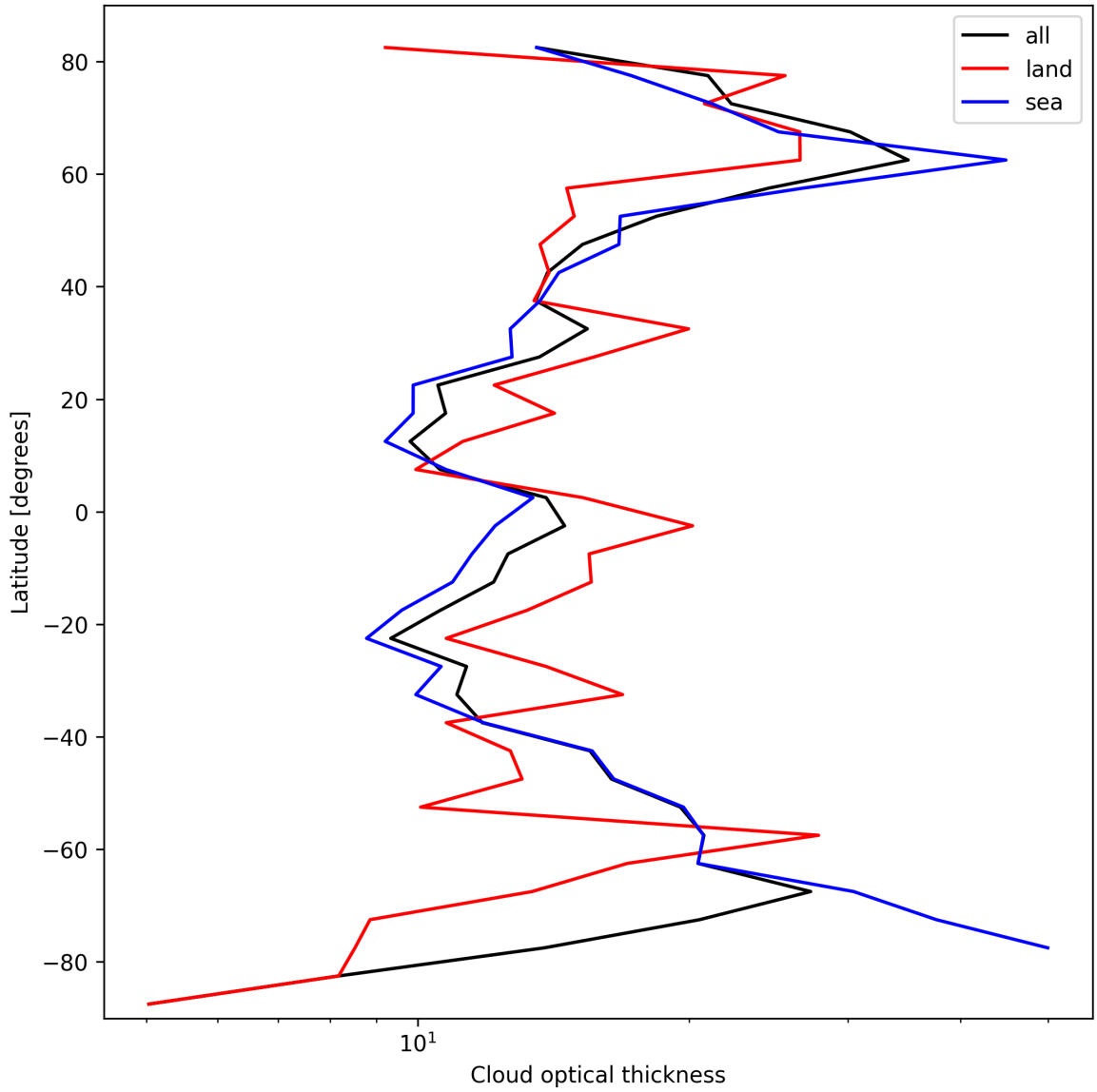

Figure 23: Zonal average of “Cloud optical thickness” for 2025-03-08 to 2025-03-09.

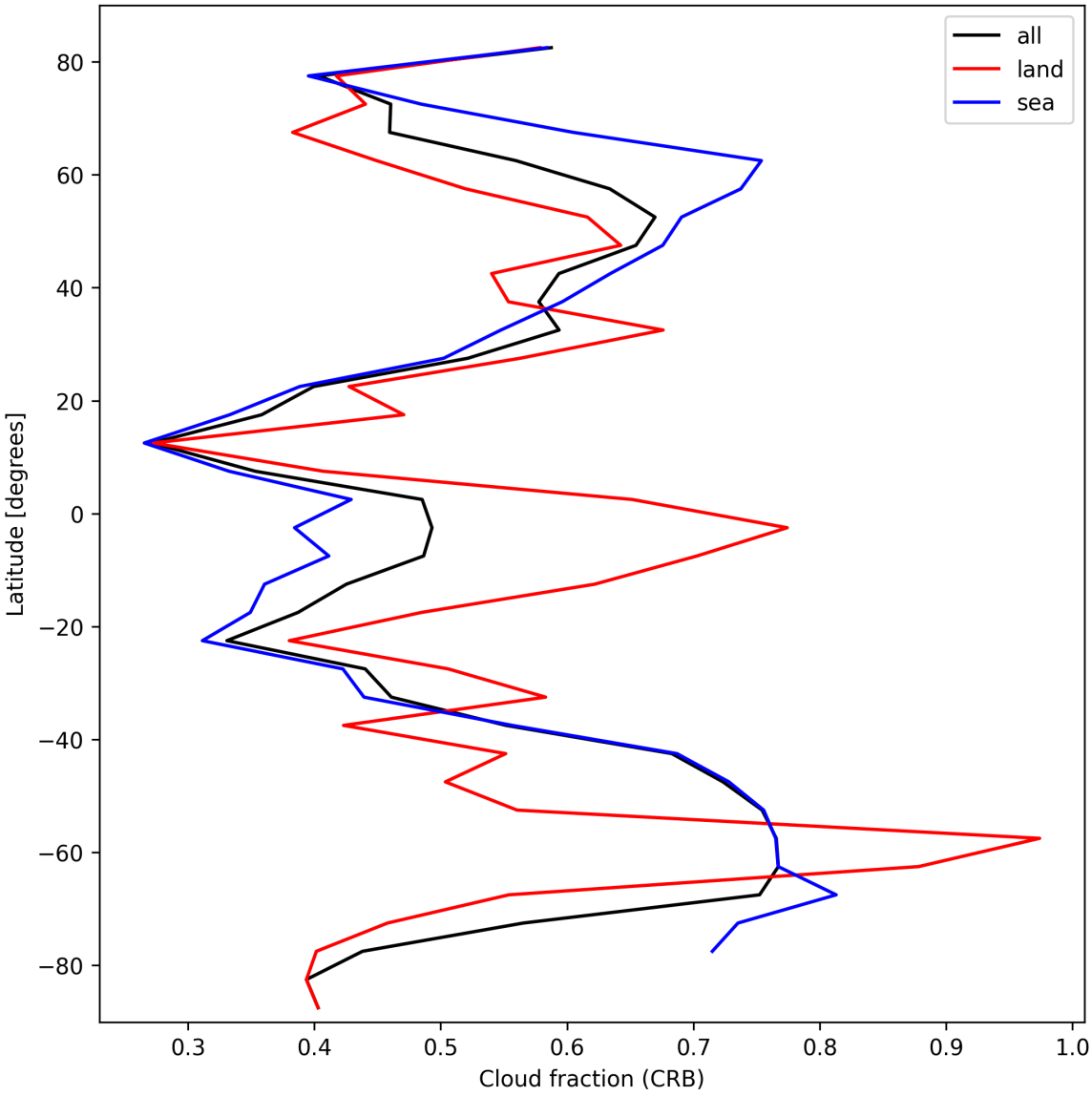

Figure 24: Zonal average of “Cloud fraction (CRB)” for 2025-03-08 to 2025-03-09.

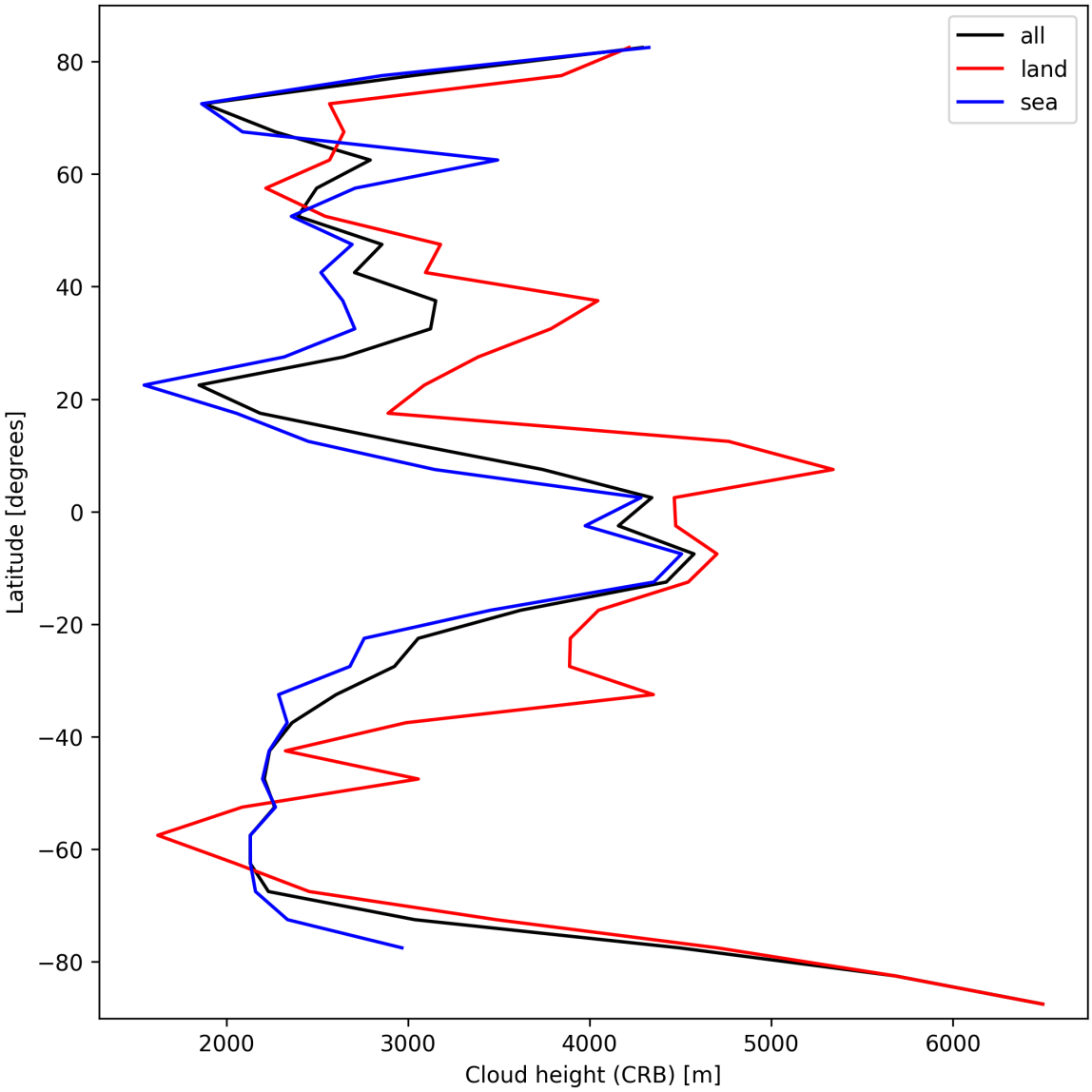

Figure 25: Zonal average of “Cloud height (CRB)” for 2025-03-08 to 2025-03-09.

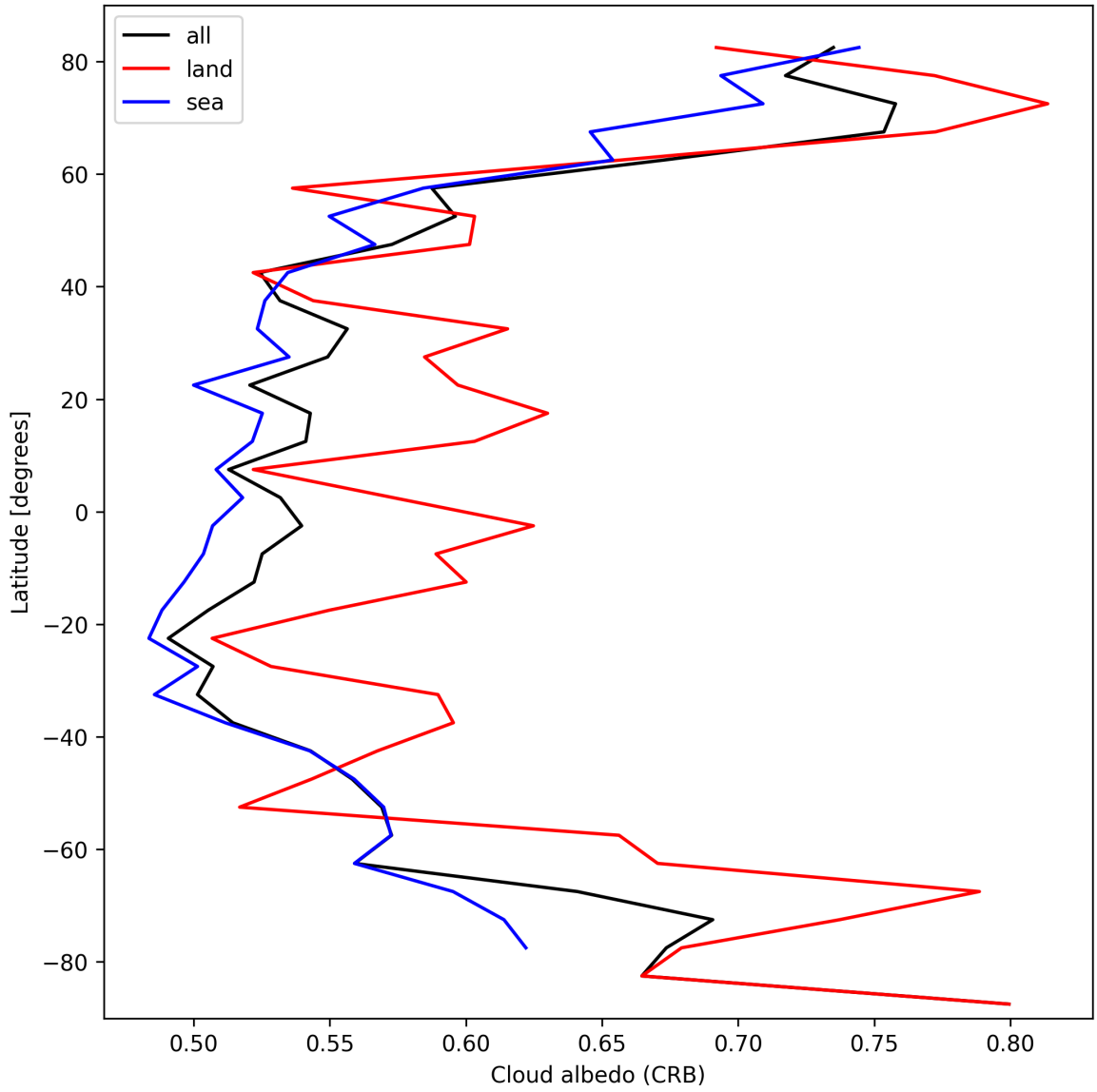

Figure 26: Zonal average of “Cloud albedo (CRB)” for 2025-03-08 to 2025-03-09.

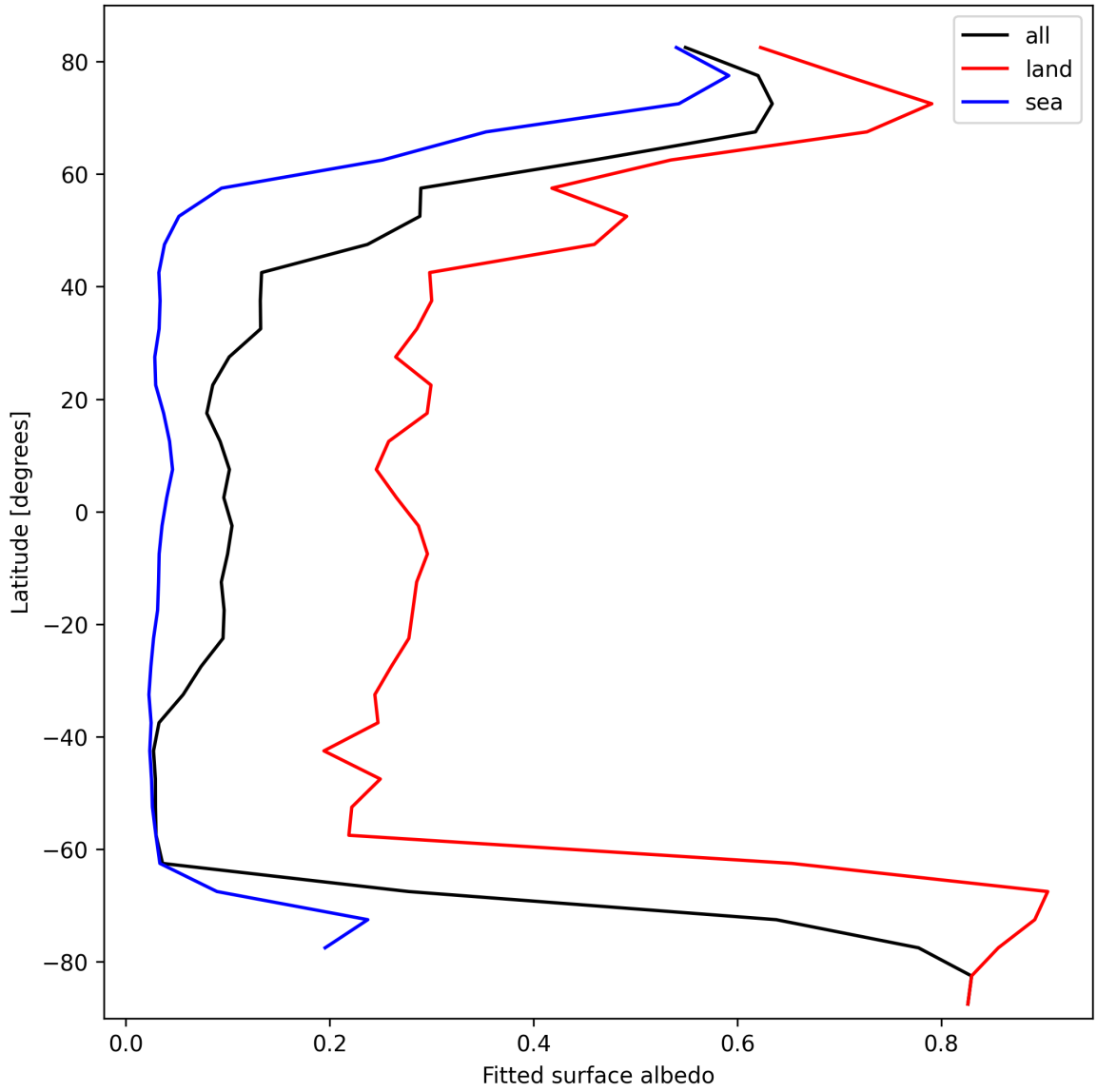

Figure 27: Zonal average of “Fitted surface albedo” for 2025-03-08 to 2025-03-09.

