PyCAMA report generated by tropl2-proc

tropl2-proc

2025-02-23 (01:30)

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]	0.605 ± 0.384	18878566	5.000×10^{-3}	0.680	0.750	0.0	1.000
cloud fraction [1]	0.547 ± 0.340	18878566	0.995	0.708	0.500	6.370×10^{-3}	1.000
cloud top height [m]	$(0.406 \pm 0.273) \times 10^4$	18878566	1.425×10^3	3.923×10^3	3.479×10^3	0.0	2.000×10^4
cloud optical thickness [1]	17.7 ± 33.9	18878566	9.34	9.03	8.92	1.000	250
cloud fraction crb [1]	0.546 ± 0.340	18878566	0.995	0.707	0.499	4.007×10^{-3}	1.000
cloud height crb [m]	$(0.313 \pm 0.231) \times 10^4$	18878566	975	3.284×10^3	2.640×10^3	0.0	2.000×10^4
cloud albedo crb [1]	0.595 ± 0.216	18878566	0.995	0.276	0.572	0.0	1.000
surface albedo fitted [1]	0.280 ± 0.339	18878566	2.500×10^{-2}	0.547	5.352×10^{-2}	0.0	1.000
surface albedo fitted crb [1]	0.269 ± 0.328	18878566	1.500×10^{-2}	0.538	4.434×10^{-2}	0.0	1.000
fitted root mean square [1]	$(6.785 \pm 10.445) \times 10^{-4}$	18878566	5.000×10^{-5}	7.849×10^{-4}	4.259×10^{-4}	9.364×10^{-7}	0.811
fitted root mean square crb [1]	$(5.881 \pm 10.104) \times 10^{-4}$	18878566	5.000×10^{-5}	7.066×10^{-4}	3.133×10^{-4}	7.884×10^{-7}	0.872
wavelength shift [nm]	$(7.791 \pm 6.807) \times 10^{-3}$	18878566	9.000×10^{-4}	9.354×10^{-3}	7.408×10^{-3}	-4.635×10^{-2}	0.476
cloud fraction apriori [1]	0.553 ± 0.345	18878566	0.995	0.753	0.510	0.0	1.000
reflectance blue ocra [1]	0.580 ± 0.233	18878566	0.255	0.403	0.564	0.142	2.01
reflectance green ocra [1]	0.532 ± 0.262	18878566	0.175	0.472	0.524	7.256×10^{-2}	1.99
reflectance continuum aband [1]	0.487 ± 0.285	18878566	4.500×10^{-2}	0.479	0.496	9.460×10^{-3}	4.75

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	0.250	0.930	1.000	1.000	1.000	1.000
cloud fraction [1]	2.671×10^{-2}	6.881×10^{-2}	0.106	0.154	0.235	0.943	1.000	1.000	1.000	1.000
cloud top height [m]	242	750	1.094×10^{3}	1.393×10^{3}	1.838×10^{3}	5.761×10^{3}	6.931×10^{3}	7.959×10^{3}	9.259×10^{3}	1.164×10^{4}
cloud optical thickness [1]	1.000	2.53	3.74	4.59	5.44	14.5	21.5	32.4	56.7	250
cloud fraction crb [1]	2.643×10^{-2}	6.803×10^{-2}	0.106	0.154	0.235	0.942	1.000	1.000	1.000	1.000
cloud height crb [m]	0.112	323	615	868	1.233×10^{3}	4.517×10^{3}	5.543×10^{3}	6.524×10^{3}	7.674×10^{3}	9.511×10^{3}
cloud albedo crb [1]	0.0	0.228	0.353	0.418	0.465	0.742	0.834	0.905	0.990	1.000
surface albedo fitted [1]	0.0	9.441×10^{-3}	1.404×10^{-2}	1.834×10^{-2}	2.481×10^{-2}	0.572	0.767	0.877	0.944	1.000
surface albedo fitted crb [1]	5.259×10^{-4}	6.734×10^{-3}	1.008×10^{-2}	1.348×10^{-2}	1.887×10^{-2}	0.557	0.741	0.846	0.899	0.960
fitted root mean square [1]	1.706×10^{-5}	3.385×10^{-5}	5.406×10^{-5}	8.495×10^{-5}	1.481×10^{-4}	9.330×10^{-4}	1.273×10^{-3}	1.621×10^{-3}	2.147×10^{-3}	3.414×10^{-3}
fitted root mean square crb [1]	1.068×10^{-5}	2.337×10^{-5}	3.922×10^{-5}	6.148×10^{-5}	1.056×10^{-4}	8.122×10^{-4}	1.166×10^{-3}	1.526×10^{-3}	2.051×10^{-3}	3.205×10^{-3}
wavelength shift [nm]	-8.456×10^{-3}	-1.122×10^{-3}	1.406×10^{-4}	1.176×10^{-3}	2.874×10^{-3}	1.223×10^{-2}	1.445×10^{-2}	1.639×10^{-2}	1.906×10^{-2}	2.526×10^{-2}
cloud fraction apriori [1]	2.759×10^{-2}	6.603×10^{-2}	0.102	0.150	0.235	0.988	1.000	1.000	1.000	1.000
reflectance blue ocra [1]	0.236	0.260	0.285	0.316	0.370	0.772	0.834	0.880	0.932	1.15
reflectance green ocra [1]	0.153	0.174	0.195	0.224	0.284	0.755	0.826	0.875	0.926	1.11
reflectance continuum aband [1]	3.040×10^{-2}	5.726×10^{-2}	9.201×10^{-2}	0.140	0.239	0.718	0.800	0.851	0.911	1.07

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]	0.535 ± 0.401	8366497	0.900	0.680	0.0	1.000	0.0	0.900
cloud fraction [1]	0.522 ± 0.344	8366497	0.704	0.455	6.370×10^{-3}	1.000	0.208	0.911
cloud top height [m]	$(0.406 \pm 0.268) \times 10^4$	8366497	3.710×10^3	3.502×10^3	0.0	2.000×10^4	1.918×10^3	5.628×10^3
cloud optical thickness [1]	22.9 ± 44.3	8366497	11.4	9.10	1.000	250	5.64	17.0
cloud fraction crb [1]	0.521 ± 0.344	8366497	0.702	0.454	8.467×10^{-3}	1.000	0.208	0.910
cloud height crb [m]	$(0.320 \pm 0.224) \times 10^4$	8366497	3.255×10^3	2.790×10^3	0.0	2.000×10^4	1.342×10^3	4.597×10^3
cloud albedo crb [1]	0.605 ± 0.228	8366497	0.296	0.588	0.0	1.000	0.467	0.763
surface albedo fitted [1]	0.284 ± 0.286	8366497	0.521	0.172	0.0	1.000	3.330×10^{-2}	0.554
surface albedo fitted crb [1]	0.273 ± 0.276	8366497	0.516	0.169	0.0	1.000	2.566×10^{-2}	0.542
fitted root mean square [1]	$(6.380 \pm 8.891) \times 10^{-4}$	8366497	6.864×10^{-4}	3.575×10^{-4}	1.299×10^{-6}	0.246	1.395×10^{-4}	8.259×10^{-4}
fitted root mean square crb [1]	$(5.071 \pm 6.932) \times 10^{-4}$	8366497	5.256×10^{-4}	2.351×10^{-4}	1.504×10^{-6}	3.160×10^{-2}	8.671×10^{-5}	6.123×10^{-4}
wavelength shift [nm]	$(7.472 \pm 6.819) \times 10^{-3}$	8366497	9.304×10^{-3}	6.893×10^{-3}	-4.635×10^{-2}	5.921×10^{-2}	2.514×10^{-3}	1.182×10^{-2}
cloud fraction apriori [1]	0.531 ± 0.349	8366497	0.743	0.468	0.0	1.000	0.209	0.952
reflectance blue ocra [1]	0.579 ± 0.229	8366497	0.375	0.572	0.151	1.93	0.375	0.750
reflectance green ocra [1]	0.531 ± 0.254	8366497	0.439	0.532	9.021×10^{-2}	1.90	0.293	0.732
reflectance continuum aband [1]	0.487 ± 0.276	8366497	0.437	0.499	1.240×10^{-2}	3.81	0.257	0.694

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]	0.660 ± 0.360	10512069	0.550	0.820	0.0	1.000	0.400	0.950
cloud fraction [1]	0.567 ± 0.336	10512069	0.700	0.531	7.609×10^{-3}	1.000	0.263	0.963
cloud top height [m]	$(0.405 \pm 0.277) \times 10^4$	10512069	4.087×10^3	3.457×10^3	0.0	2.000×10^4	1.777×10^3	5.864×10^3
cloud optical thickness [1]	13.6 ± 21.6	10512069	7.91	8.81	1.000	250	5.30	13.2
cloud fraction crb [1]	0.566 ± 0.336	10512069	0.700	0.531	4.007×10^{-3}	1.000	0.262	0.962
cloud height crb [m]	$(0.307 \pm 0.237) \times 10^4$	10512069	3.280×10^3	2.522×10^3	0.0	2.000×10^4	1.153×10^3	4.434×10^3
cloud albedo crb [1]	0.587 ± 0.206	10512069	0.260	0.560	0.0	1.000	0.465	0.724
surface albedo fitted [1]	0.276 ± 0.375	10512069	0.672	3.934×10^{-2}	0.0	1.000	2.075×10^{-2}	0.693
surface albedo fitted crb [1]	0.265 ± 0.364	10512069	0.672	3.189×10^{-2}	0.0	1.000	1.550×10^{-2}	0.688
fitted root mean square [1]	$(7.107 \pm 11.523) \times 10^{-4}$	10512069	8.466×10^{-4}	4.937×10^{-4}	9.364×10^{-7}	0.811	1.577×10^{-4}	1.004×10^{-3}
fitted root mean square crb [1]	$(6.526 \pm 12.007) \times 10^{-4}$	10512069	8.074×10^{-4}	4.071×10^{-4}	7.884×10^{-7}	0.872	1.273×10^{-4}	9.347×10^{-4}
wavelength shift [nm]	$(8.045 \pm 6.786) \times 10^{-3}$	10512069	9.327×10^{-3}	7.823×10^{-3}	-4.396×10^{-2}	0.476	3.185×10^{-3}	1.251×10^{-2}
cloud fraction apriori [1]	0.571 ± 0.341	10512069	0.739	0.540	0.0	1.000	0.261	1.000
reflectance blue ocra [1]	0.581 ± 0.237	10512069	0.427	0.558	0.142	2.01	0.365	0.792
reflectance green ocra [1]	0.533 ± 0.267	10512069	0.502	0.517	7.256×10^{-2}	1.99	0.276	0.779
reflectance continuum aband [1]	0.486 ± 0.292	10512069	0.520	0.492	9.460×10^{-3}	4.75	0.222	0.742

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]	0.709 ± 0.345	11793693	0.590	0.900	0.0	1.000	0.400	0.990
cloud fraction [1]	0.582 ± 0.357	11793693	0.771	0.591	7.035×10^{-3}	1.000	0.226	0.997
cloud top height [m]	$(0.359 \pm 0.260) \times 10^4$	11793693	3.319×10^3	2.821×10^3	0.0	2.000×10^4	1.613×10^3	4.933×10^3
cloud optical thickness [1]	17.2 ± 27.5	11793693	8.58	9.99	1.000	250	7.03	15.6
cloud fraction crb [1]	0.581 ± 0.357	11793693	0.772	0.590	4.007×10^{-3}	1.000	0.225	0.997
cloud height crb [m]	$(0.286 \pm 0.229) \times 10^4$	11793693	3.066×10^3	2.178×10^3	0.0	2.000×10^4	1.078×10^3	4.144×10^3
cloud albedo crb [1]	0.549 ± 0.169	11793693	0.189	0.531	0.0	1.000	0.455	0.643
surface albedo fitted [1]	$(8.614 \pm 17.935) \times 10^{-2}$	11793693	2.956×10^{-2}	2.981×10^{-2}	0.0	1.000	1.824×10^{-2}	4.780×10^{-2}
surface albedo fitted crb [1]	$(7.896 \pm 17.473) \times 10^{-2}$	11793693	2.579×10^{-2}	2.314×10^{-2}	0.0	1.000	1.338×10^{-2}	3.916×10^{-2}
fitted root mean square [1]	$(5.968 \pm 10.926) \times 10^{-4}$	11793693	7.233×10^{-4}	3.069×10^{-4}	9.364×10^{-7}	0.811	9.692×10^{-5}	8.202×10^{-4}
fitted root mean square crb [1]	$(5.633 \pm 11.562) \times 10^{-4}$	11793693	7.004×10^{-4}	2.657×10^{-4}	7.884×10^{-7}	0.872	8.111×10^{-5}	7.815×10^{-4}
wavelength shift [nm]	$(7.240 \pm 7.189) \times 10^{-3}$	11793693	9.643×10^{-3}	6.505×10^{-3}	-4.635×10^{-2}	0.476	2.191×10^{-3}	1.183×10^{-2}
cloud fraction apriori [1]	0.583 ± 0.363	11793693	0.783	0.594	0.0	1.000	0.217	1.000
reflectance blue ocra [1]	0.508 ± 0.200	11793693	0.314	0.475	0.157	1.94	0.337	0.651
reflectance green ocra [1]	0.448 ± 0.227	11793693	0.381	0.415	8.577×10^{-2}	1.90	0.241	0.622
reflectance continuum aband [1]	0.383 ± 0.261	11793693	0.450	0.359	1.251×10^{-2}	2.81	0.139	0.590

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]	0.436 ± 0.381	5437276	0.700	0.590	0.0	1.000	0.0	0.700
cloud fraction [1]	0.487 ± 0.295	5437276	0.437	0.429	6.370×10^{-3}	1.000	0.253	0.690
cloud top height [m]	$(0.507 \pm 0.274) \times 10^4$	5437276	3.740×10^3	4.968×10^3	0.0	2.000×10^4	3.004×10^3	6.745×10^3
cloud optical thickness [1]	14.7 ± 35.4	5437276	5.78	5.64	1.000	250	4.24	10.0
cloud fraction crb [1]	0.487 ± 0.295	5437276	0.437	0.430	8.364×10^{-3}	1.000	0.254	0.692
cloud height crb [m]	$(0.373 \pm 0.228) \times 10^4$	5437276	3.165×10^3	3.502×10^3	0.0	2.000×10^4	1.972×10^3	5.137×10^3
cloud albedo crb [1]	0.667 ± 0.258	5437276	0.356	0.707	0.0	1.000	0.517	0.873
surface albedo fitted [1]	0.637 ± 0.295	5437276	0.595	0.737	0.0	1.000	0.315	0.910
surface albedo fitted crb [1]	0.620 ± 0.280	5437276	0.558	0.720	0.0	1.000	0.318	0.875
fitted root mean square [1]	$(8.280 \pm 9.553) \times 10^{-4}$	5437276	7.879×10^{-4}	6.129×10^{-4}	2.559×10^{-6}	0.331	3.040×10^{-4}	1.092×10^{-3}
fitted root mean square crb [1]	$(6.627 \pm 7.159) \times 10^{-4}$	5437276	7.433×10^{-4}	4.137×10^{-4}	1.623×10^{-6}	3.160×10^{-2}	1.738×10^{-4}	9.171×10^{-4}
wavelength shift [nm]	$(8.753 \pm 5.974) \times 10^{-3}$	5437276	8.465×10^{-3}	8.723×10^{-3}	-3.725×10^{-2}	6.488×10^{-2}	4.354×10^{-3}	1.282×10^{-2}
cloud fraction apriori [1]	0.503 ± 0.301	5437276	0.462	0.447	0.0	1.000	0.262	0.724
reflectance blue ocra [1]	0.708 ± 0.240	5437276	0.354	0.784	0.142	2.01	0.518	0.872
reflectance green ocra [1]	0.682 ± 0.261	5437276	0.394	0.772	7.256×10^{-2}	1.99	0.476	0.870
reflectance continuum aband [1]	0.671 ± 0.237	5437276	0.354	0.727	1.319×10^{-2}	4.75	0.488	0.842