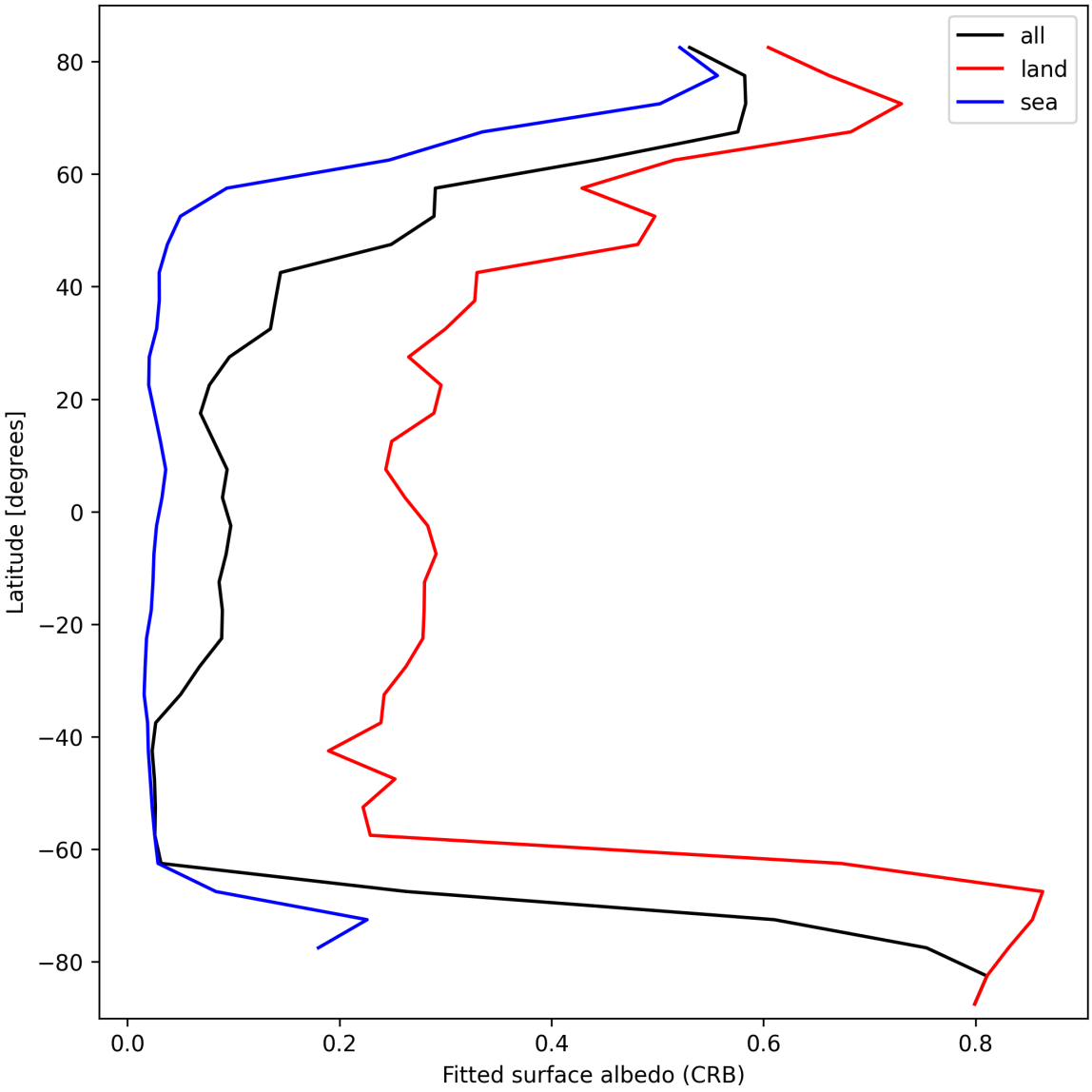

Figure 28: Zonal average of “Fitted surface albedo (CRB)” for 2025-03-08 to 2025-03-09.

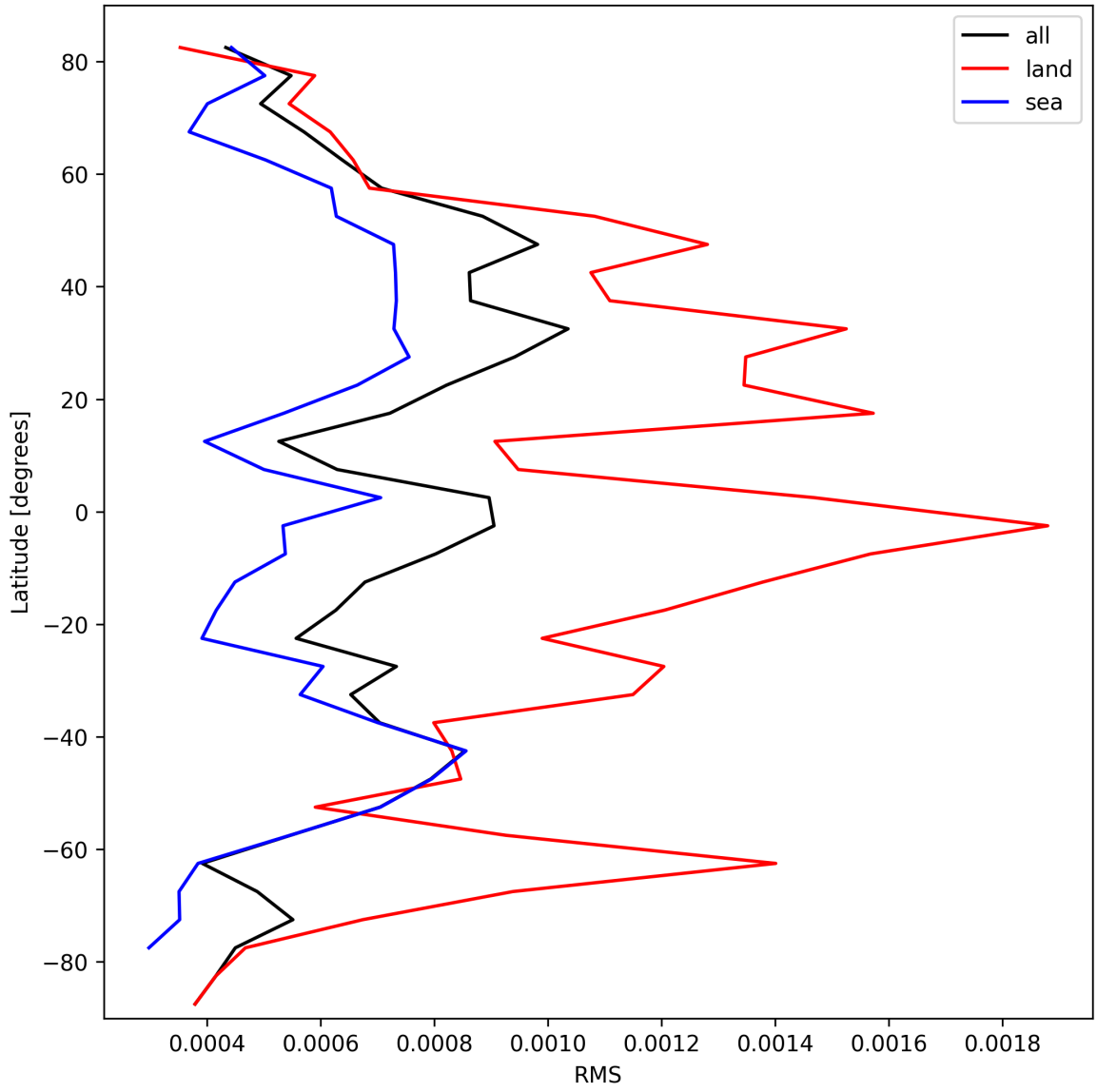

Figure 29: Zonal average of “RMS” for 2025-03-08 to 2025-03-09.

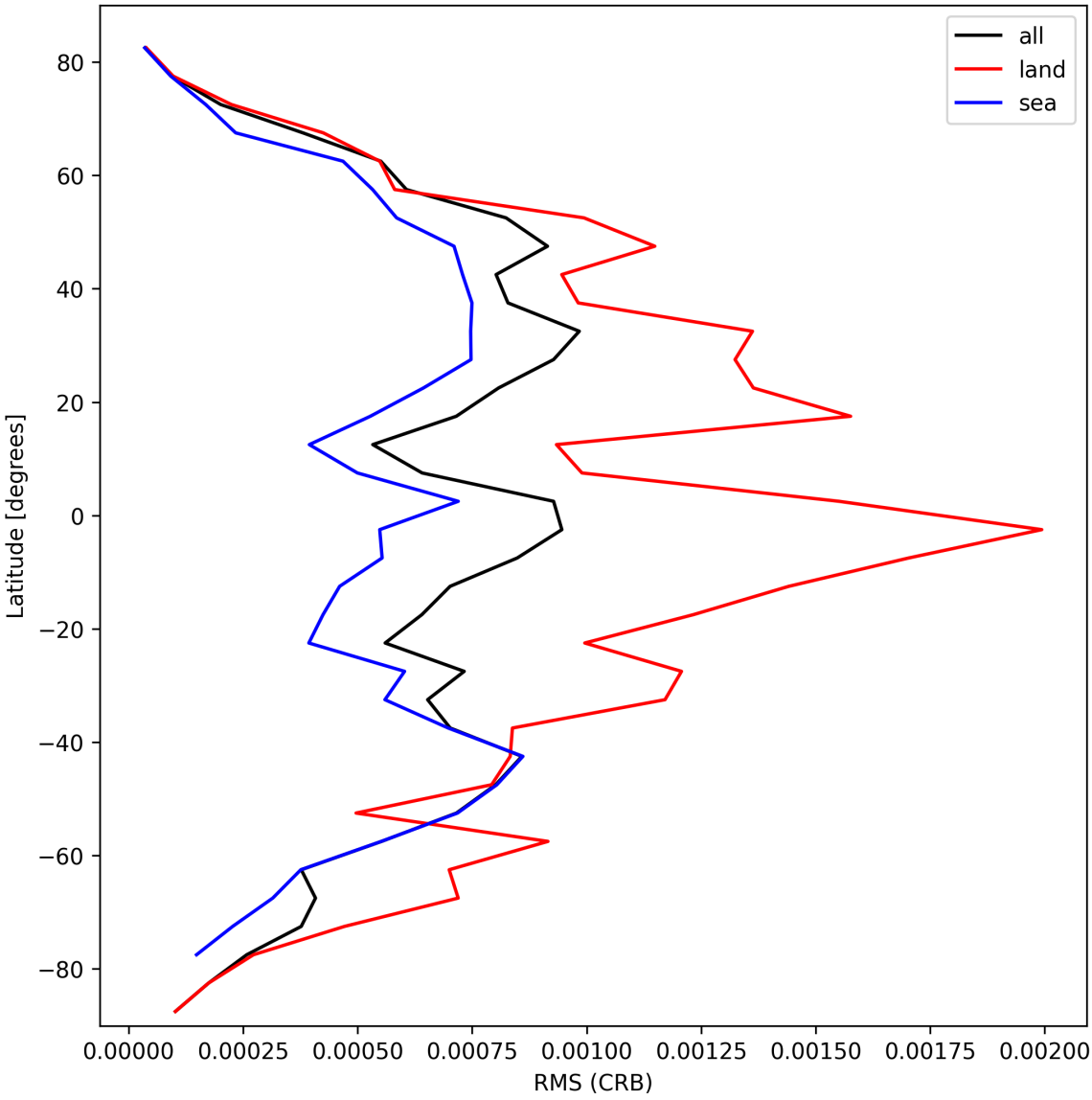

Figure 30: Zonal average of “RMS (CRB)” for 2025-03-08 to 2025-03-09.

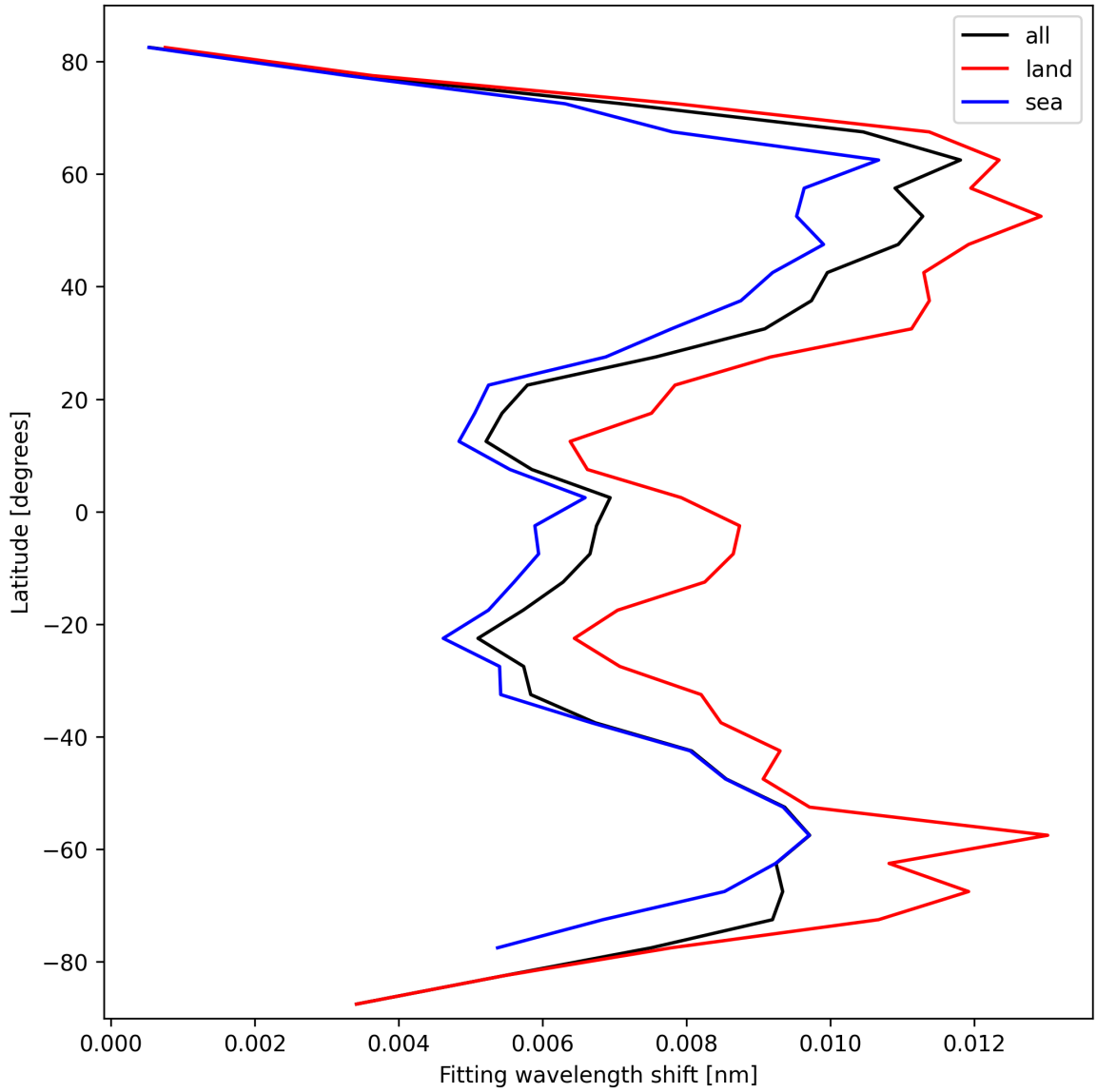

Figure 31: Zonal average of “Fitting wavelength shift” for 2025-03-08 to 2025-03-09.

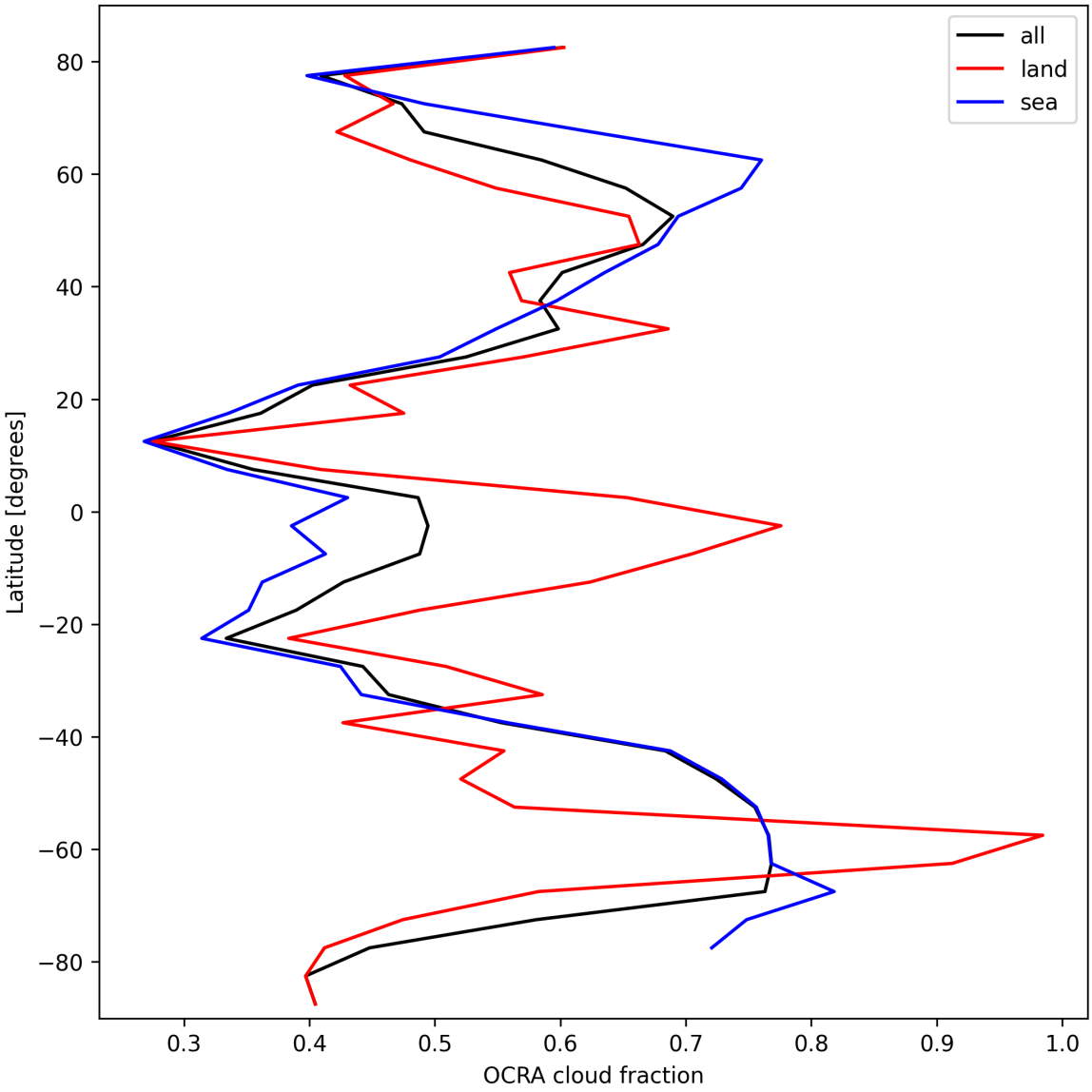

Figure 32: Zonal average of “OCRA cloud fraction” for 2025-03-08 to 2025-03-09.

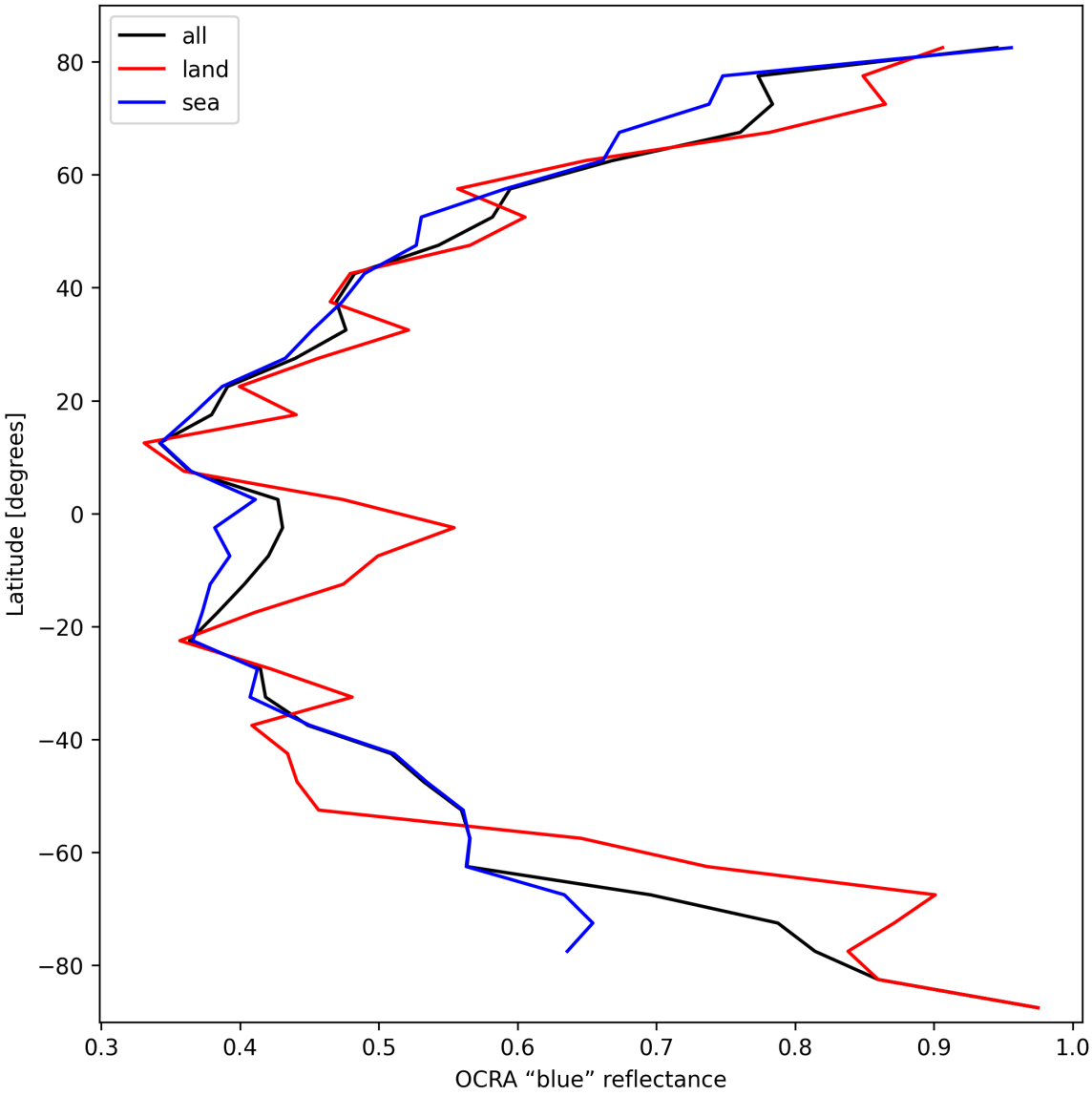

Figure 33: Zonal average of “OCRA “blue” reflectance” for 2025-03-08 to 2025-03-09.