3 Granule outlines

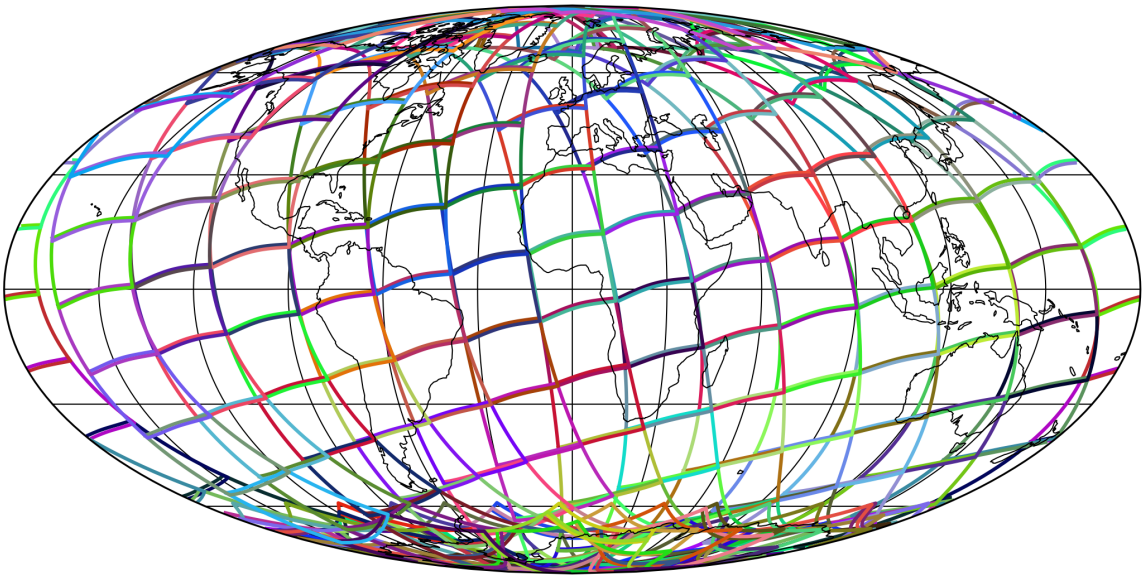

Figure 1: Outline of the granules.