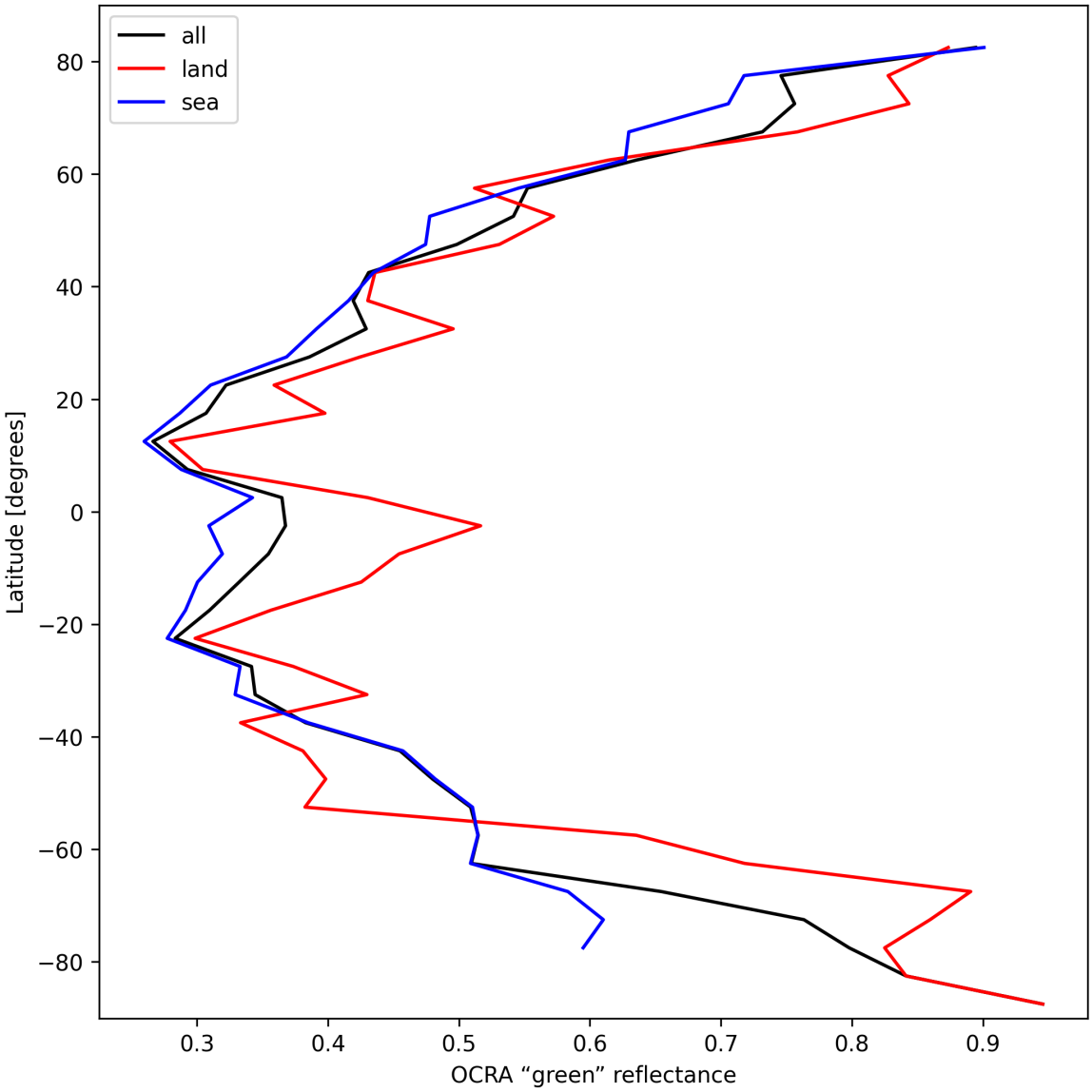

Figure 34: Zonal average of “OCRA “green” reflectance” for 2025-03-08 to 2025-03-09.

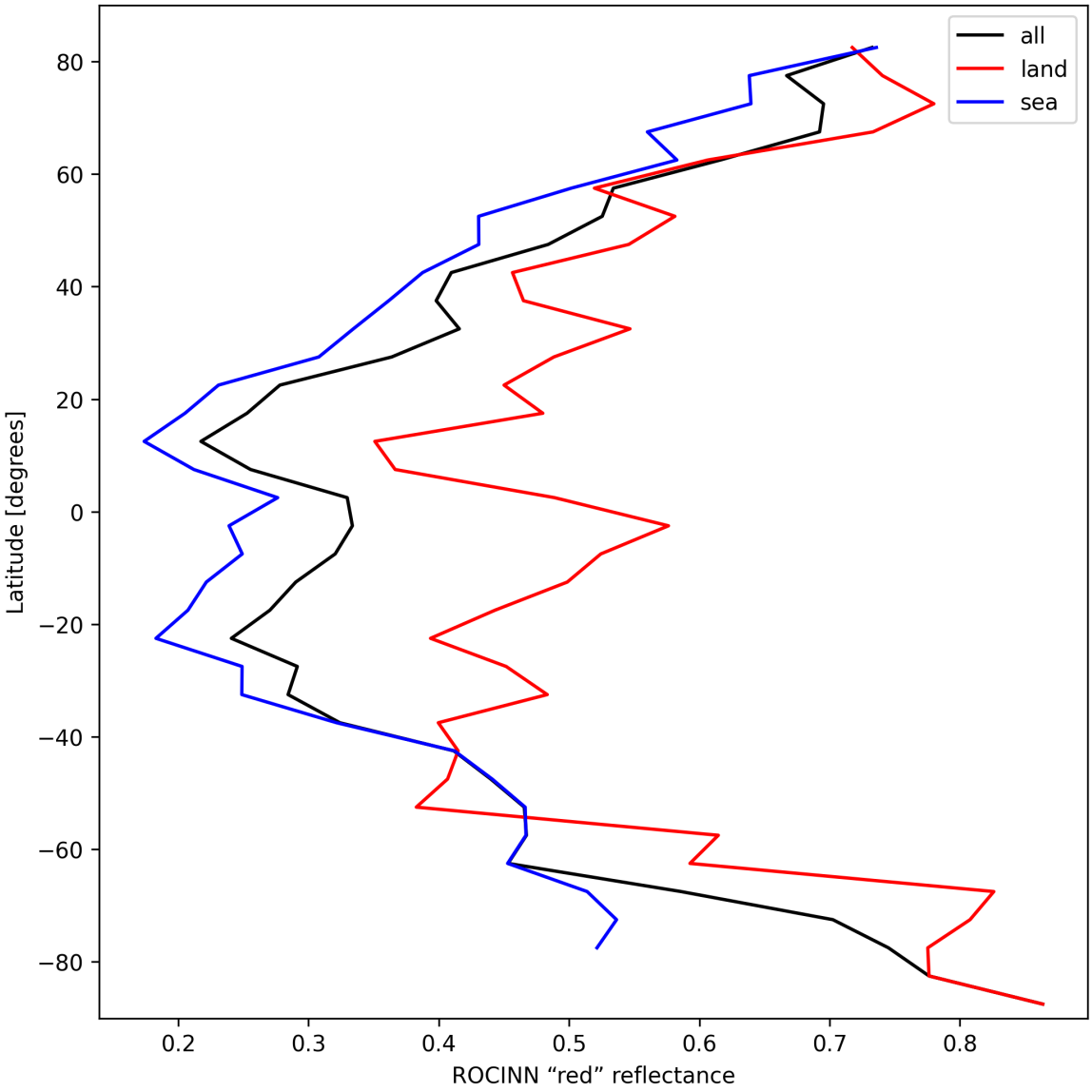

Figure 35: Zonal average of “ROCINN “red” reflectance” for 2025-03-08 to 2025-03-09.

8 Histograms

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

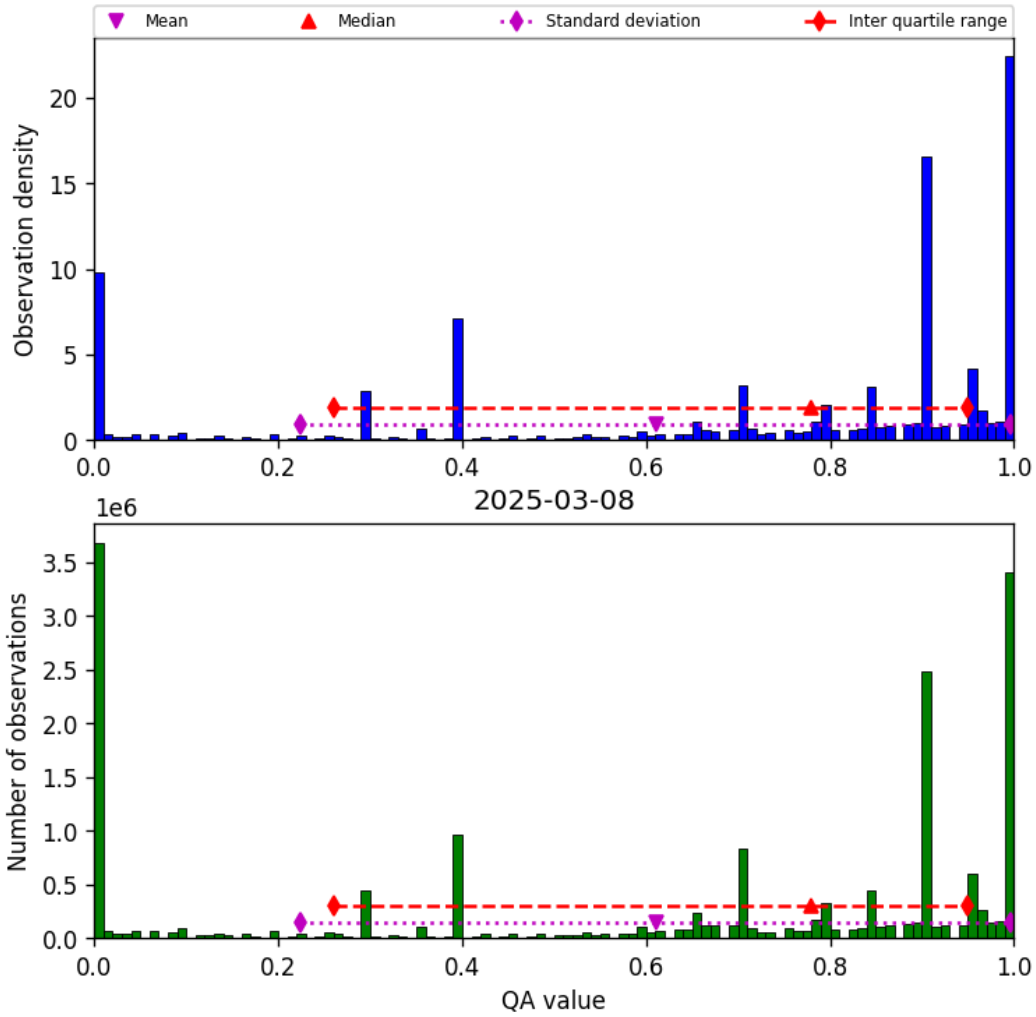

Figure 36: Histogram of “QA value” for 2025-03-08 to 2025-03-09

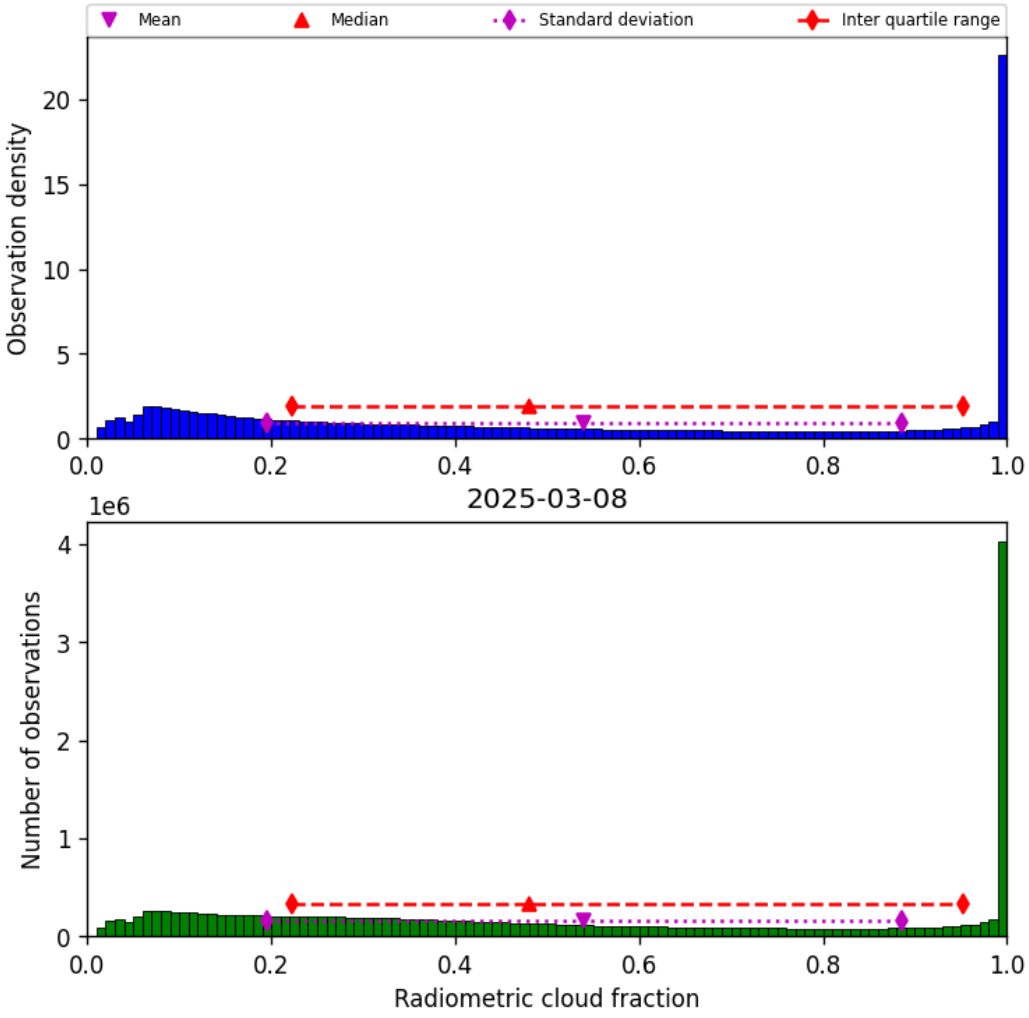

Figure 37: Histogram of “Radiometric cloud fraction” for 2025-03-08 to 2025-03-09

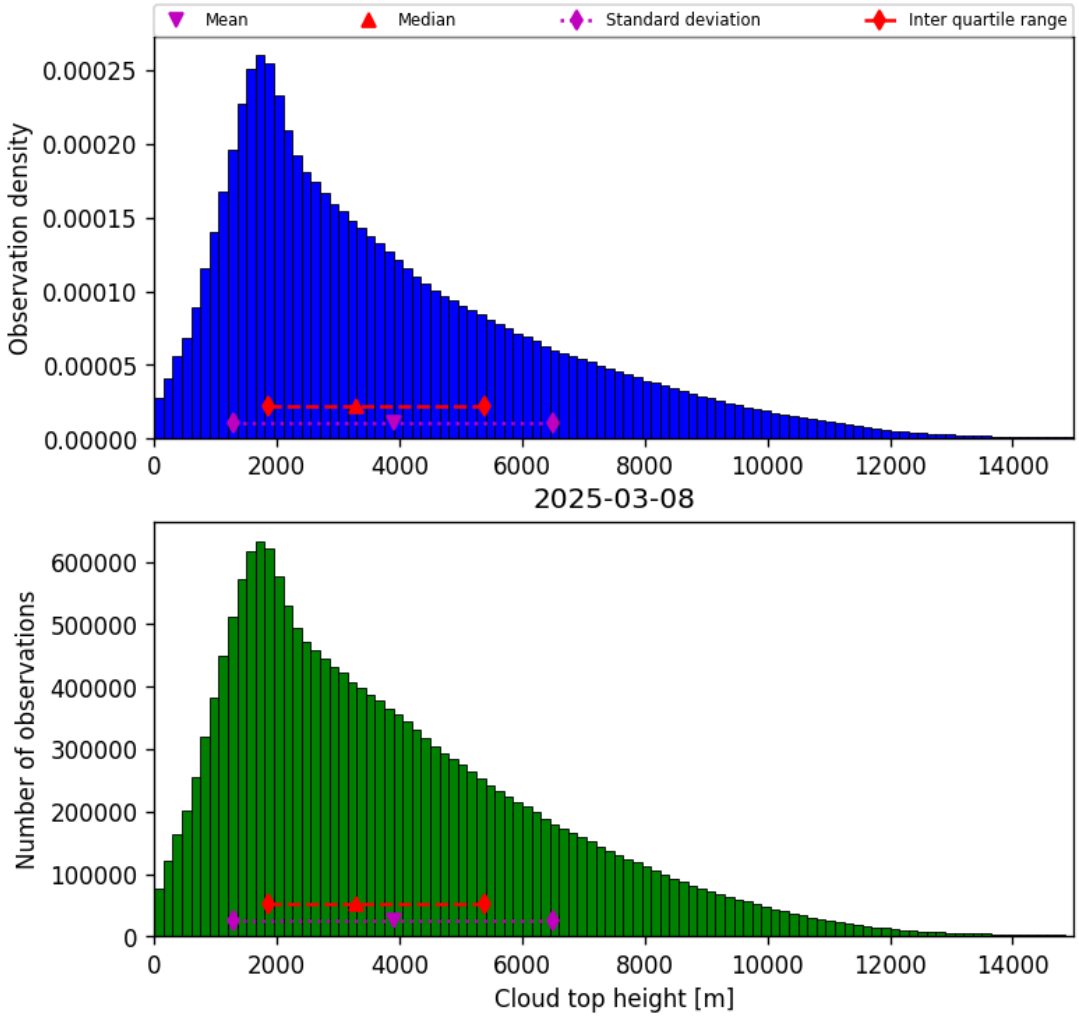

Figure 38: Histogram of “Cloud top height” for 2025-03-08 to 2025-03-09

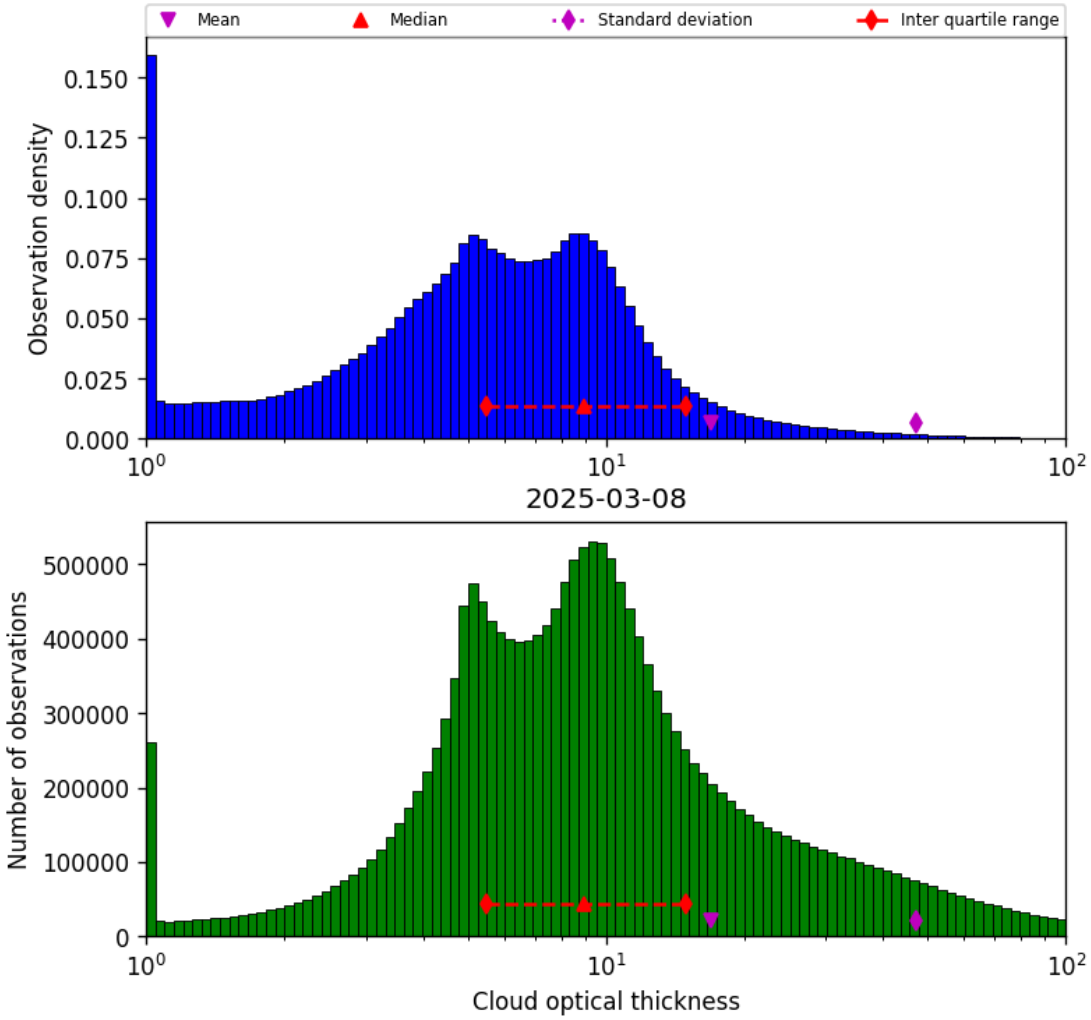

Figure 39: Histogram of “Cloud optical thickness” for 2025-03-08 to 2025-03-09

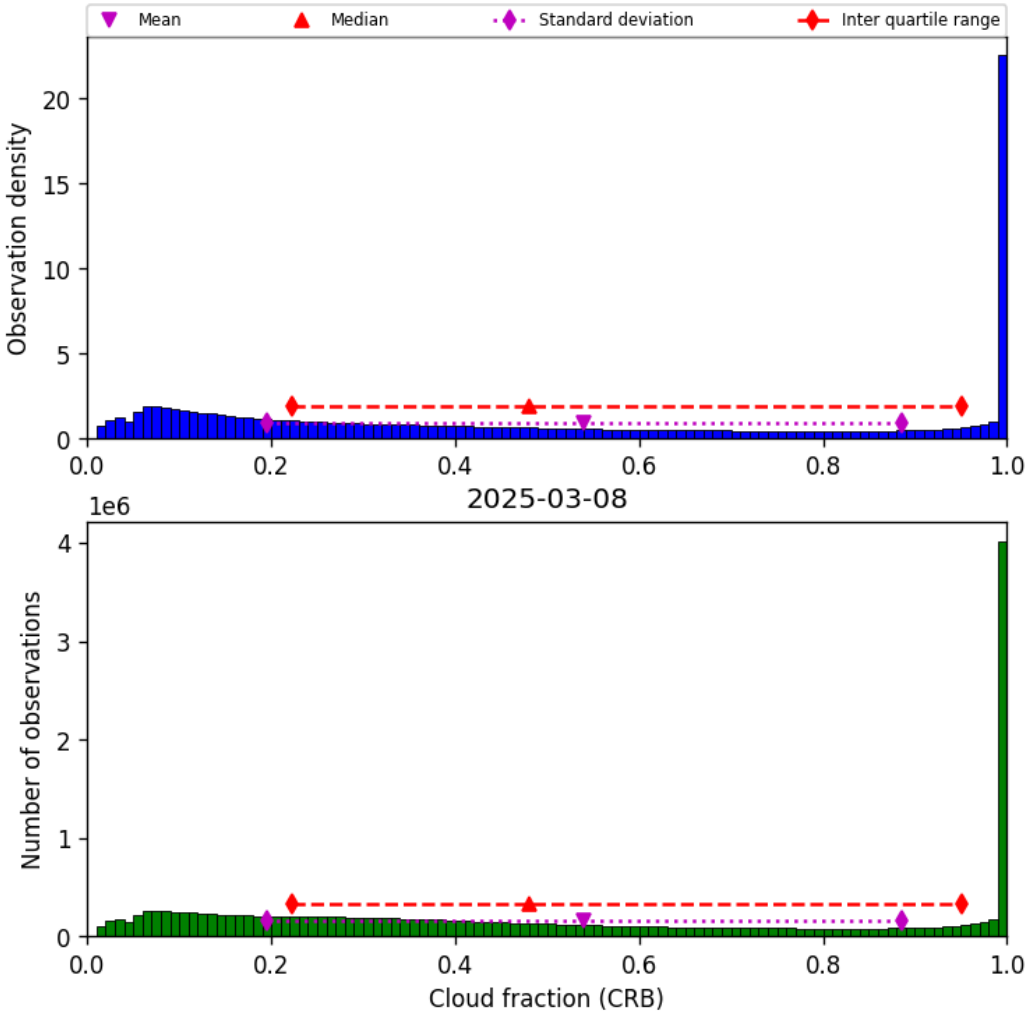

Figure 40: Histogram of “Cloud fraction (CRB)” for 2025-03-08 to 2025-03-09

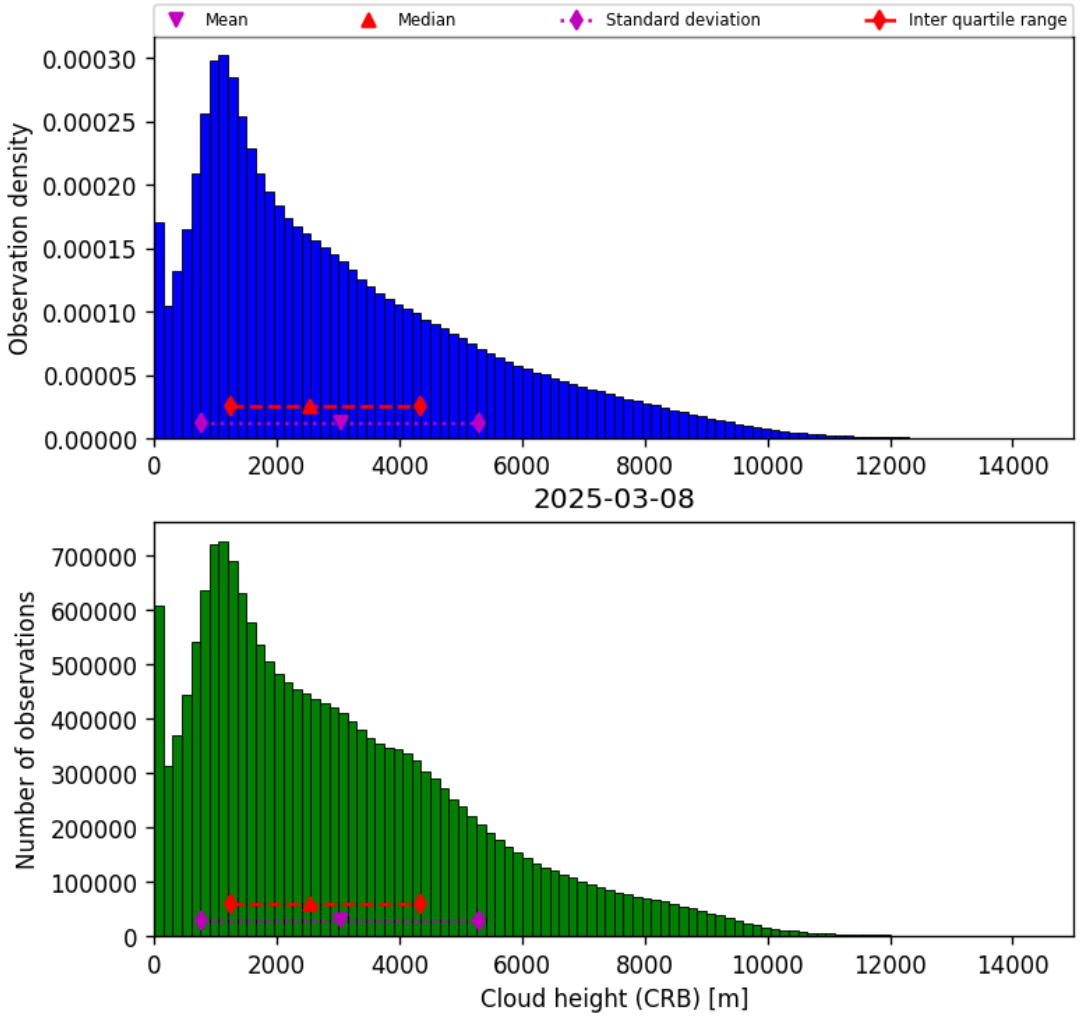

Figure 41: Histogram of “Cloud height (CRB)” for 2025-03-08 to 2025-03-09

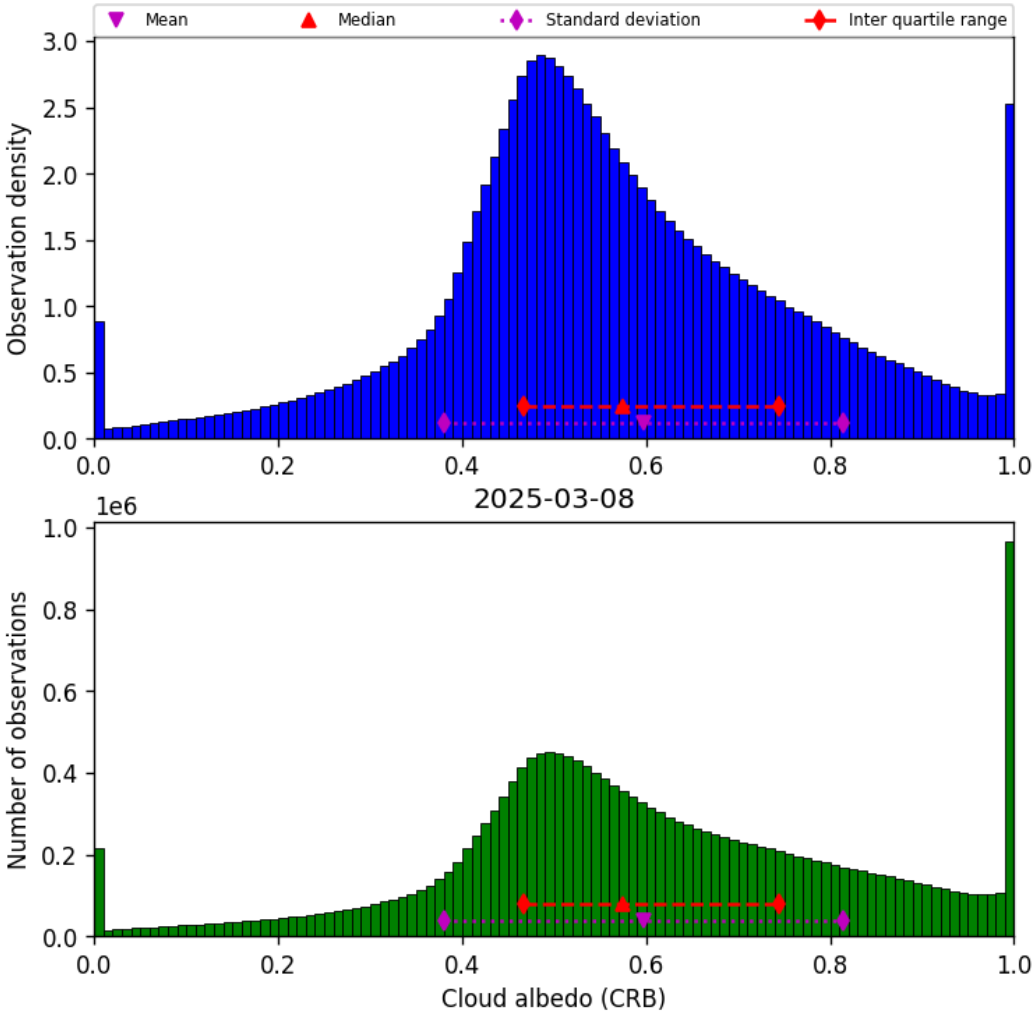

Figure 42: Histogram of “Cloud albedo (CRB)” for 2025-03-08 to 2025-03-09

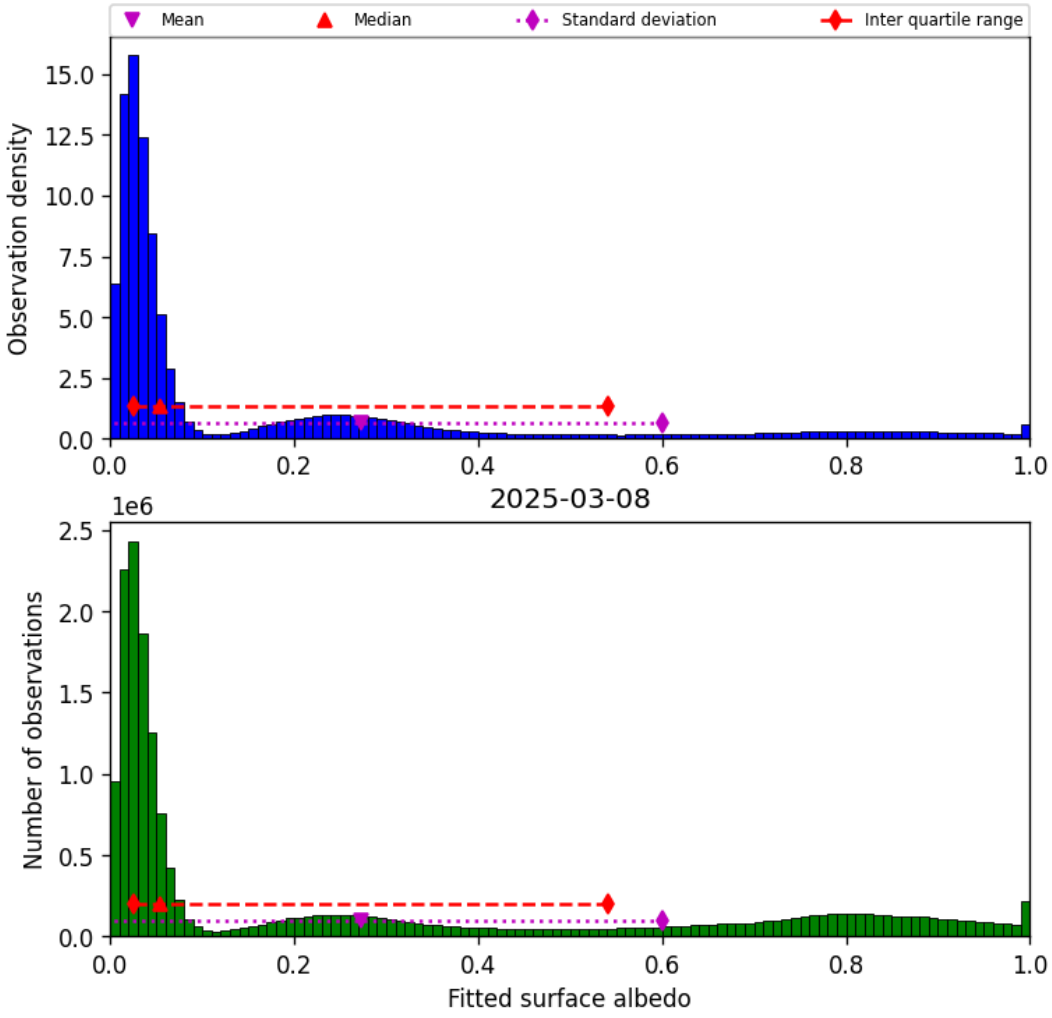

Figure 43: Histogram of “Fitted surface albedo” for 2025-03-08 to 2025-03-09

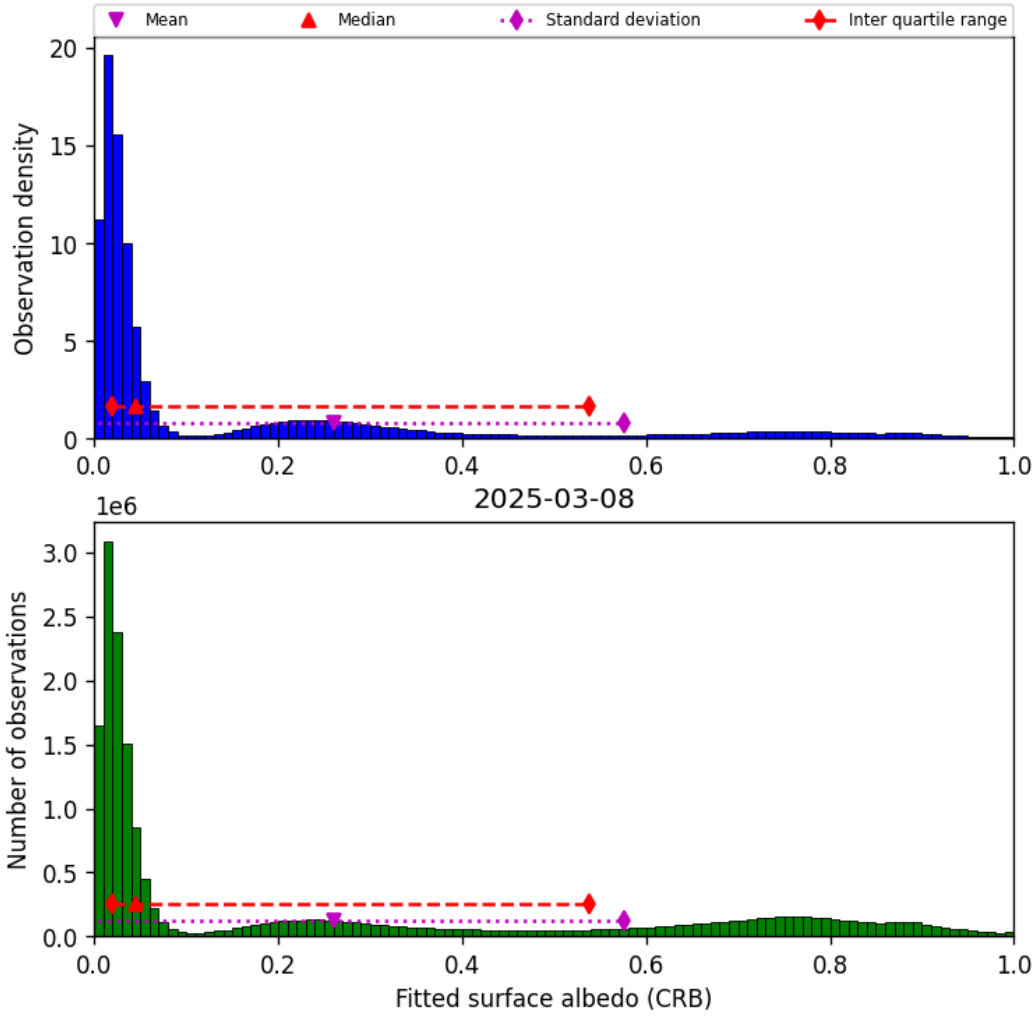

Figure 44: Histogram of “Fitted surface albedo (CRB)” for 2025-03-08 to 2025-03-09