4 Input data monitoring

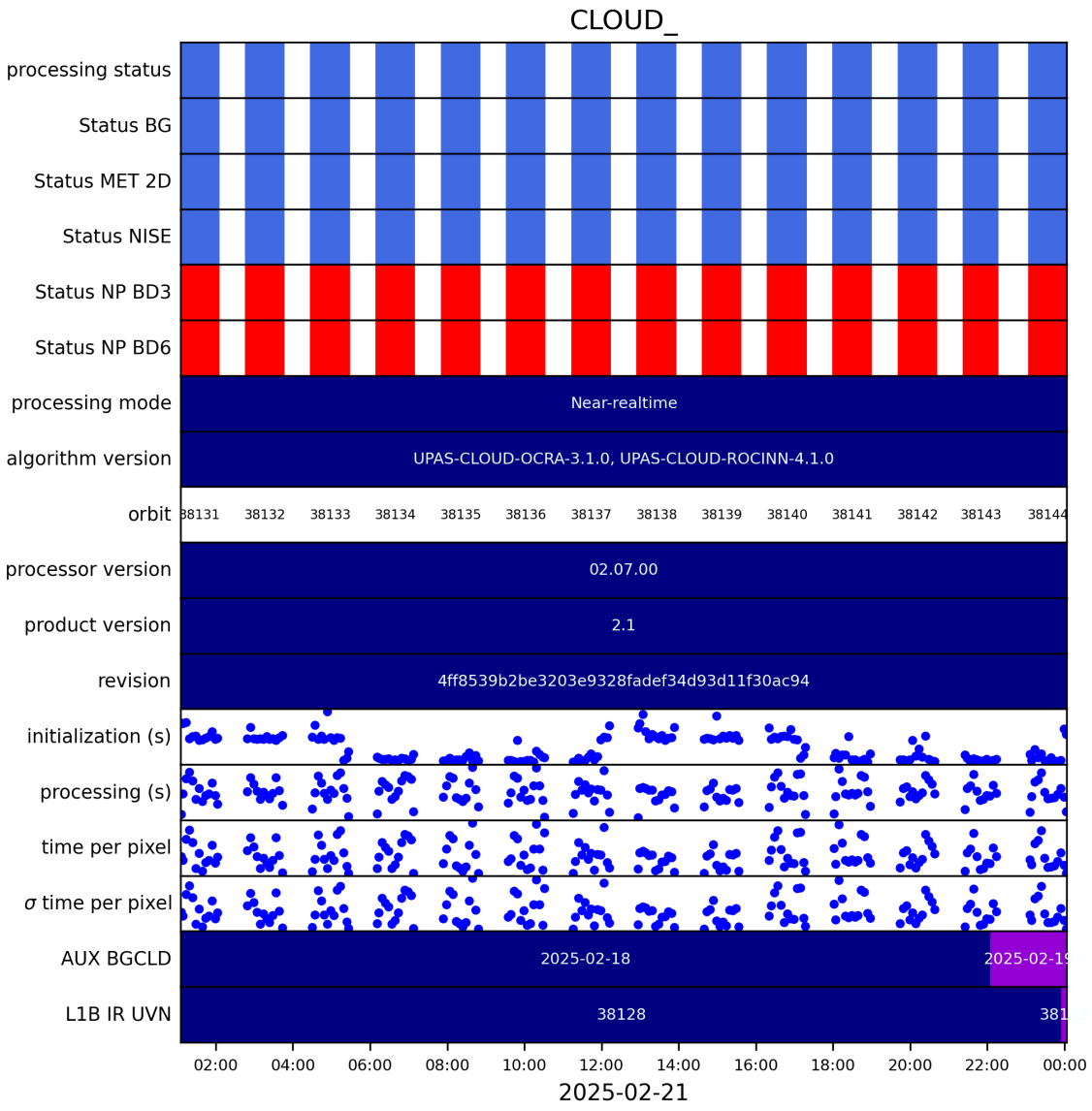

Figure 2: Input data per granule

5 Warnings and errors

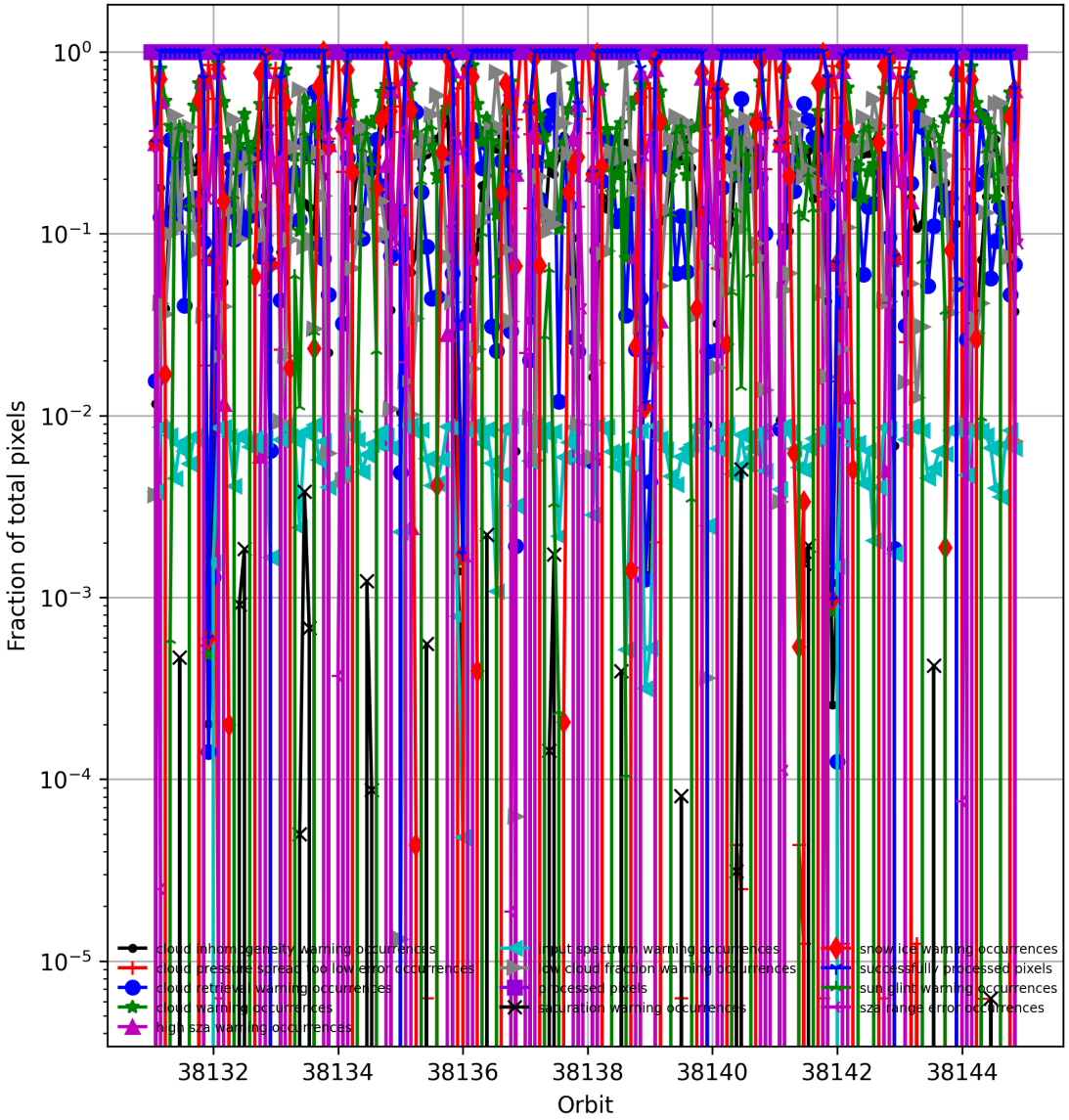

Figure 3: Fraction of pixels with specific warnings and errors during processing

6 World maps