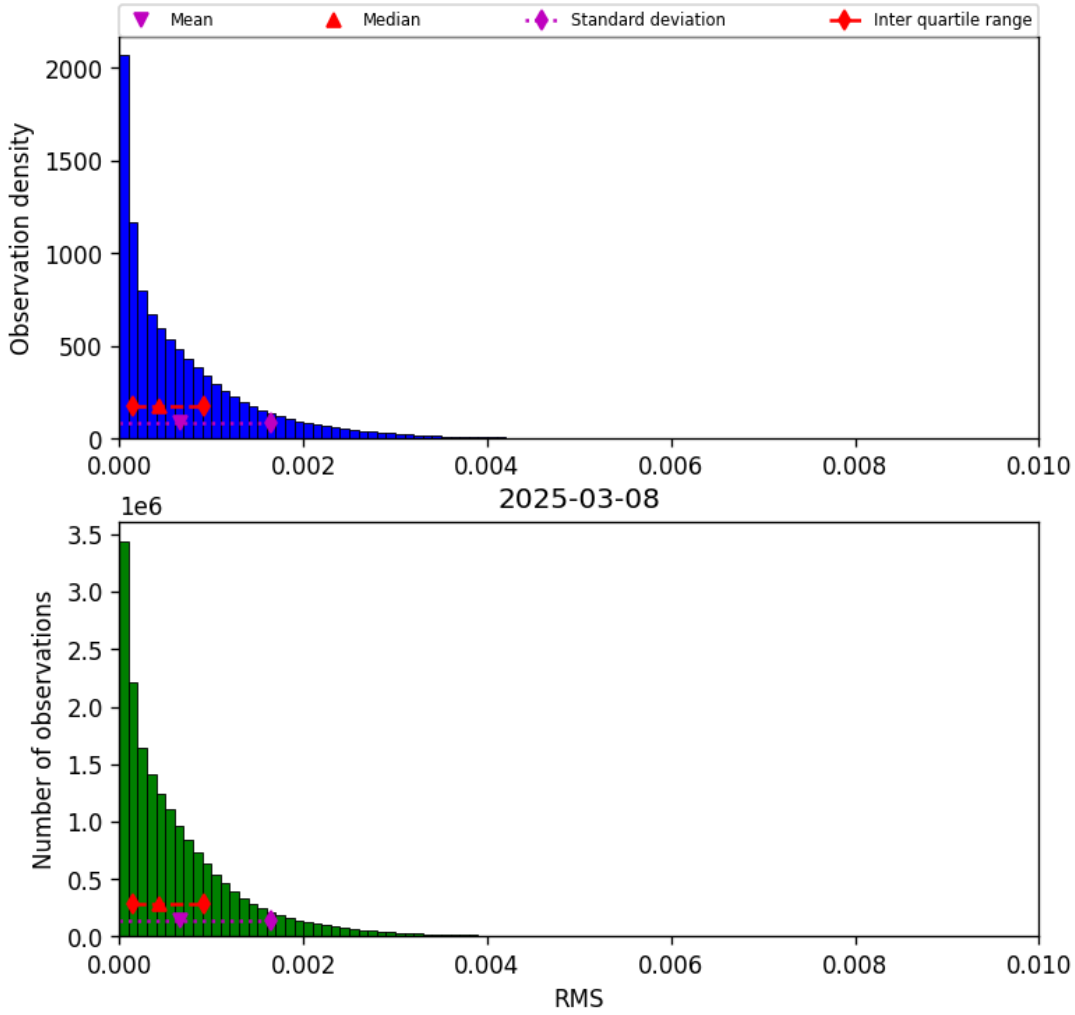

Figure 45: Histogram of “RMS” for 2025-03-08 to 2025-03-09

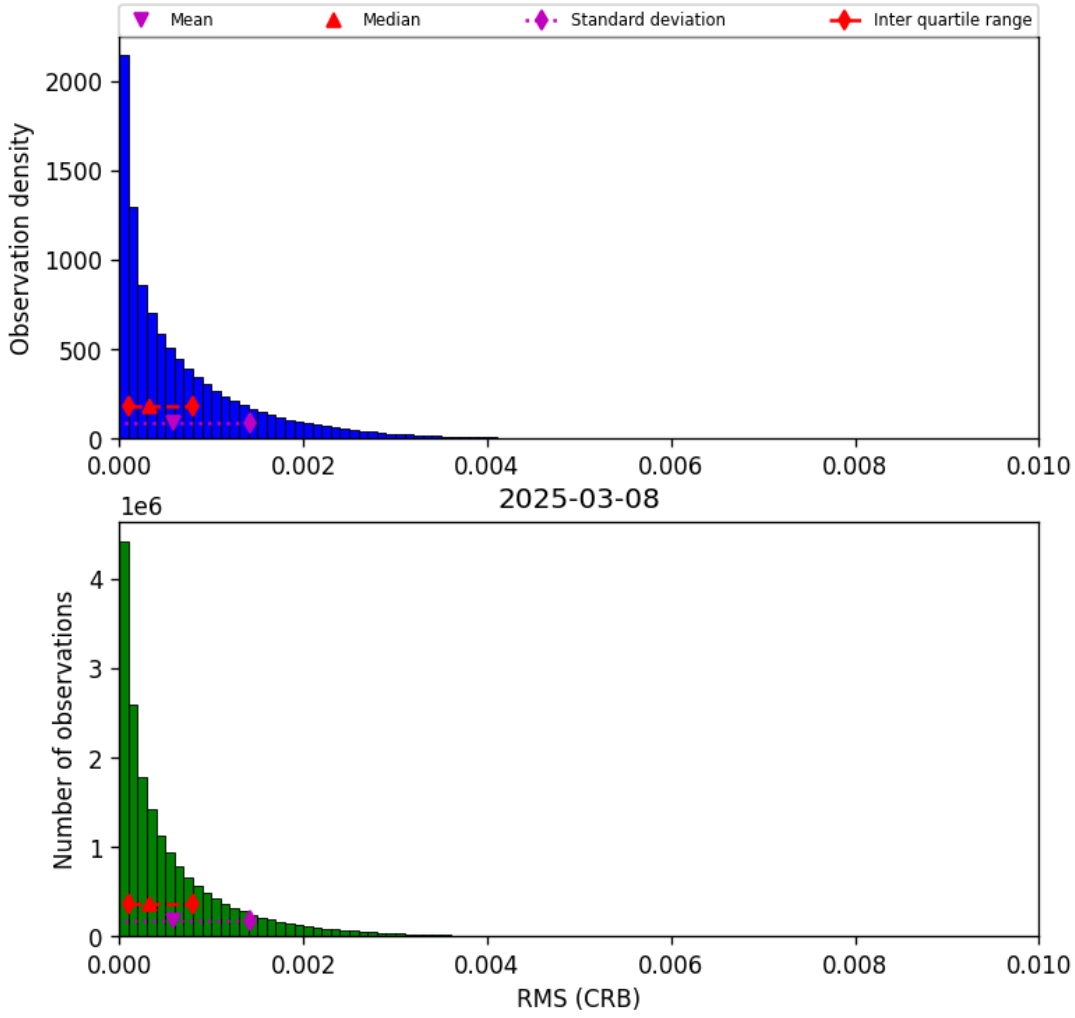

Figure 46: Histogram of “RMS (CRB)” for 2025-03-08 to 2025-03-09

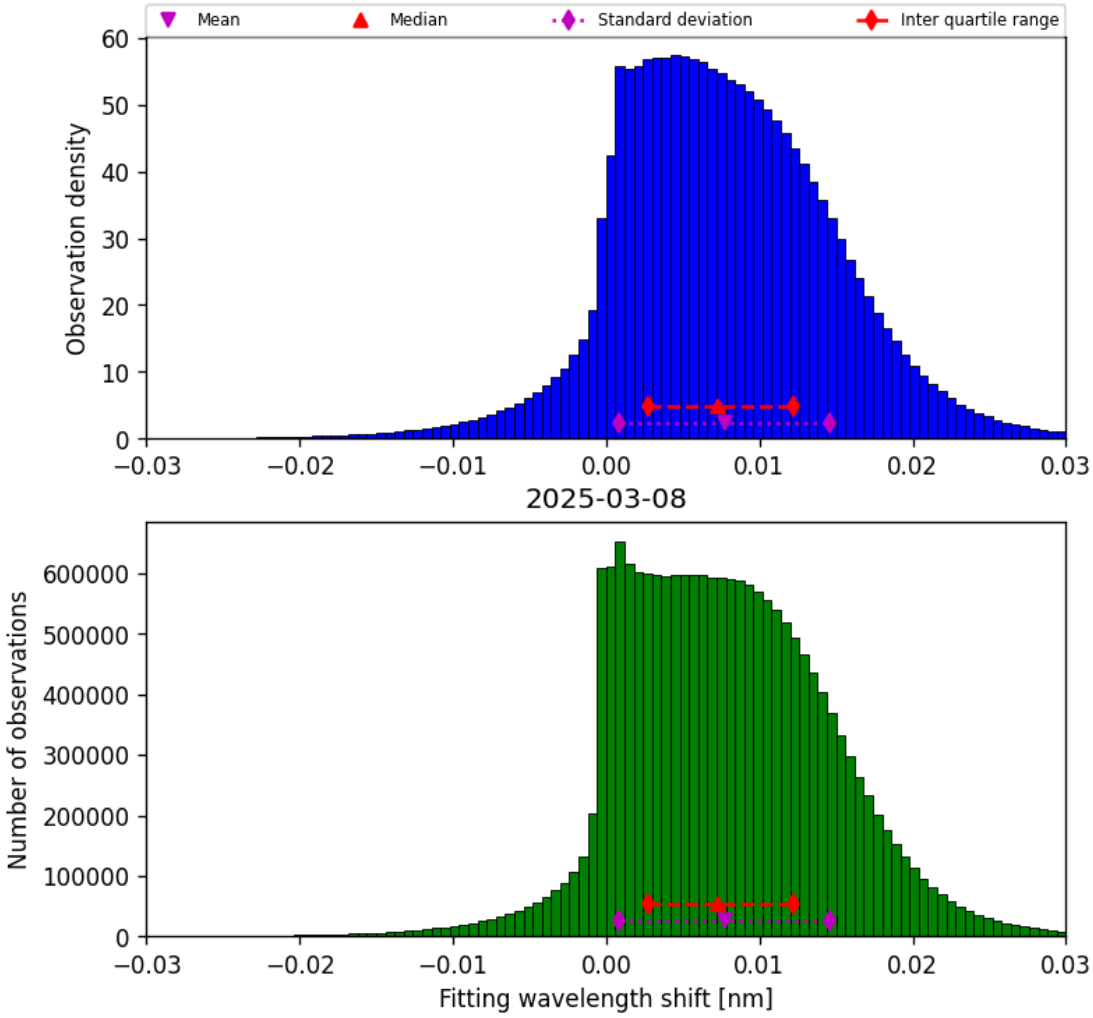

Figure 47: Histogram of “Fitting wavelength shift” for 2025-03-08 to 2025-03-09

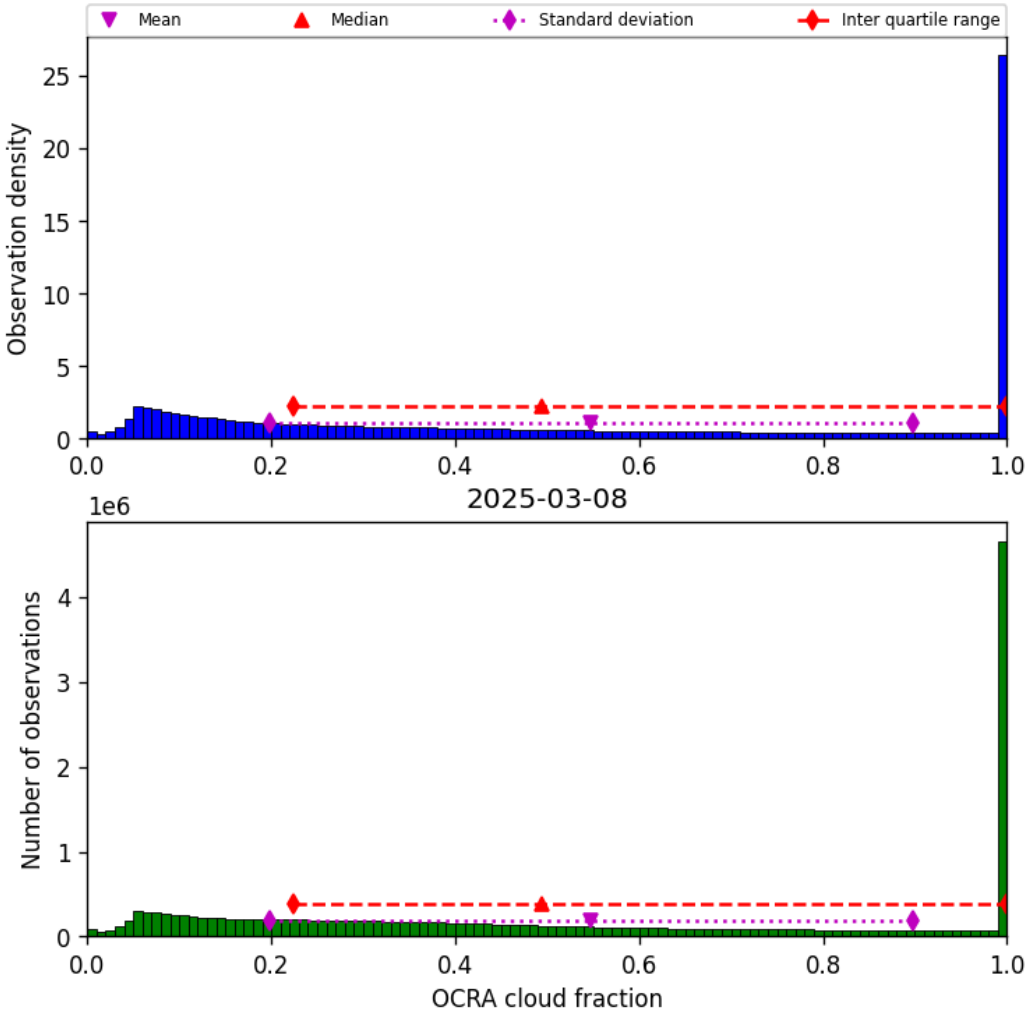

Figure 48: Histogram of “OCRA cloud fraction” for 2025-03-08 to 2025-03-09

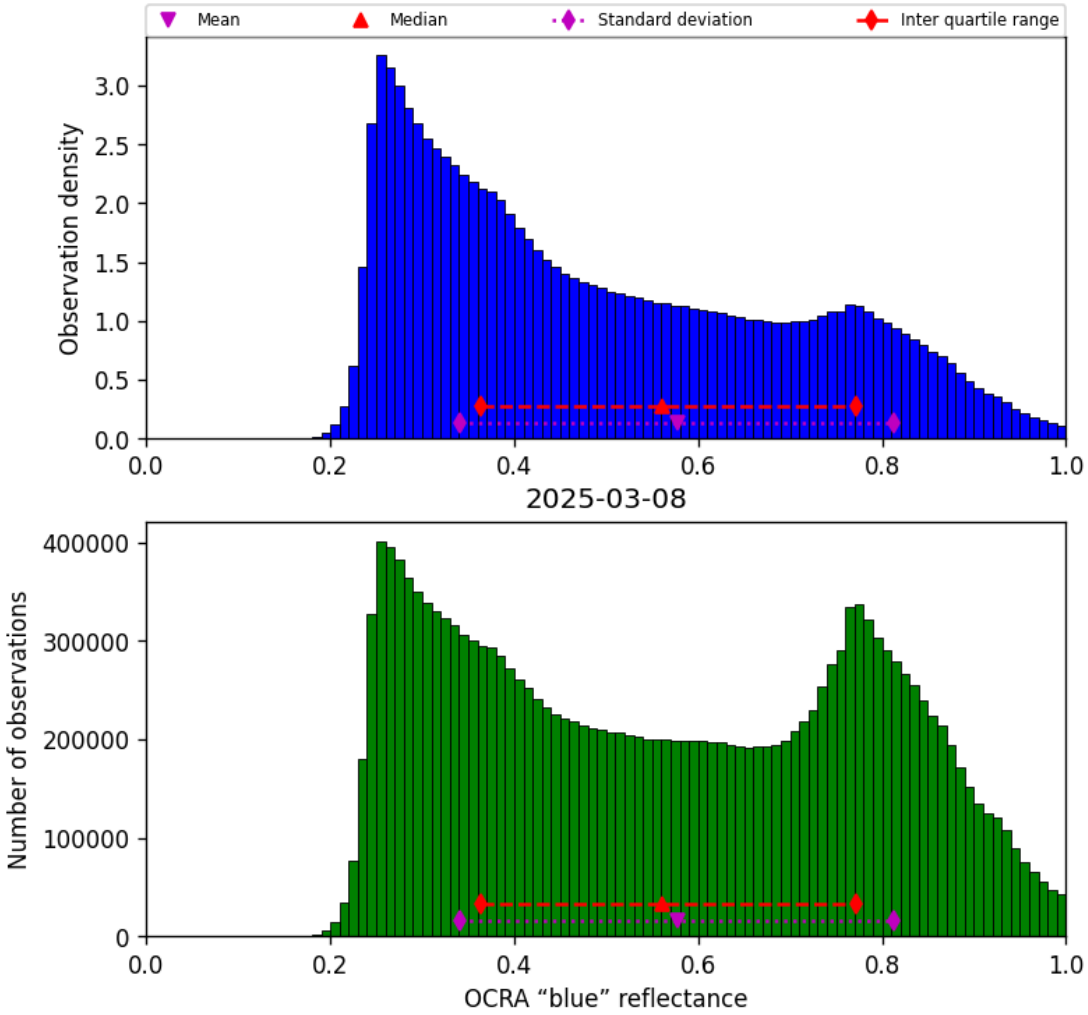

Figure 49: Histogram of “OCRA “blue” reflectance” for 2025-03-08 to 2025-03-09

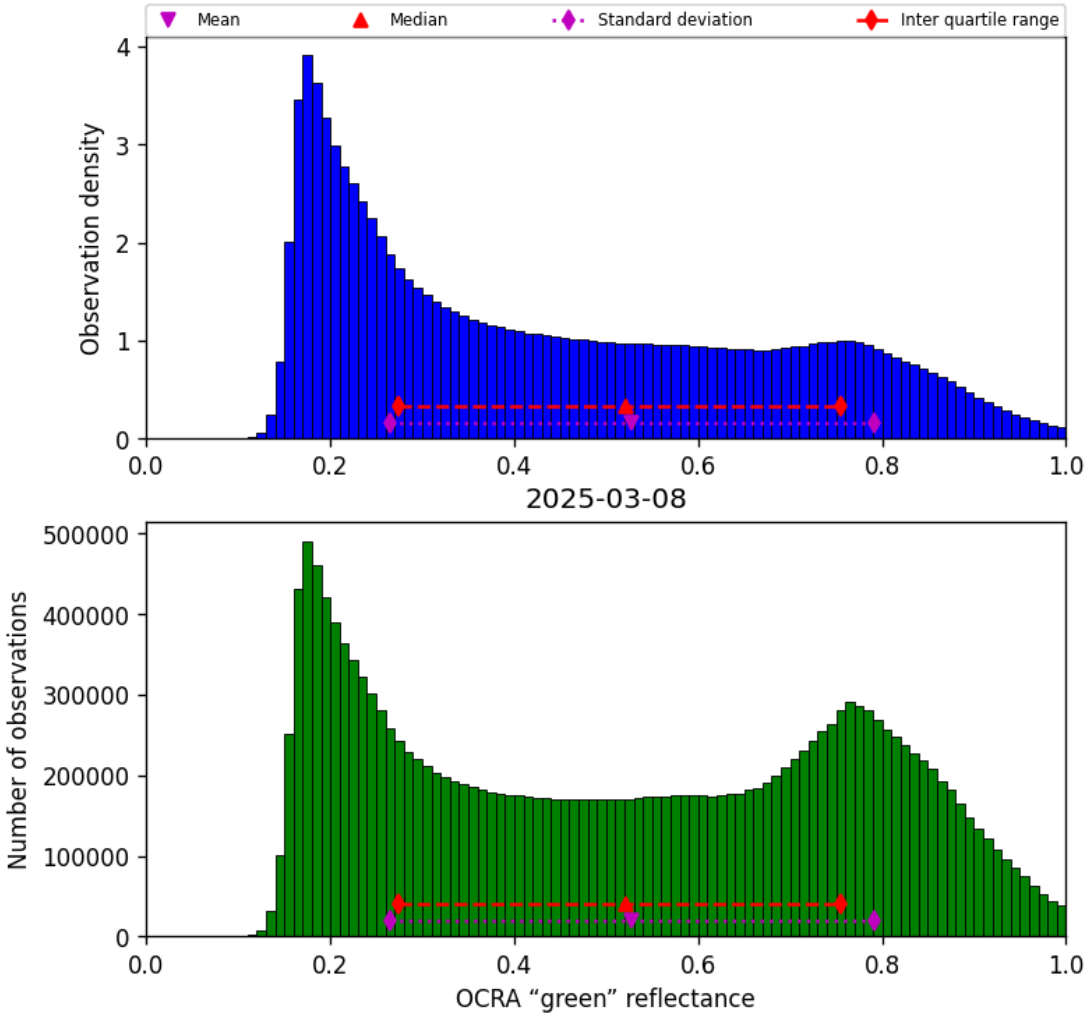

Figure 50: Histogram of “OCRA “green” reflectance” for 2025-03-08 to 2025-03-09

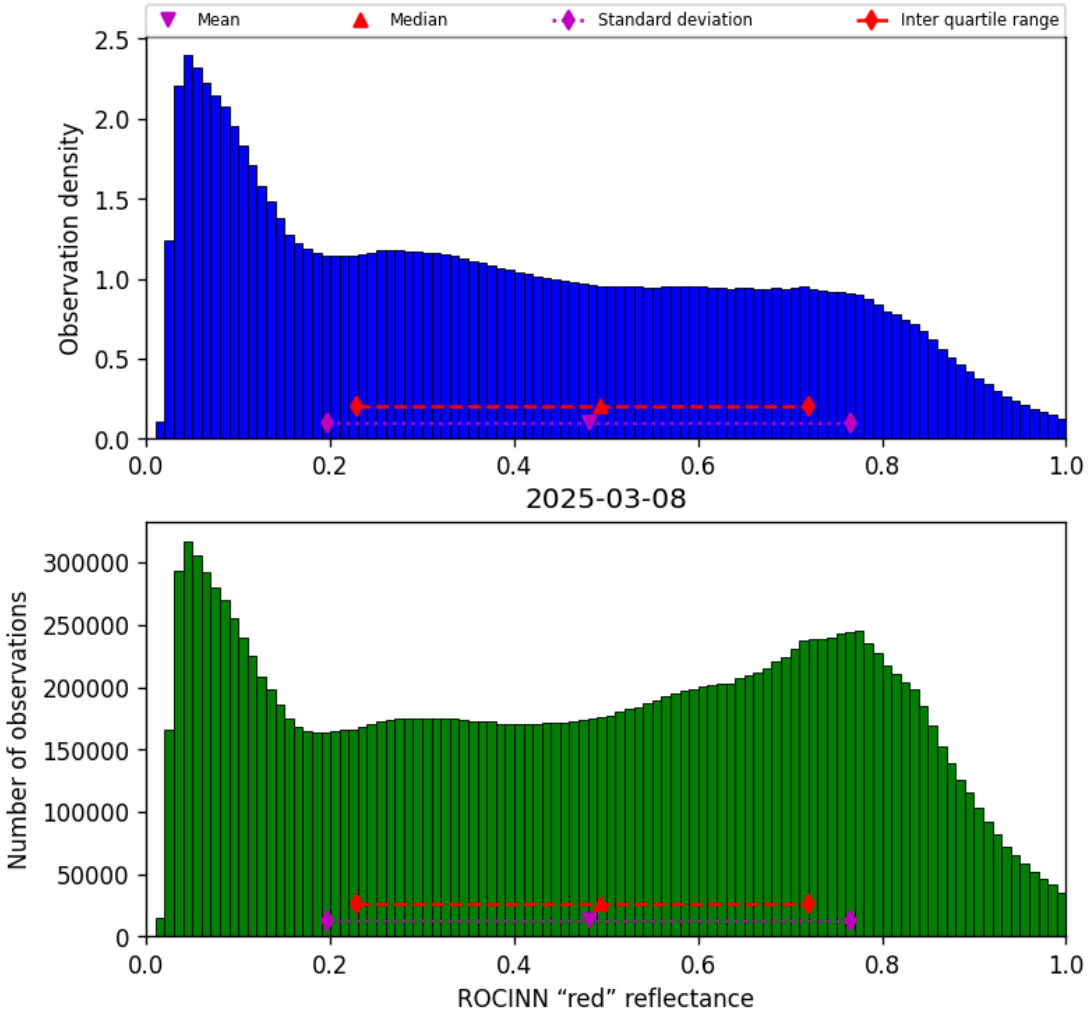

Figure 51: Histogram of “ROCINN “red” reflectance” for 2025-03-08 to 2025-03-09

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.