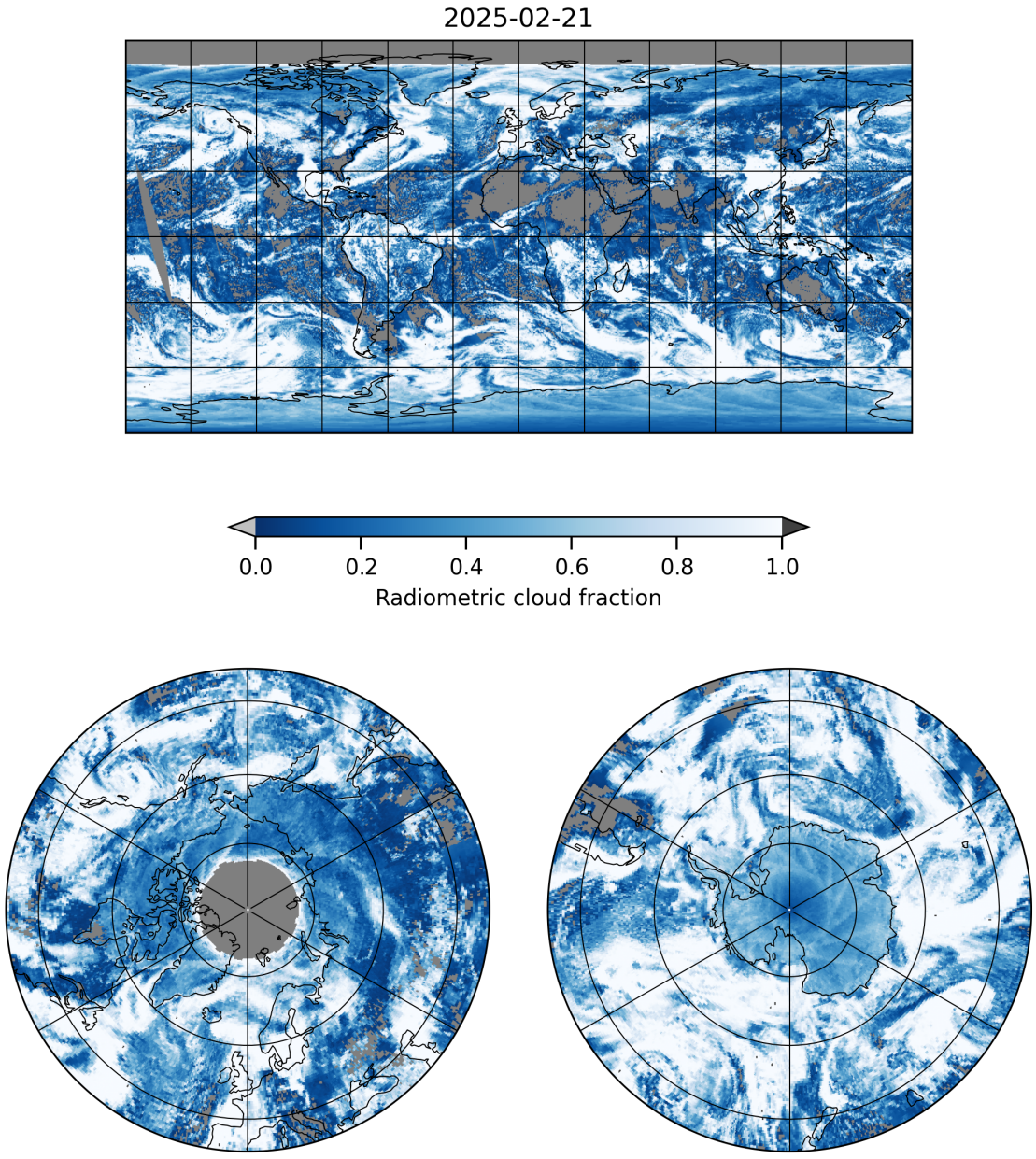

Figure 4: Map of “Radiometric cloud fraction” for 2025-02-21 to 2025-02-22

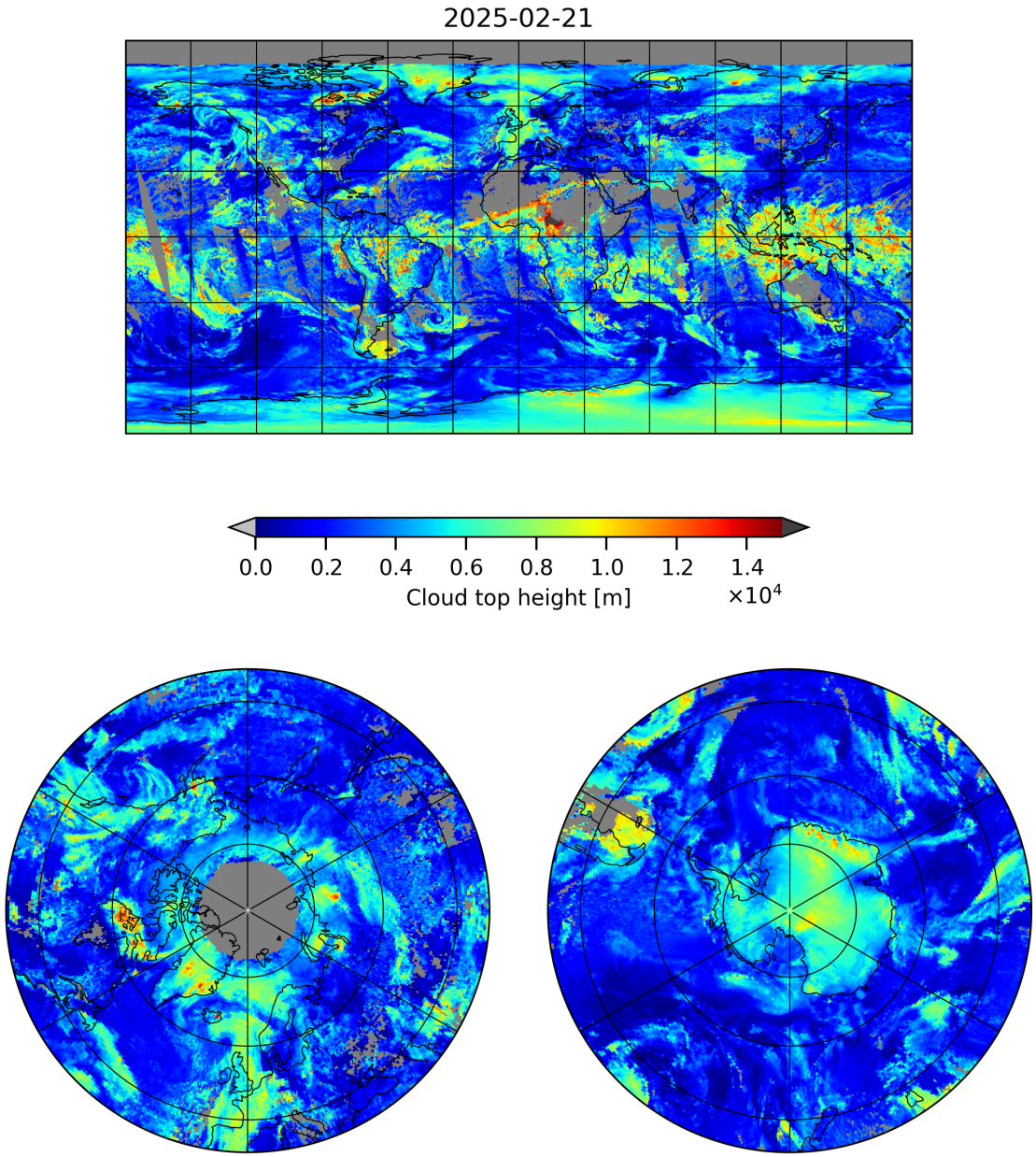

Figure 5: Map of “Cloud top height” for 2025-02-21 to 2025-02-22

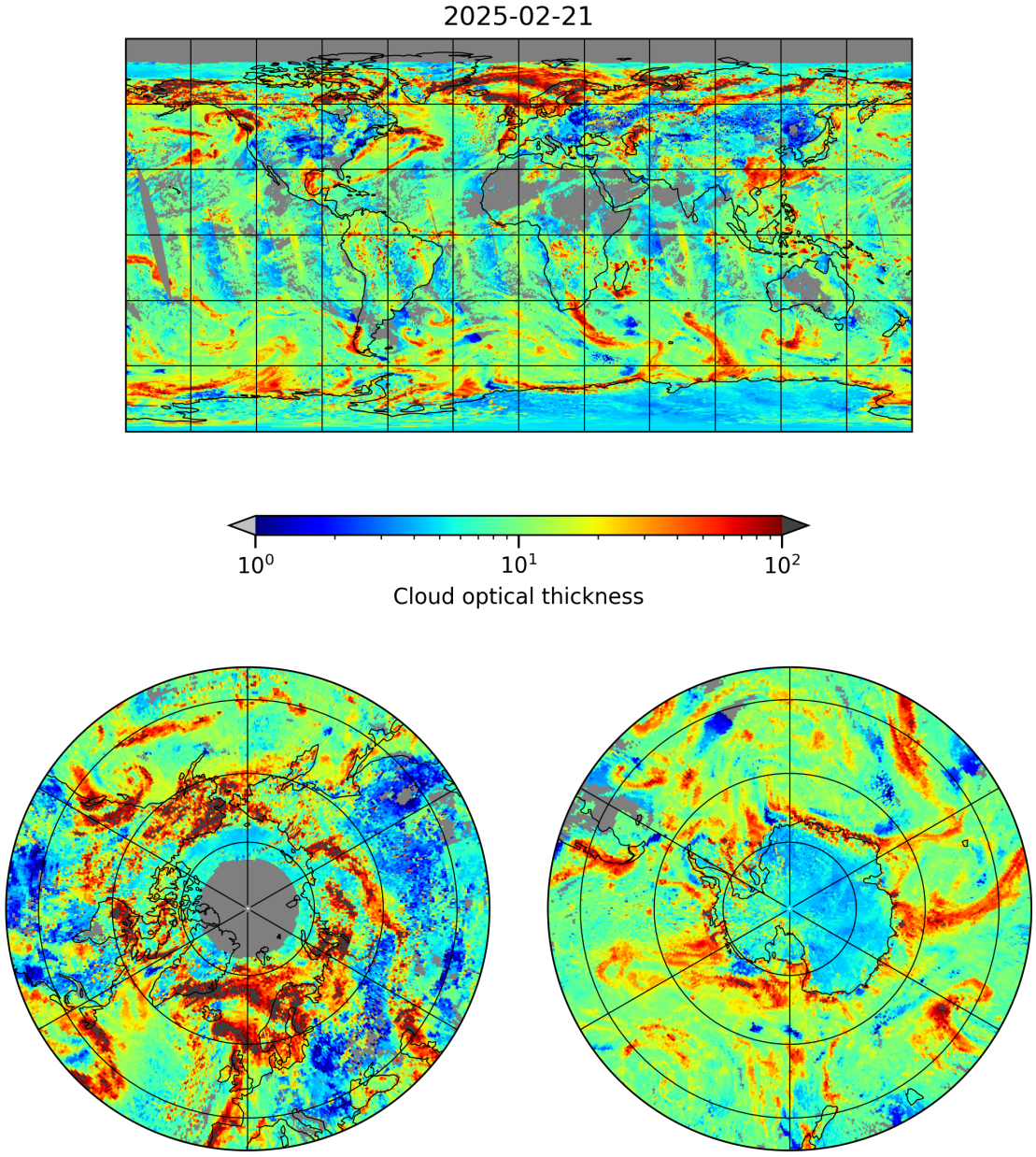