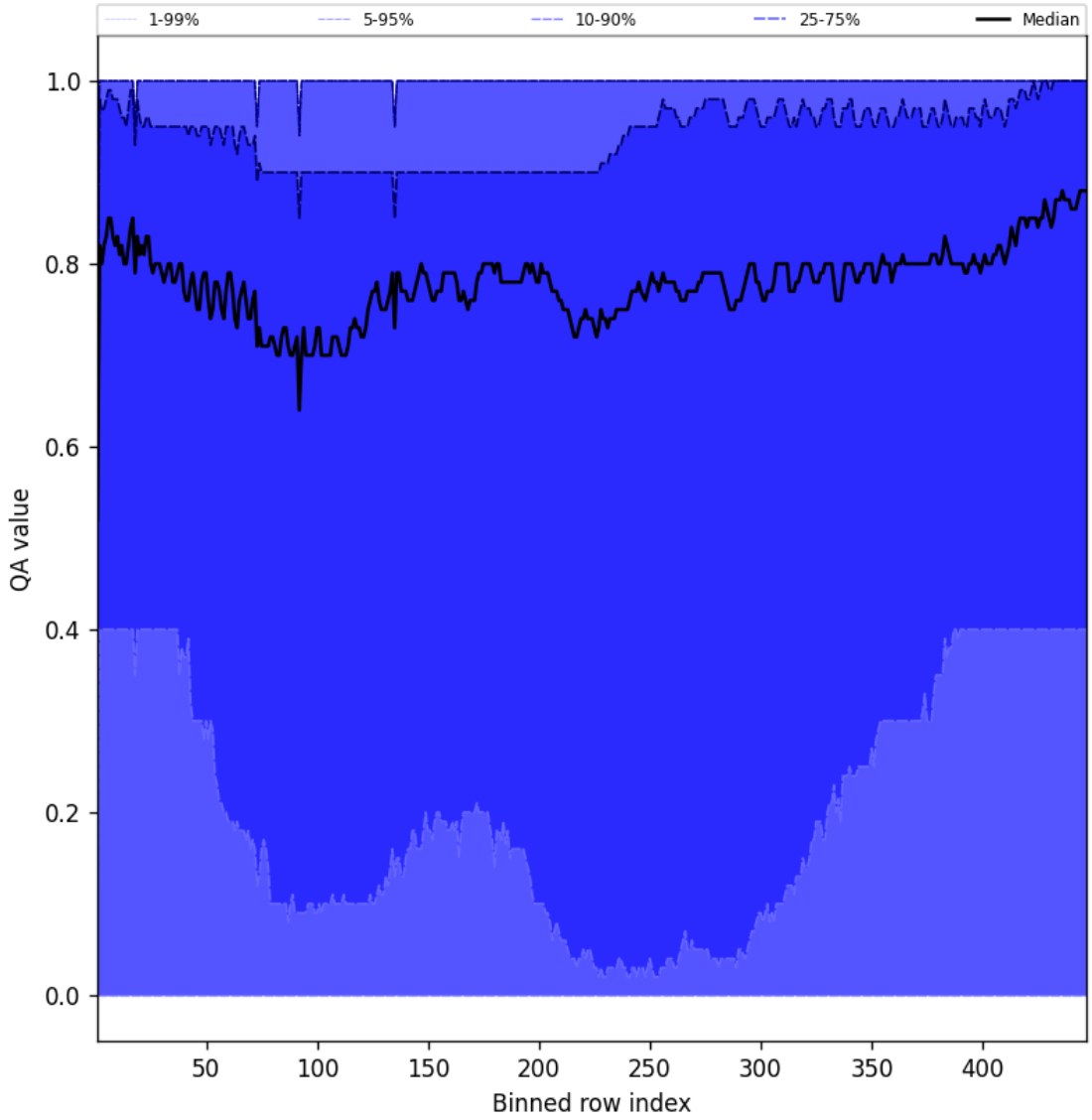

Figure 52: Along track statistics of “QA value” for 2025-03-08 to 2025-03-09

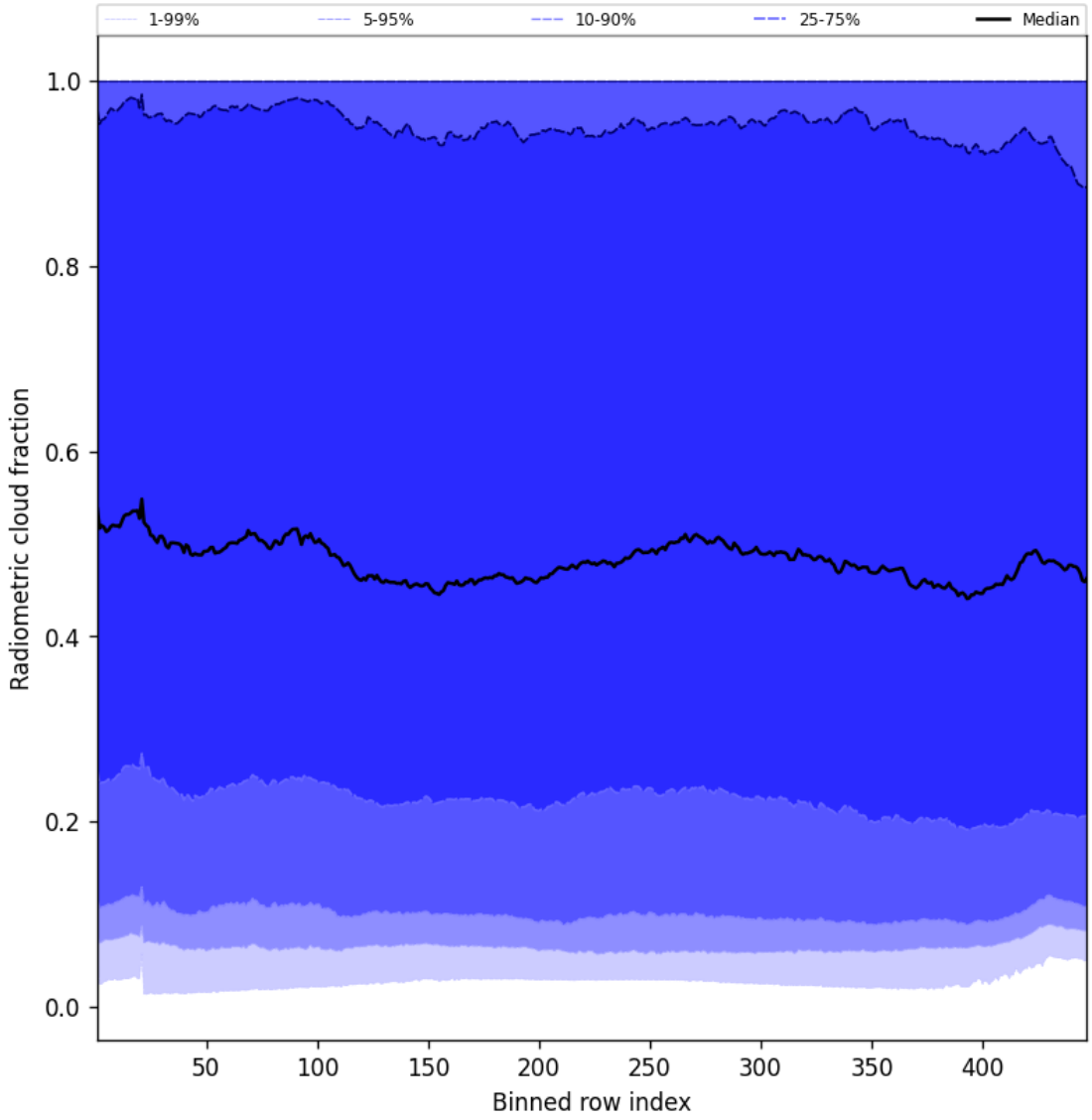

Figure 53: Along track statistics of “Radiometric cloud fraction” for 2025-03-08 to 2025-03-09

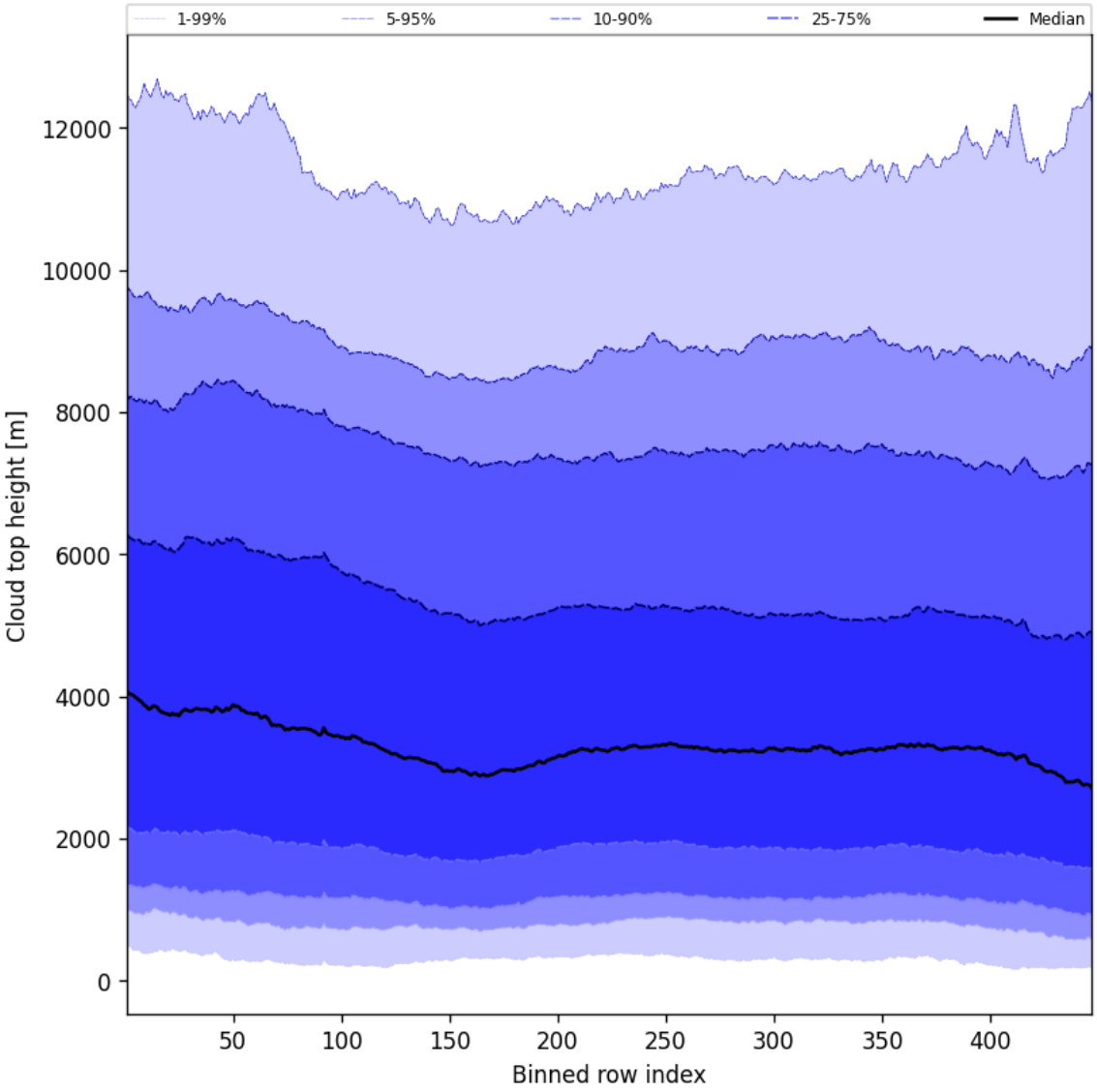

Figure 54: Along track statistics of “Cloud top height” for 2025-03-08 to 2025-03-09

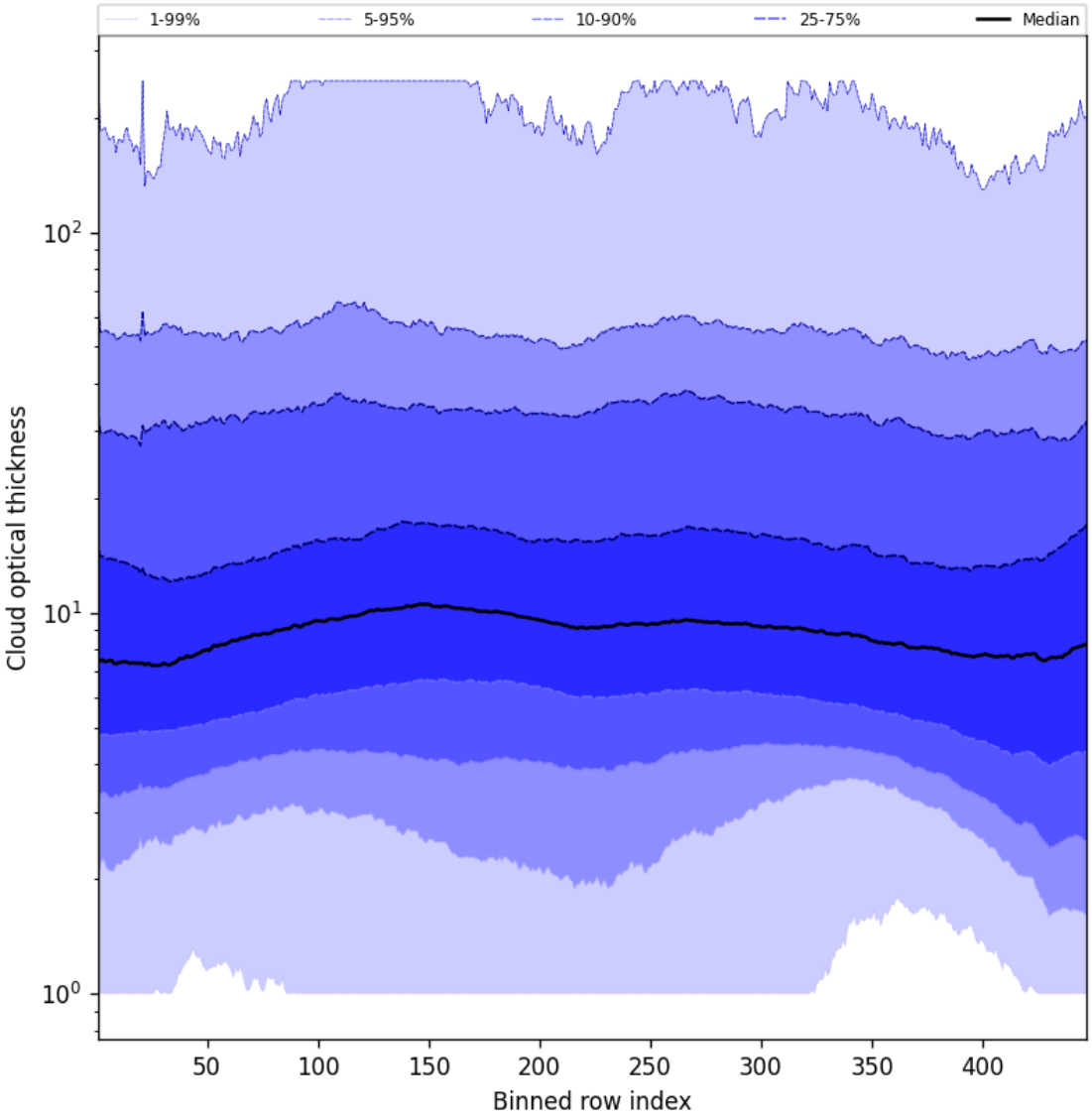

Figure 55: Along track statistics of “Cloud optical thickness” for 2025-03-08 to 2025-03-09

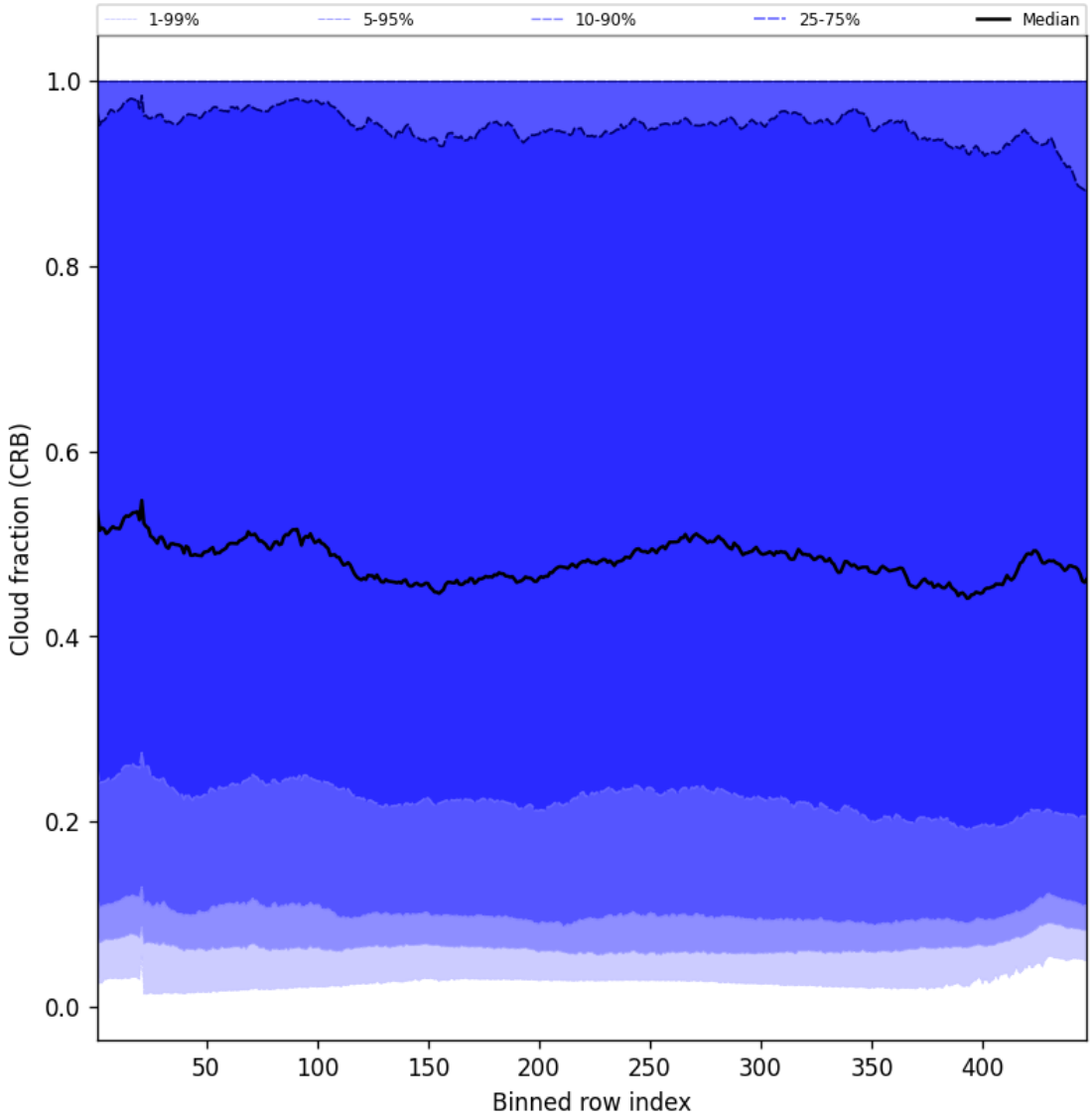

Figure 56: Along track statistics of “Cloud fraction (CRB)” for 2025-03-08 to 2025-03-09