Figure 6: Map of “Cloud optical thickness” for 2025-02-21 to 2025-02-22

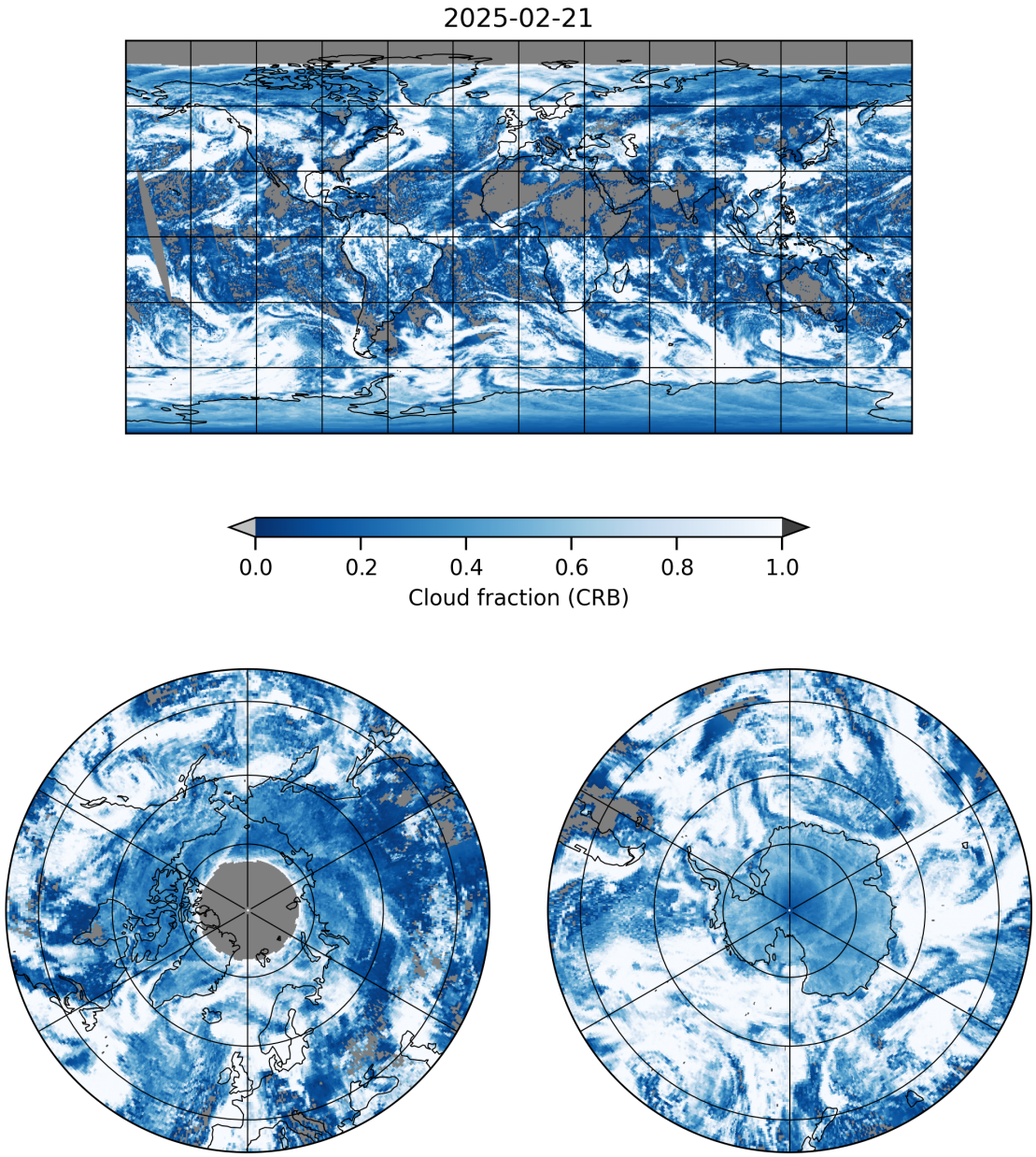

Figure 7: Map of “Cloud fraction (CRB)” for 2025-02-21 to 2025-02-22

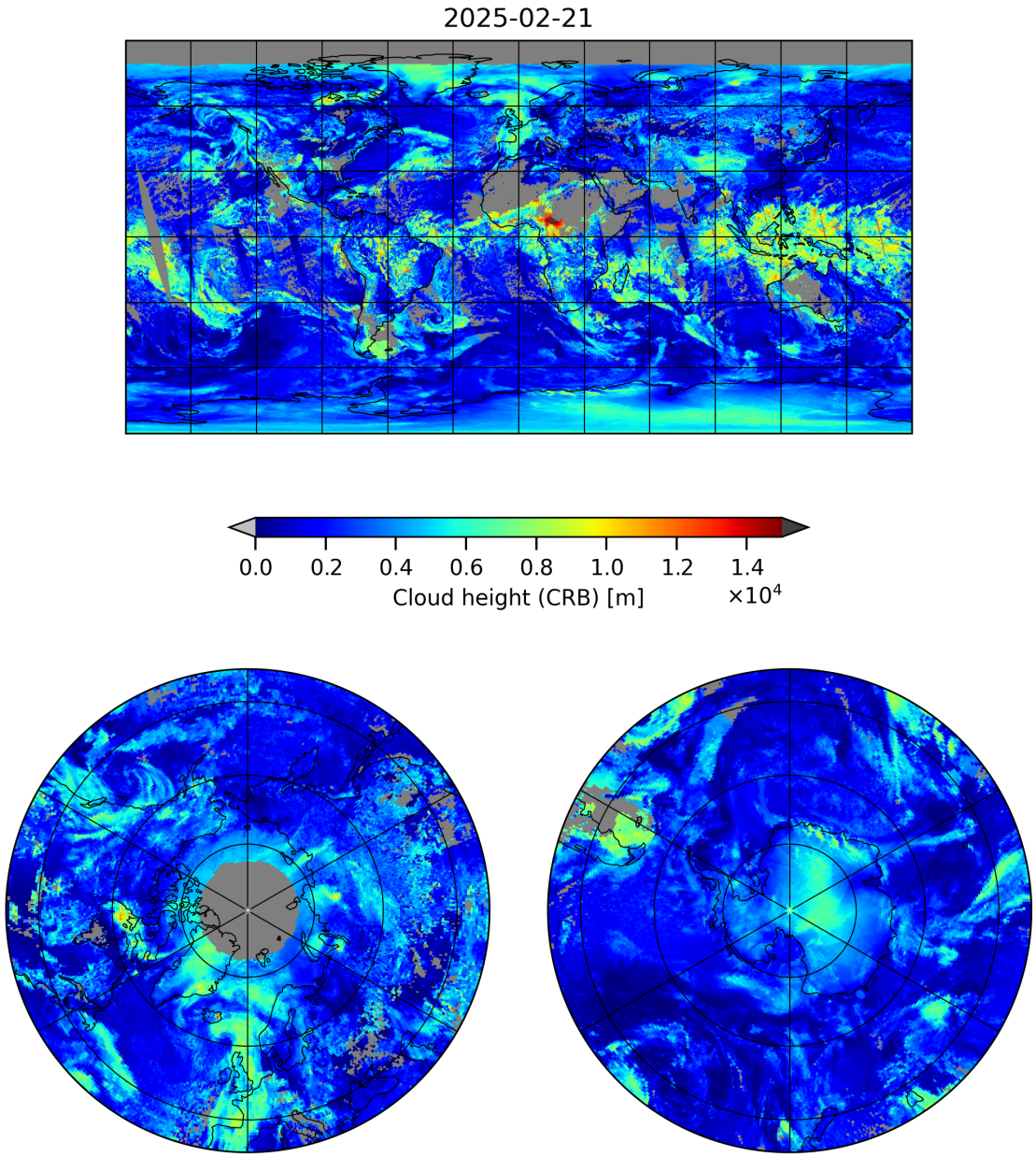

Figure 8: Map of “Cloud height (CRB)” for 2025-02-21 to 2025-02-22

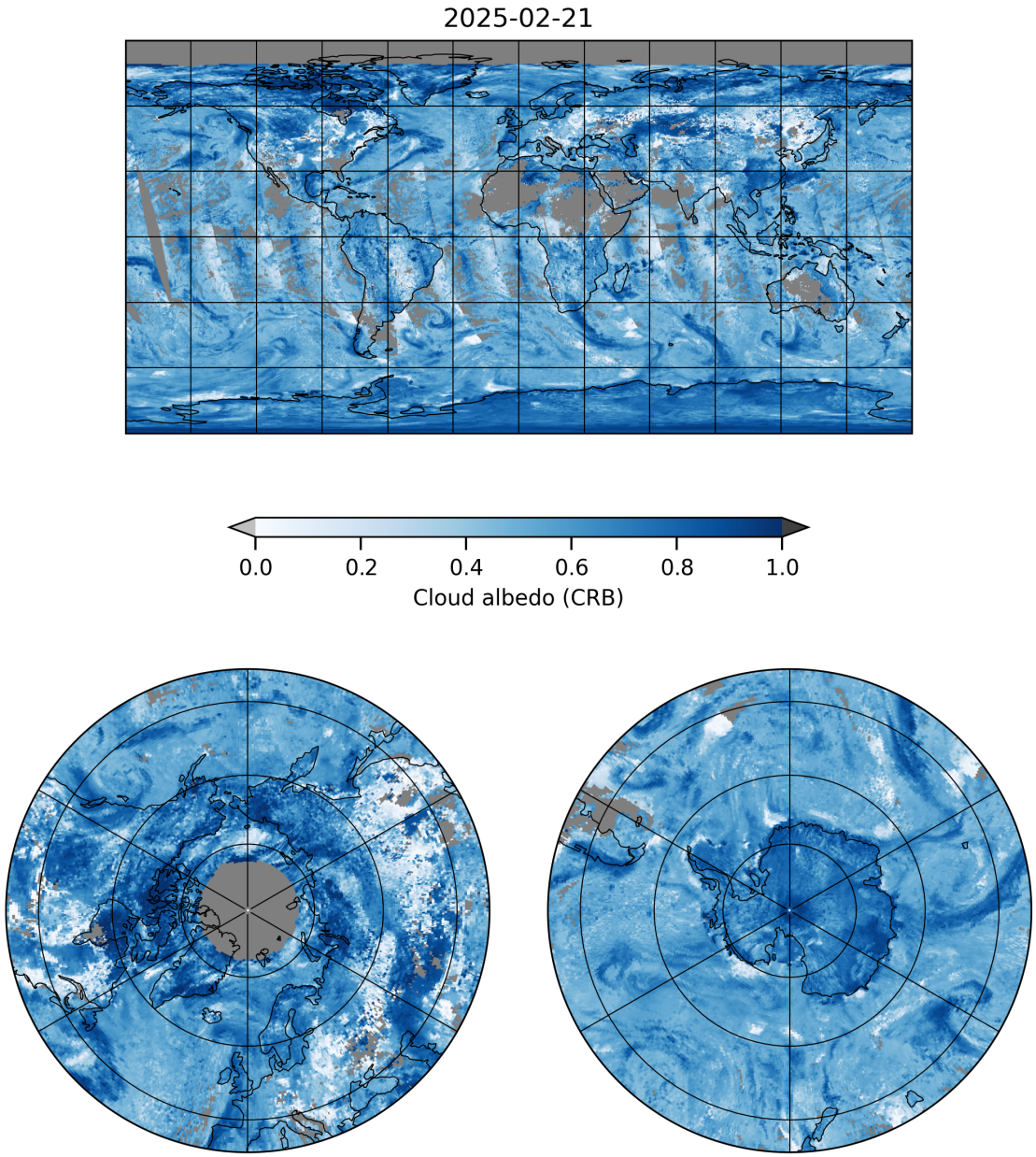

Figure 9: Map of “Cloud albedo (CRB)” for 2025-02-21 to 2025-02-22

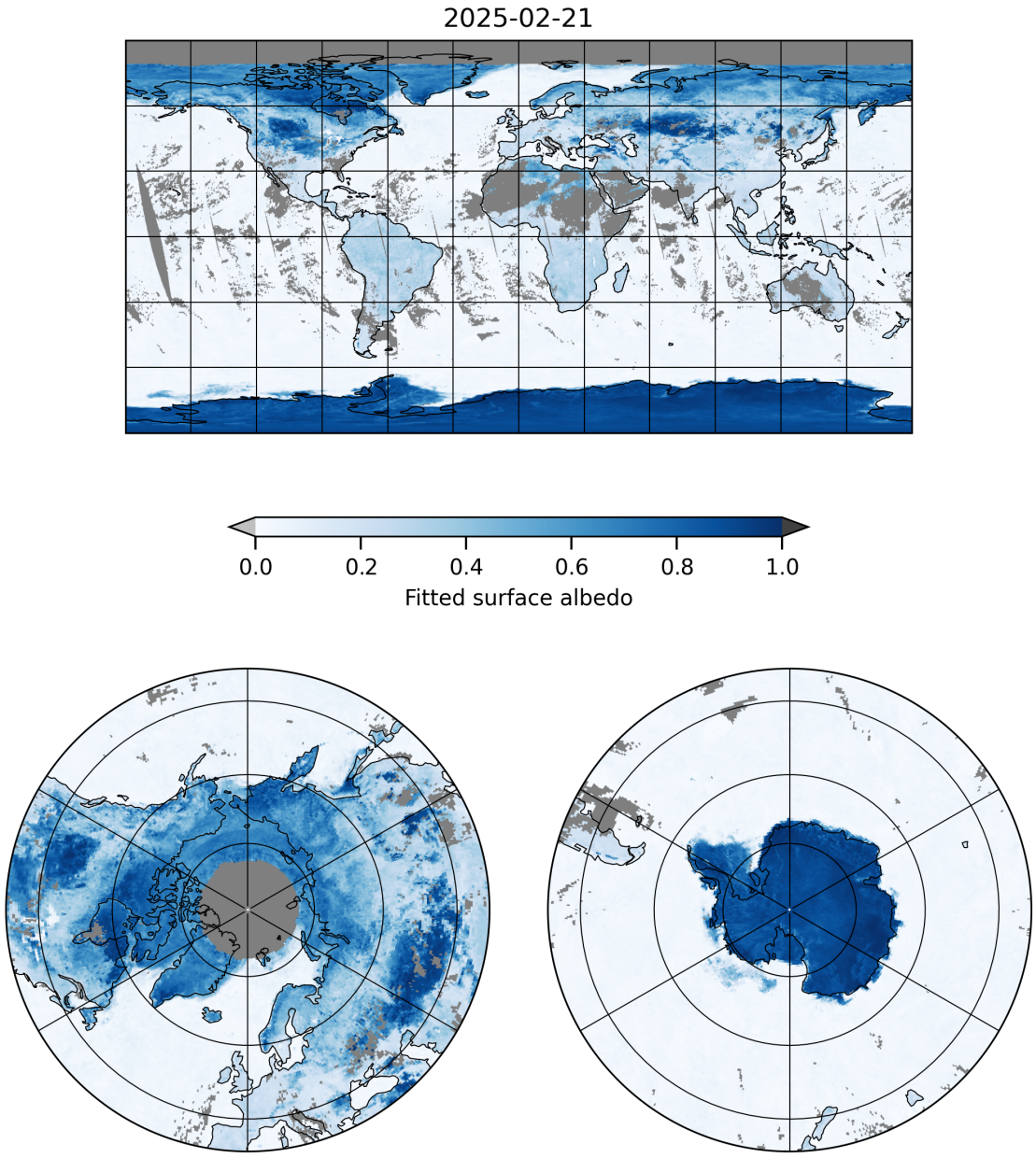

Figure 10: Map of “Fitted surface albedo” for 2025-02-21 to 2025-02-22

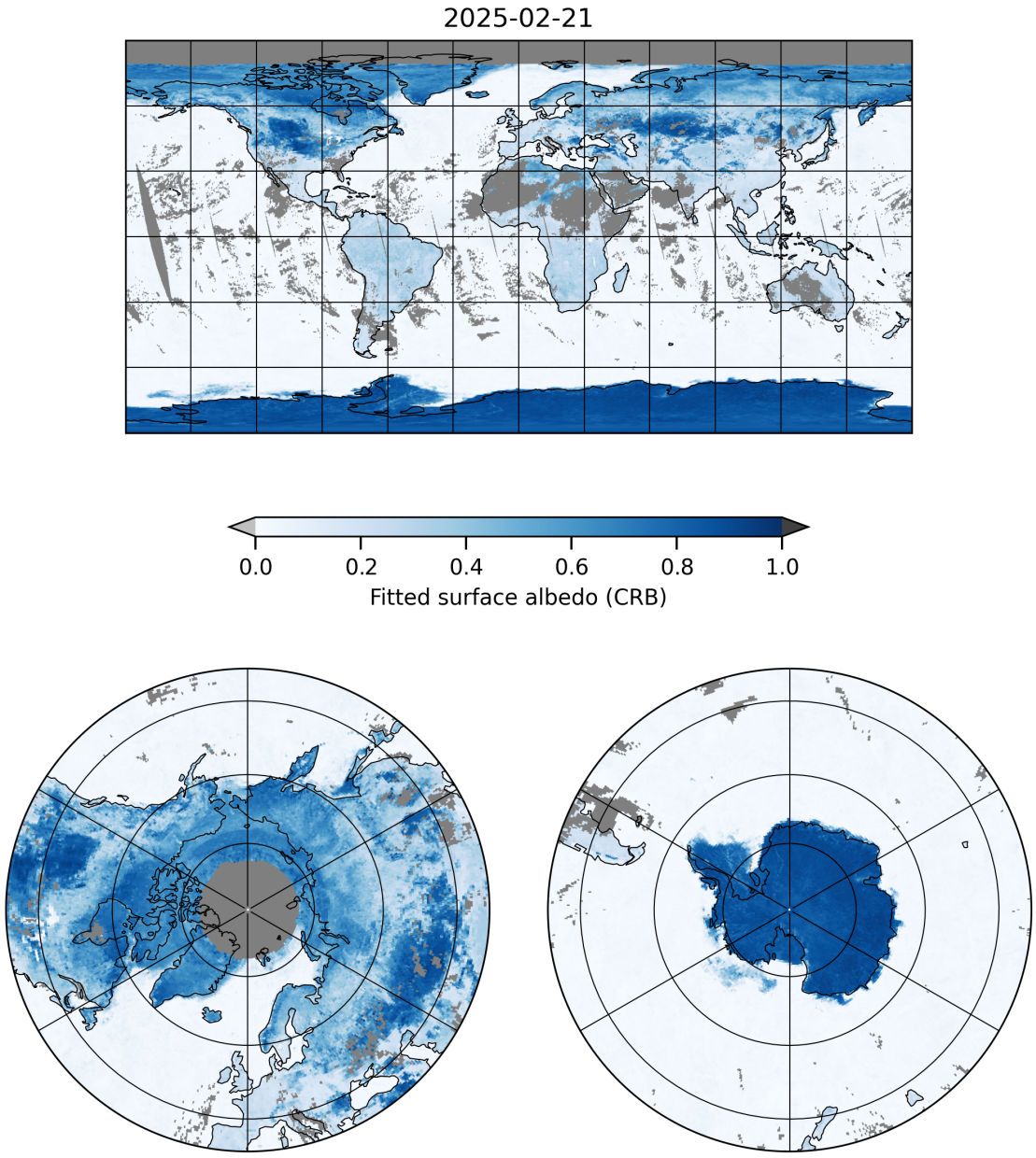