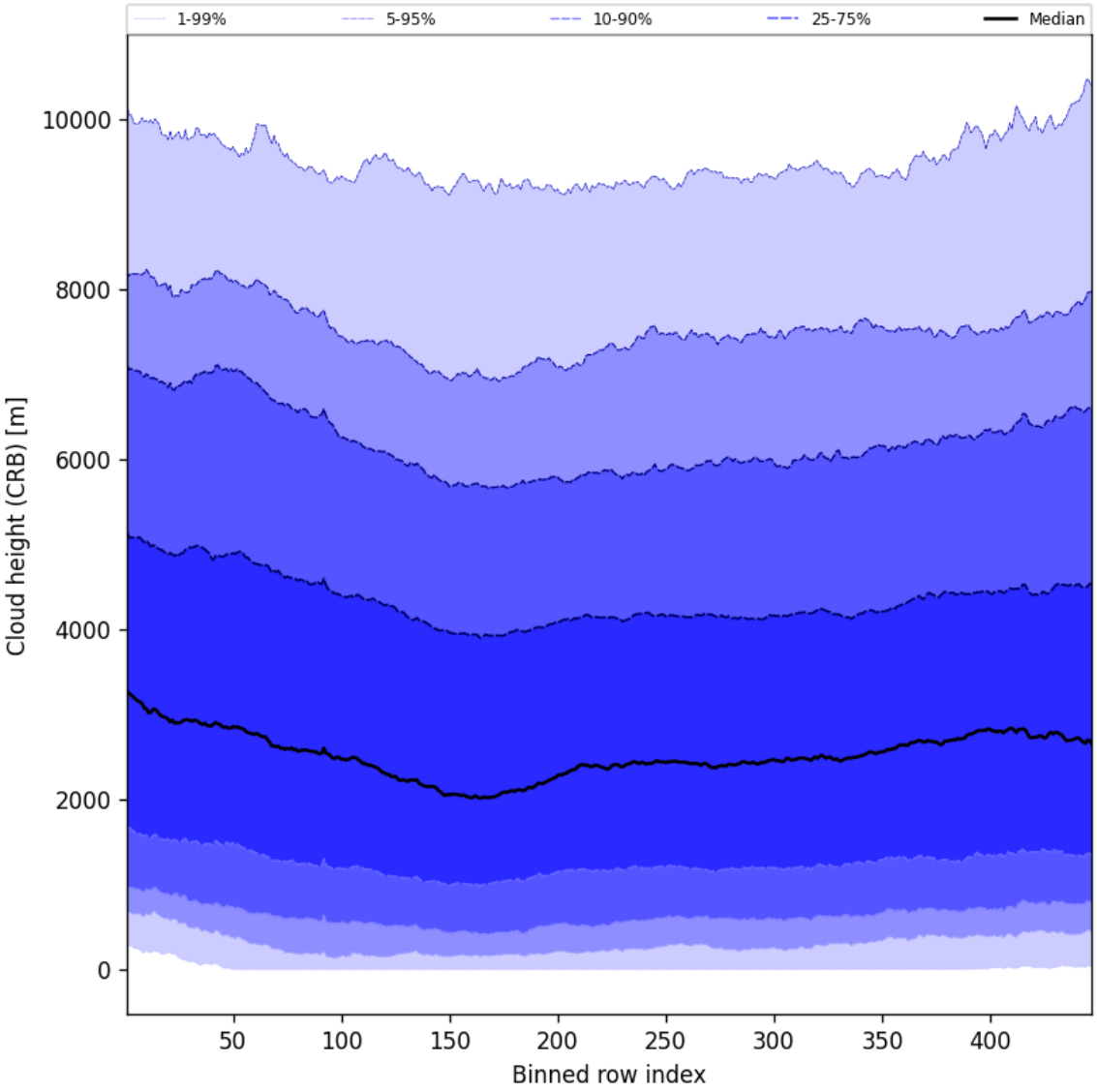

Figure 57: Along track statistics of “Cloud height (CRB)” for 2025-03-08 to 2025-03-09

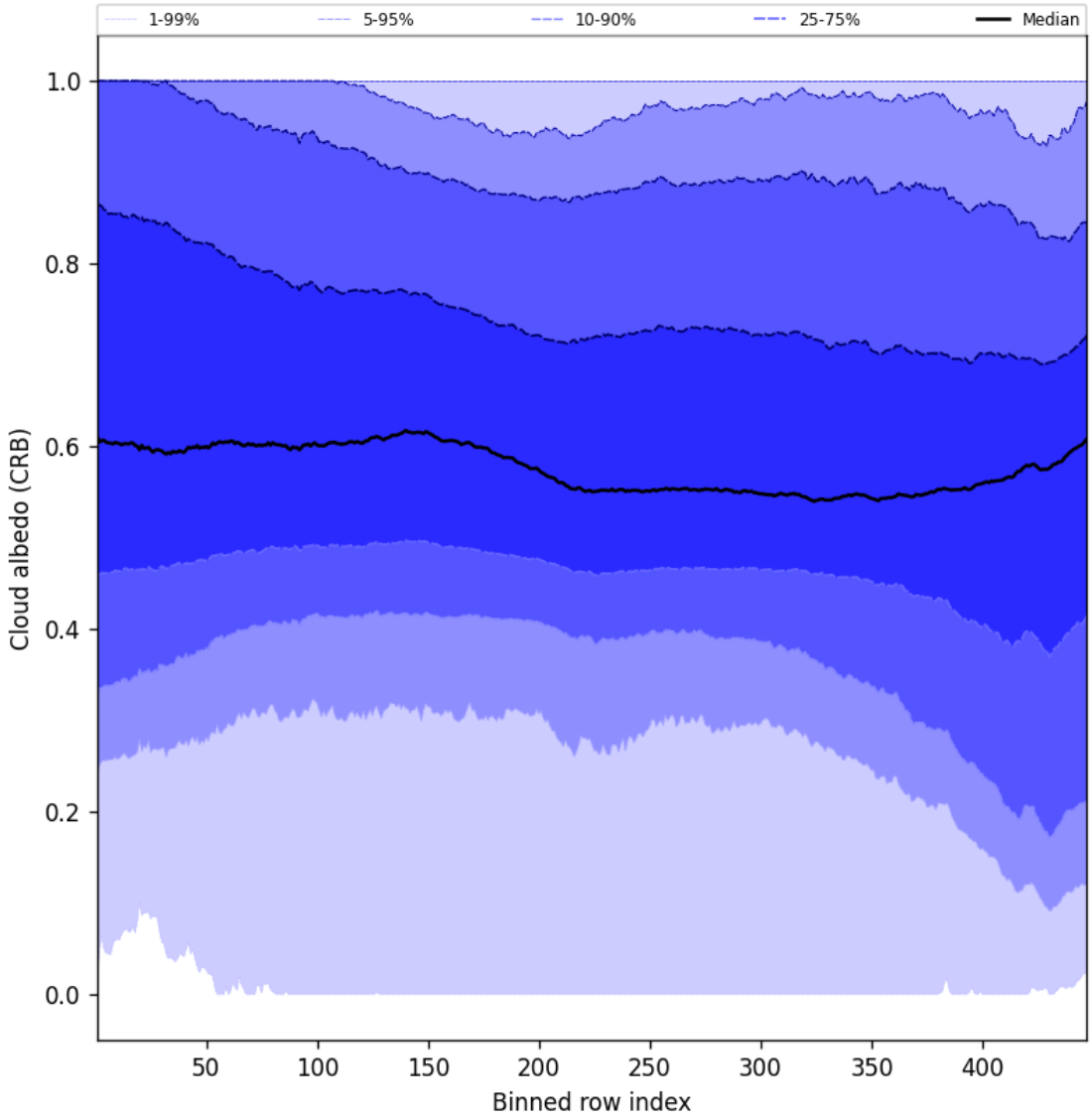

Figure 58: Along track statistics of “Cloud albedo (CRB)” for 2025-03-08 to 2025-03-09

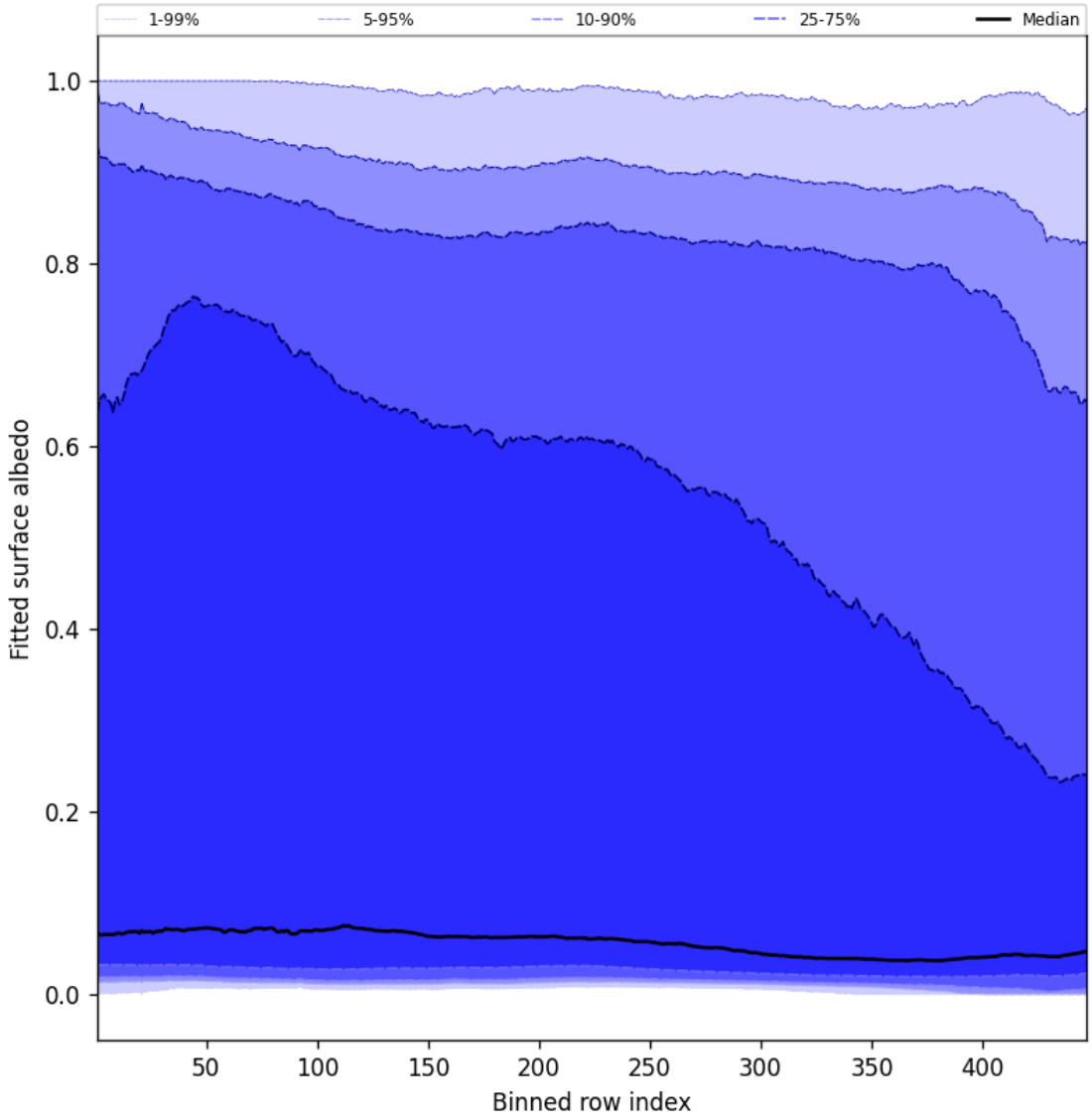

Figure 59: Along track statistics of “Fitted surface albedo” for 2025-03-08 to 2025-03-09

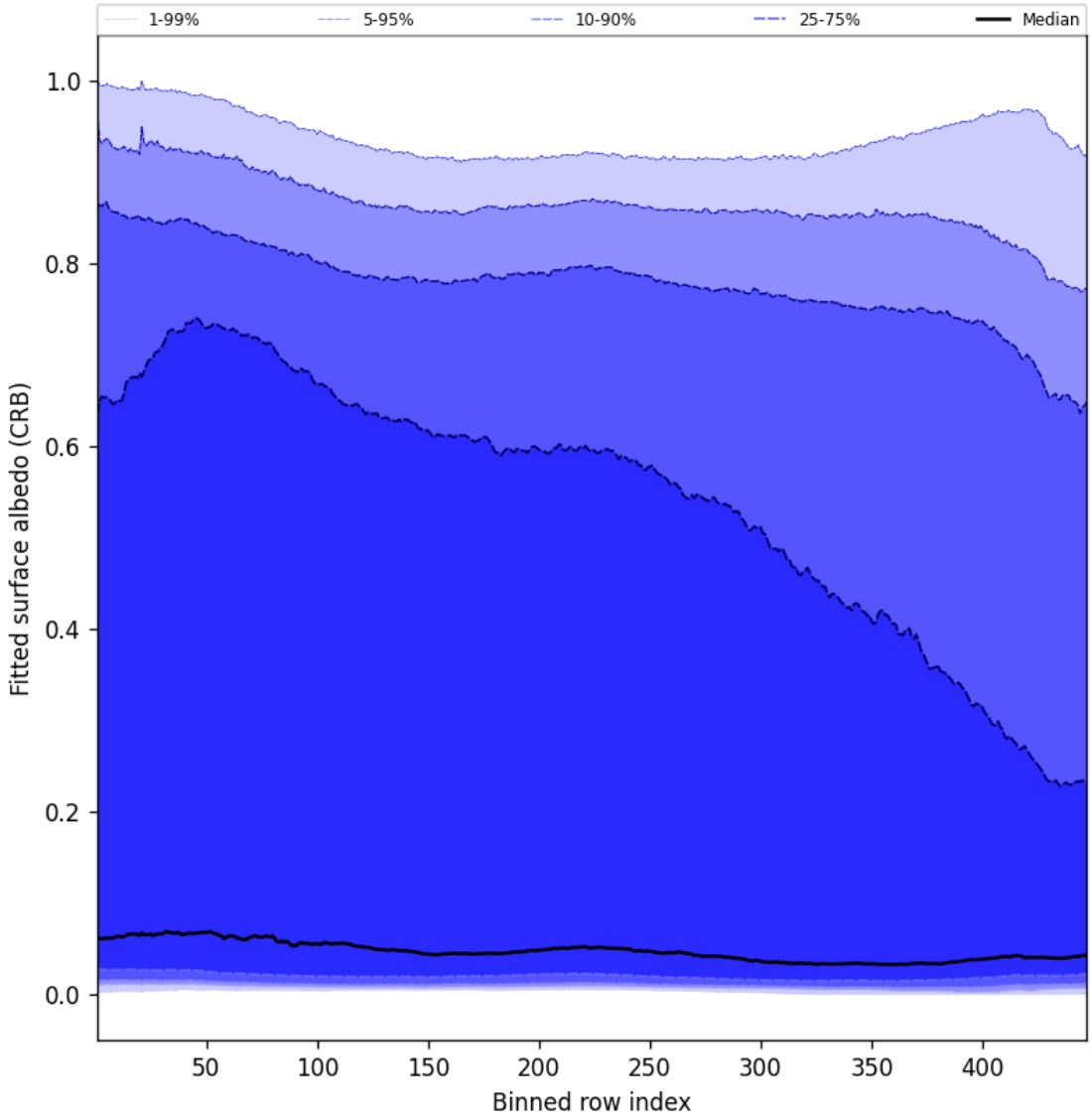

Figure 60: Along track statistics of “Fitted surface albedo (CRB)” for 2025-03-08 to 2025-03-09

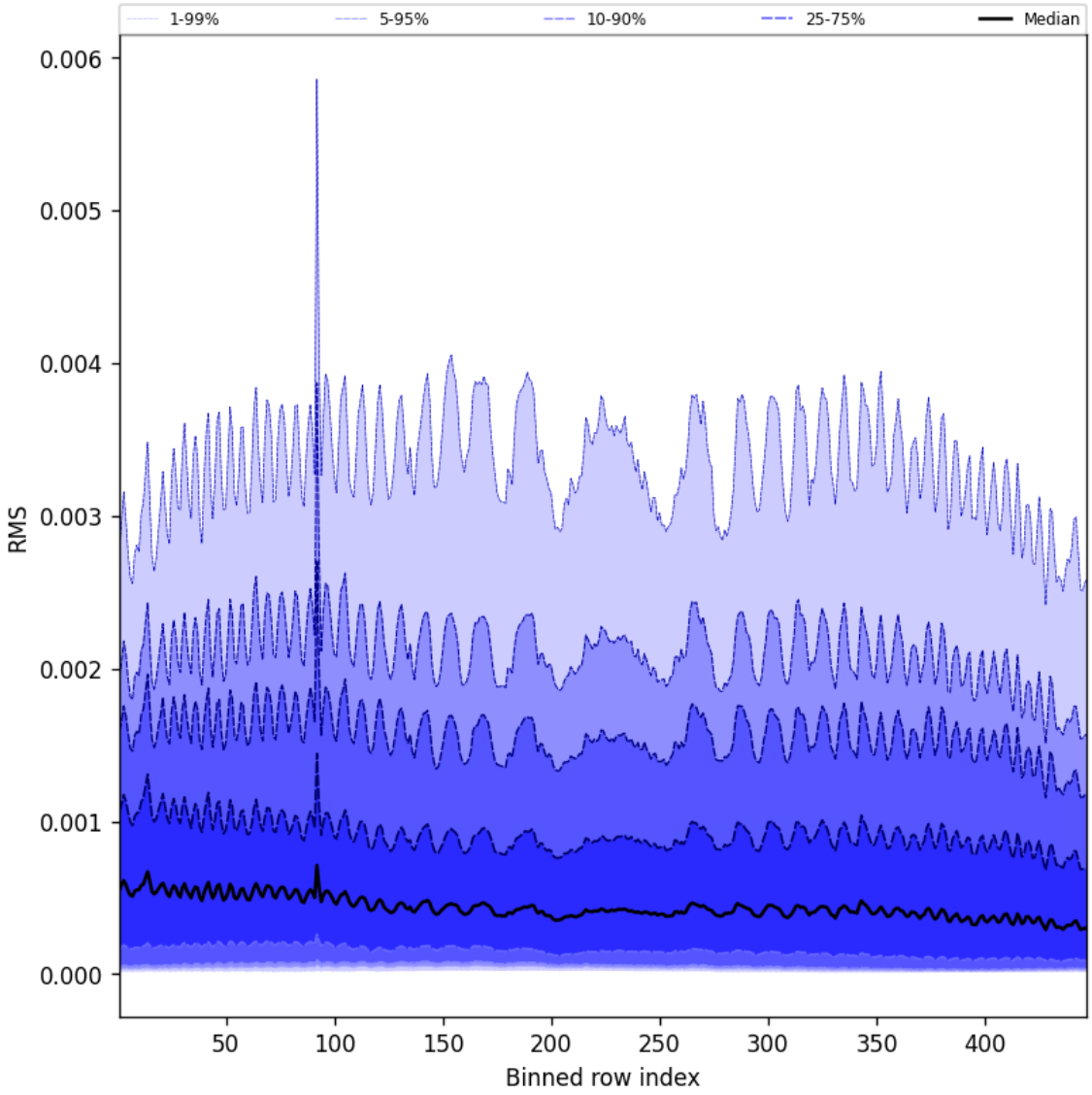

Figure 61: Along track statistics of “RMS” for 2025-03-08 to 2025-03-09

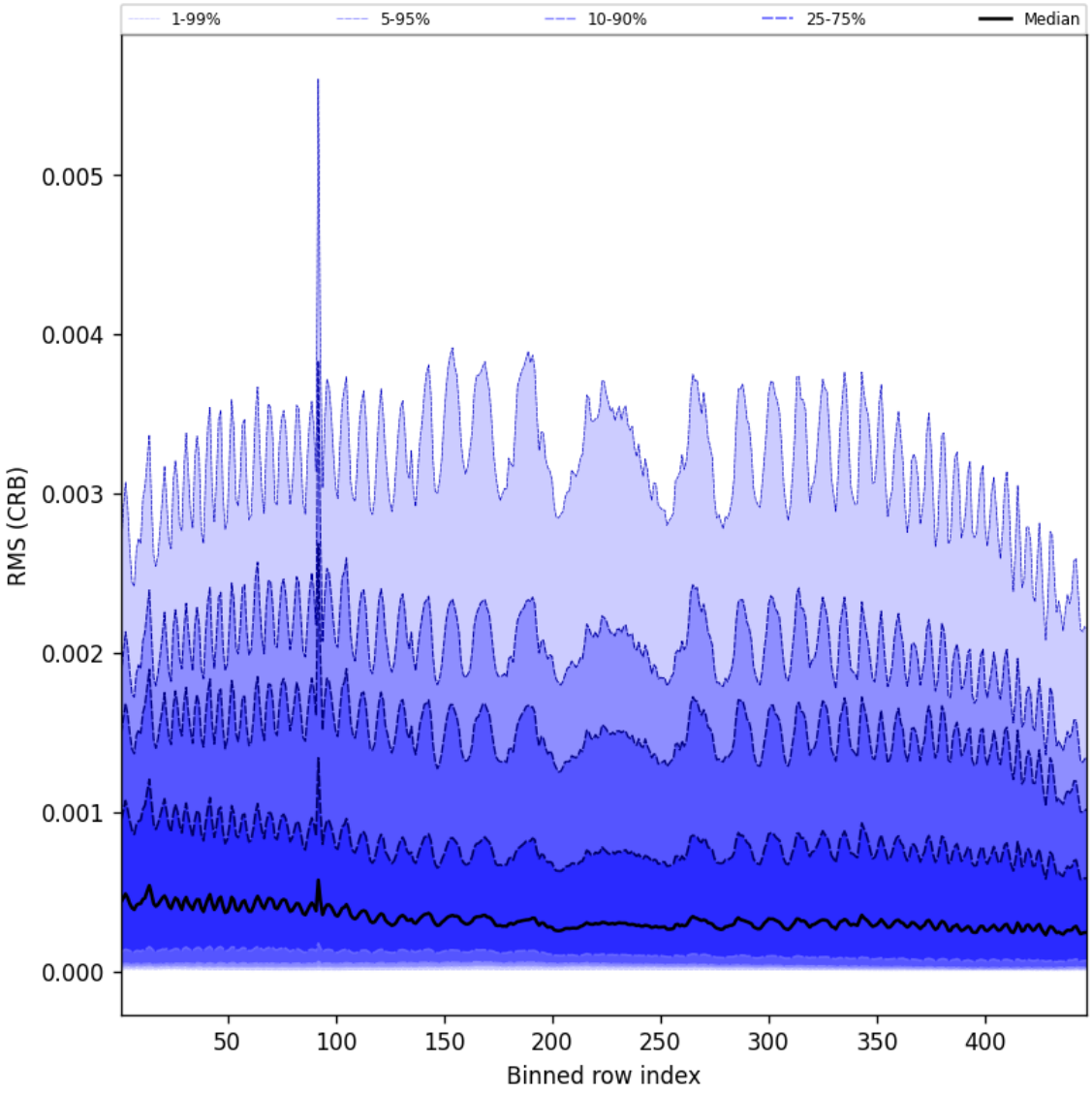

Figure 62: Along track statistics of “RMS (CRB)” for 2025-03-08 to 2025-03-09

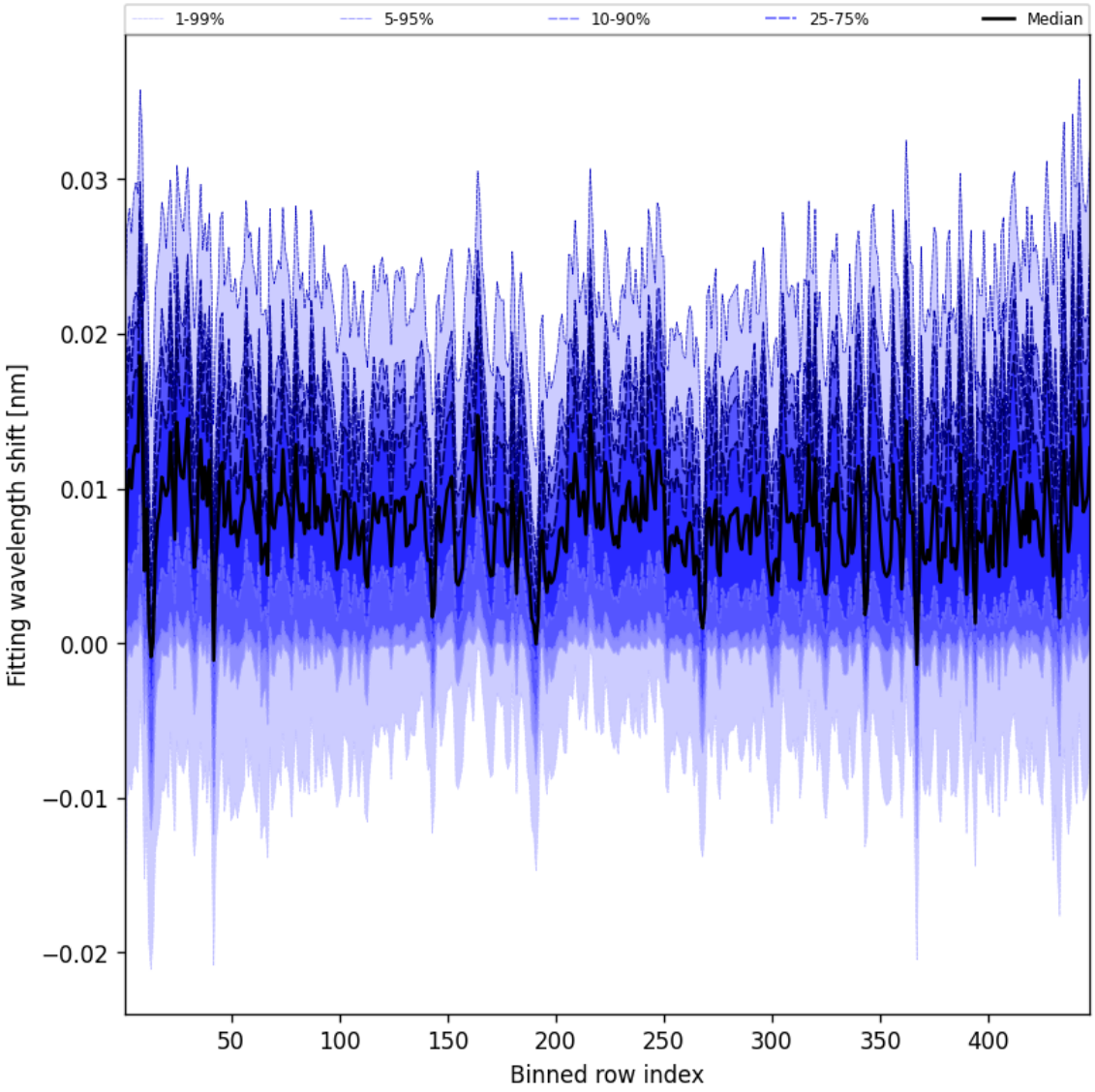

Figure 63: Along track statistics of “Fitting wavelength shift” for 2025-03-08 to 2025-03-09

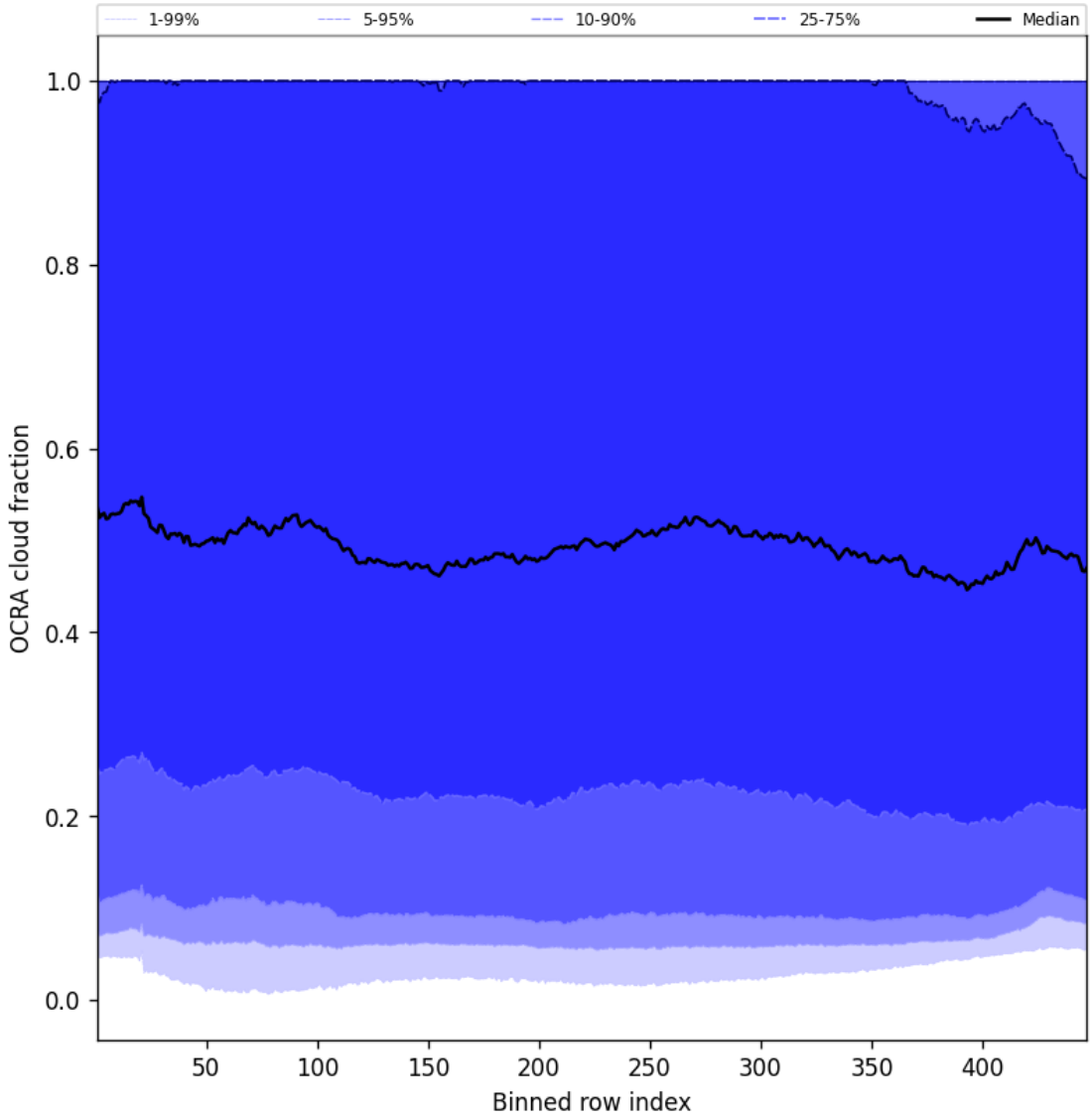

Figure 64: Along track statistics of “OCRA cloud fraction” for 2025-03-08 to 2025-03-09

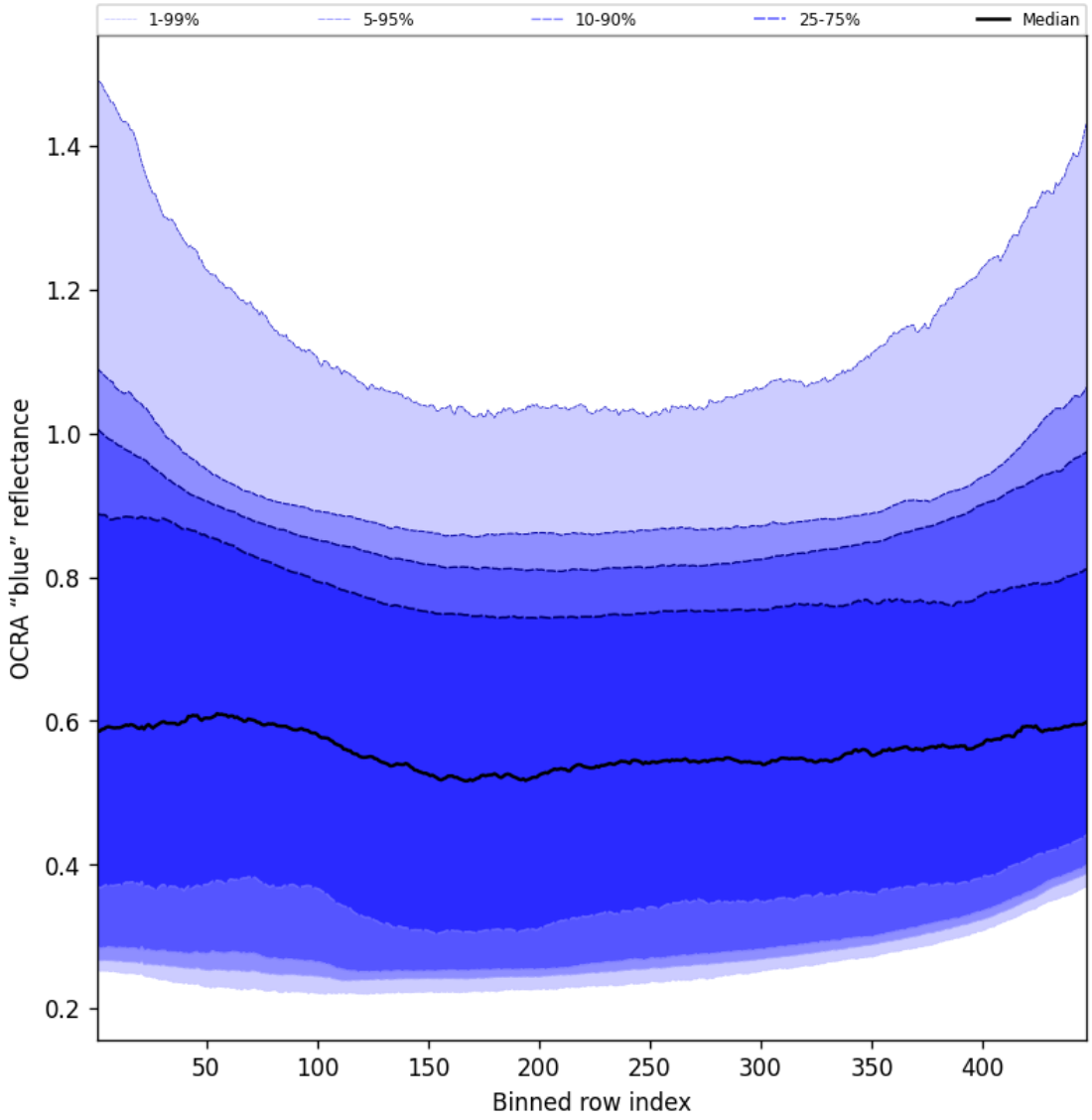

Figure 65: Along track statistics of “OCRA “blue” reflectance” for 2025-03-08 to 2025-03-09

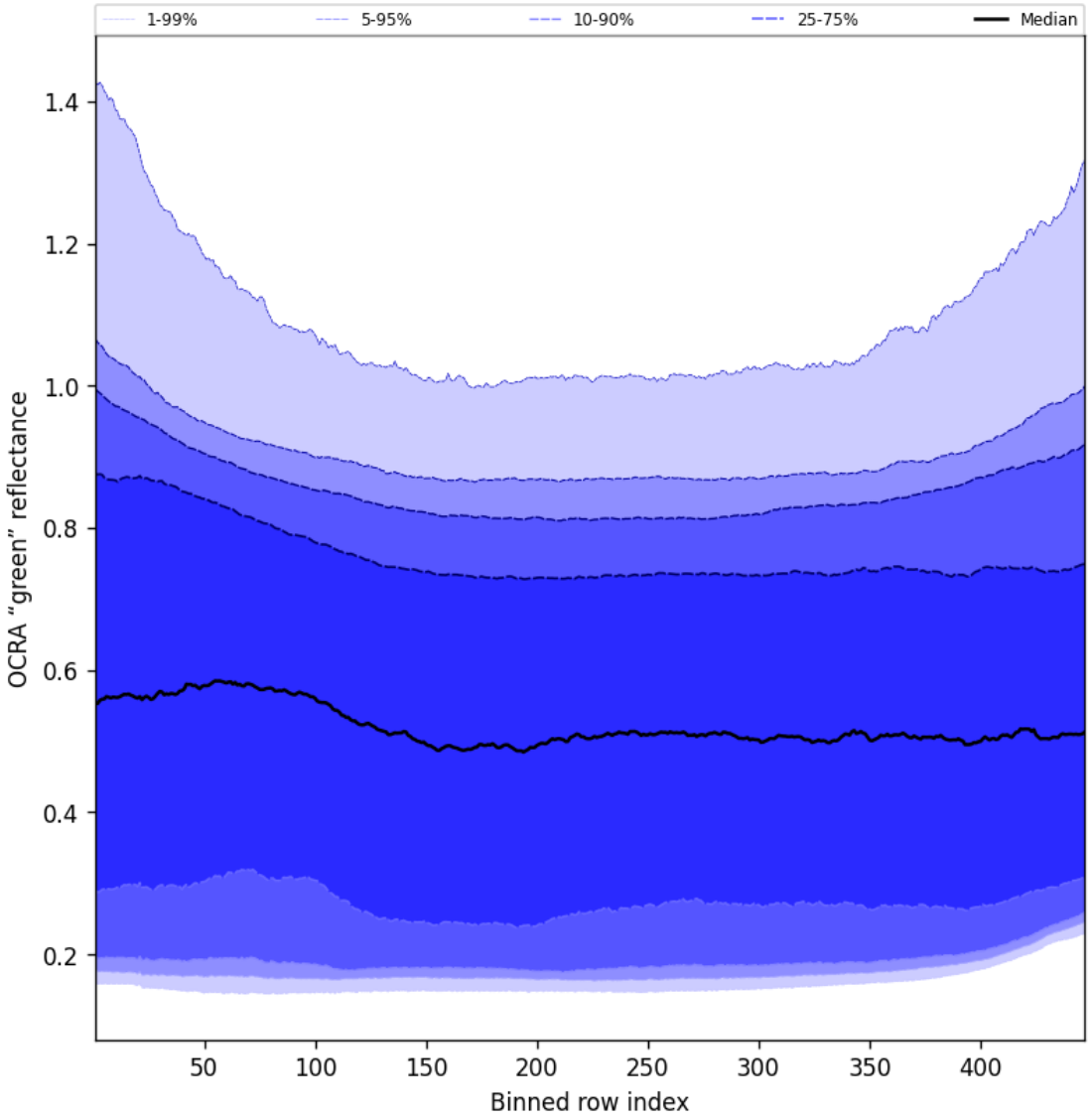

Figure 66: Along track statistics of "OCRA "green" reflectance" for 2025-03-08 to 2025-03-09

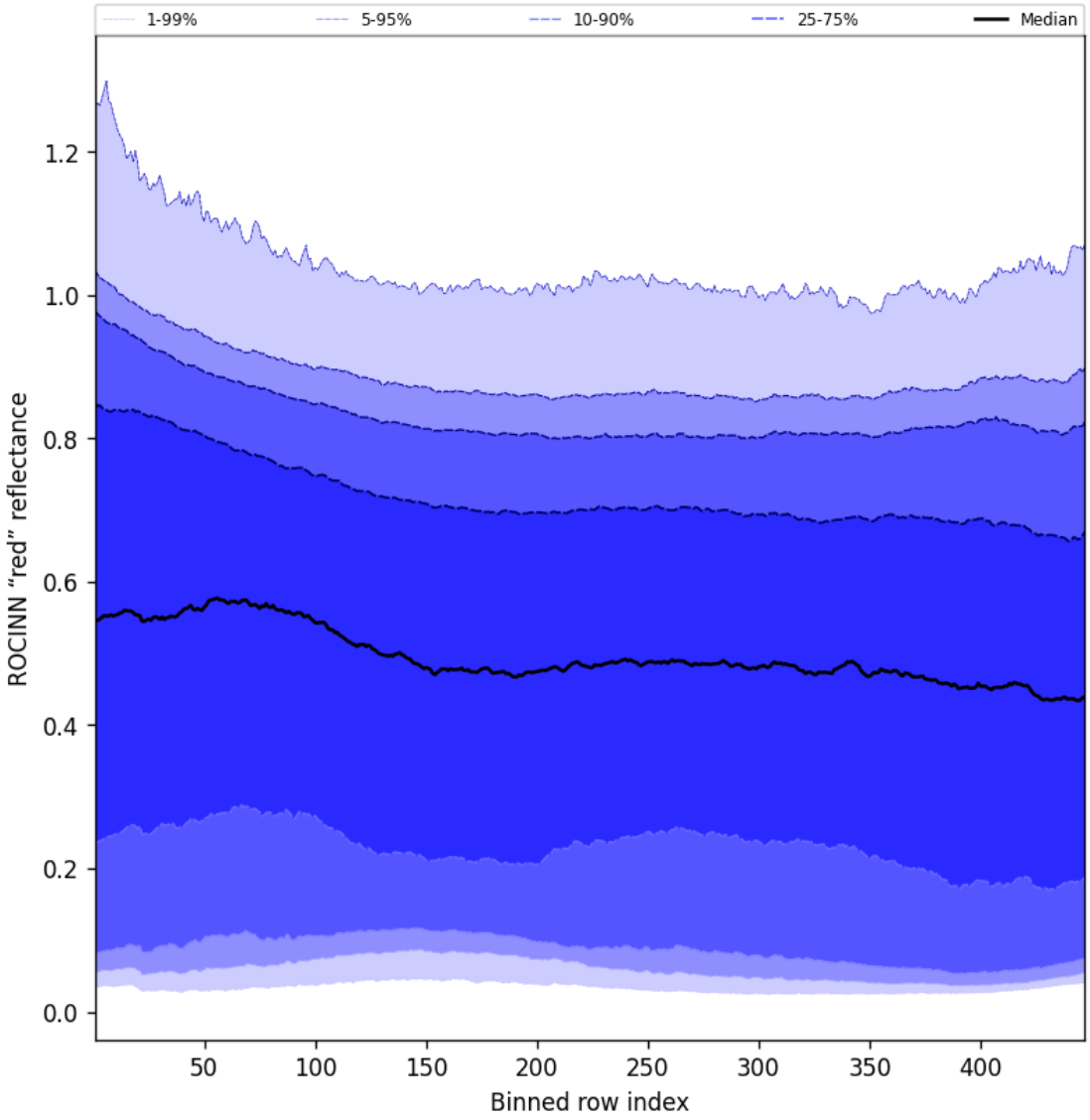

Figure 67: Along track statistics of “ROCINN “red” reflectance” for 2025-03-08 to 2025-03-09

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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