Figure 11: Map of “Fitted surface albedo (CRB)” for 2025-02-21 to 2025-02-22

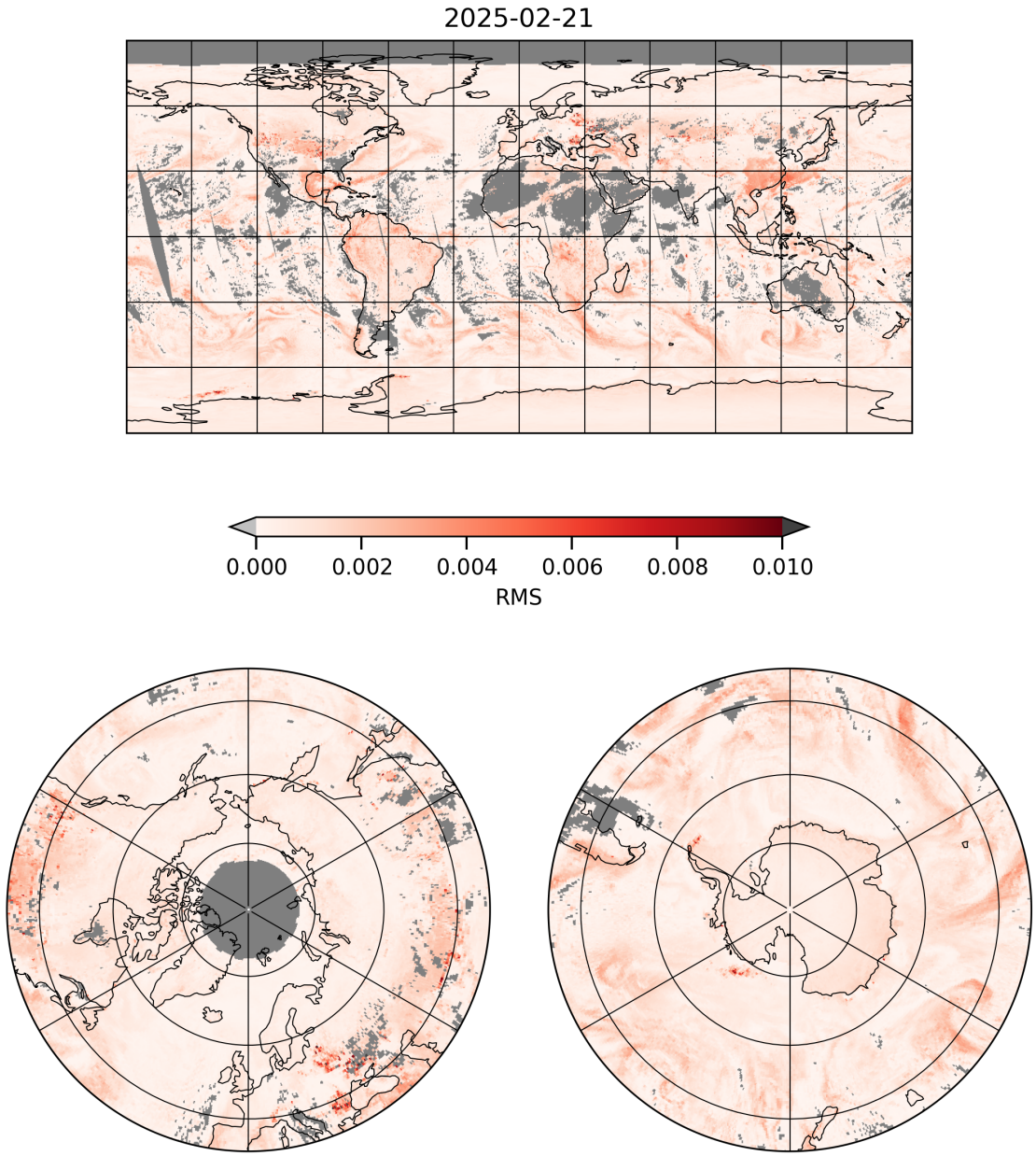

Figure 12: Map of “RMS” for 2025-02-21 to 2025-02-22

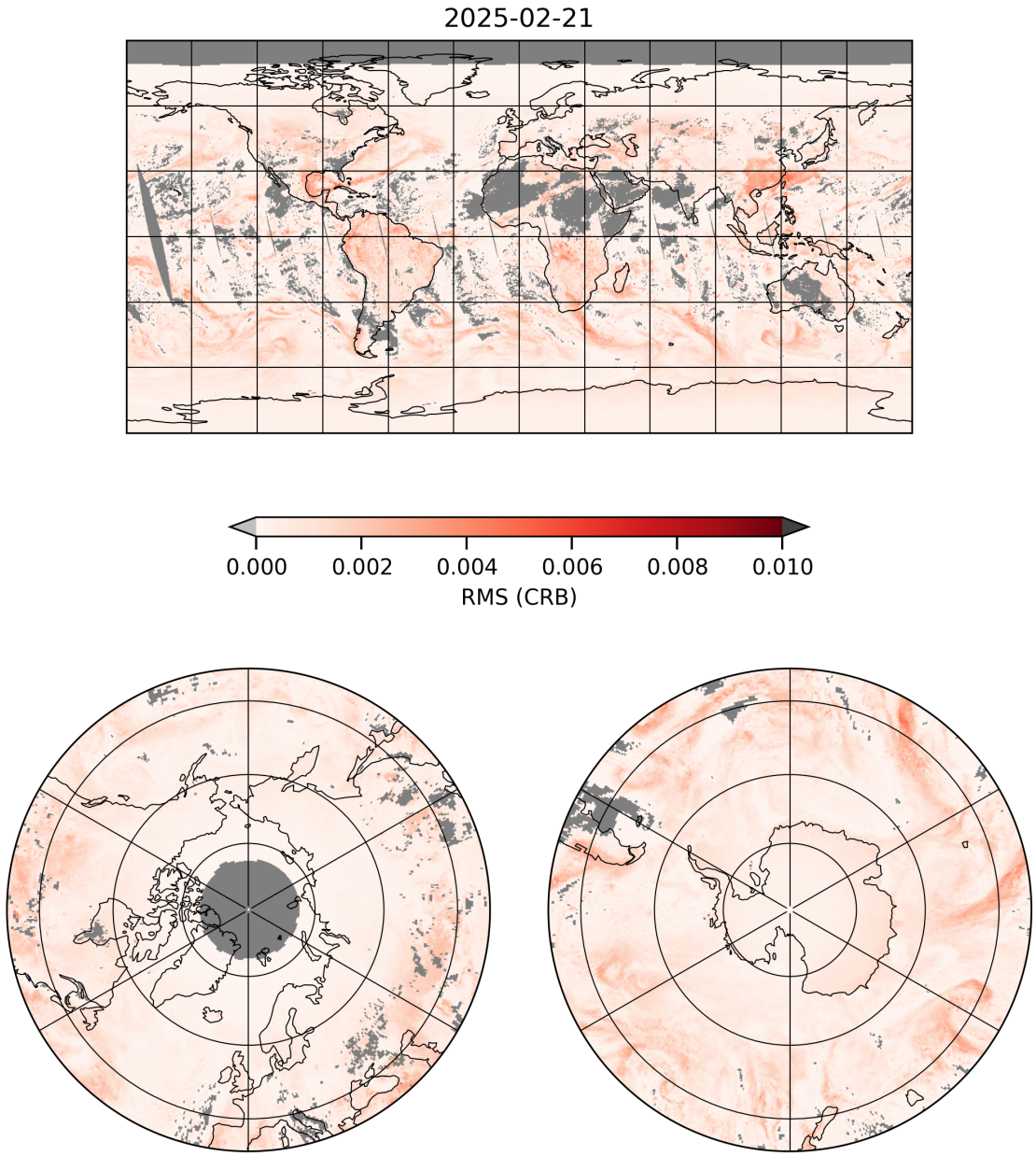

Figure 13: Map of “RMS (CRB)” for 2025-02-21 to 2025-02-22

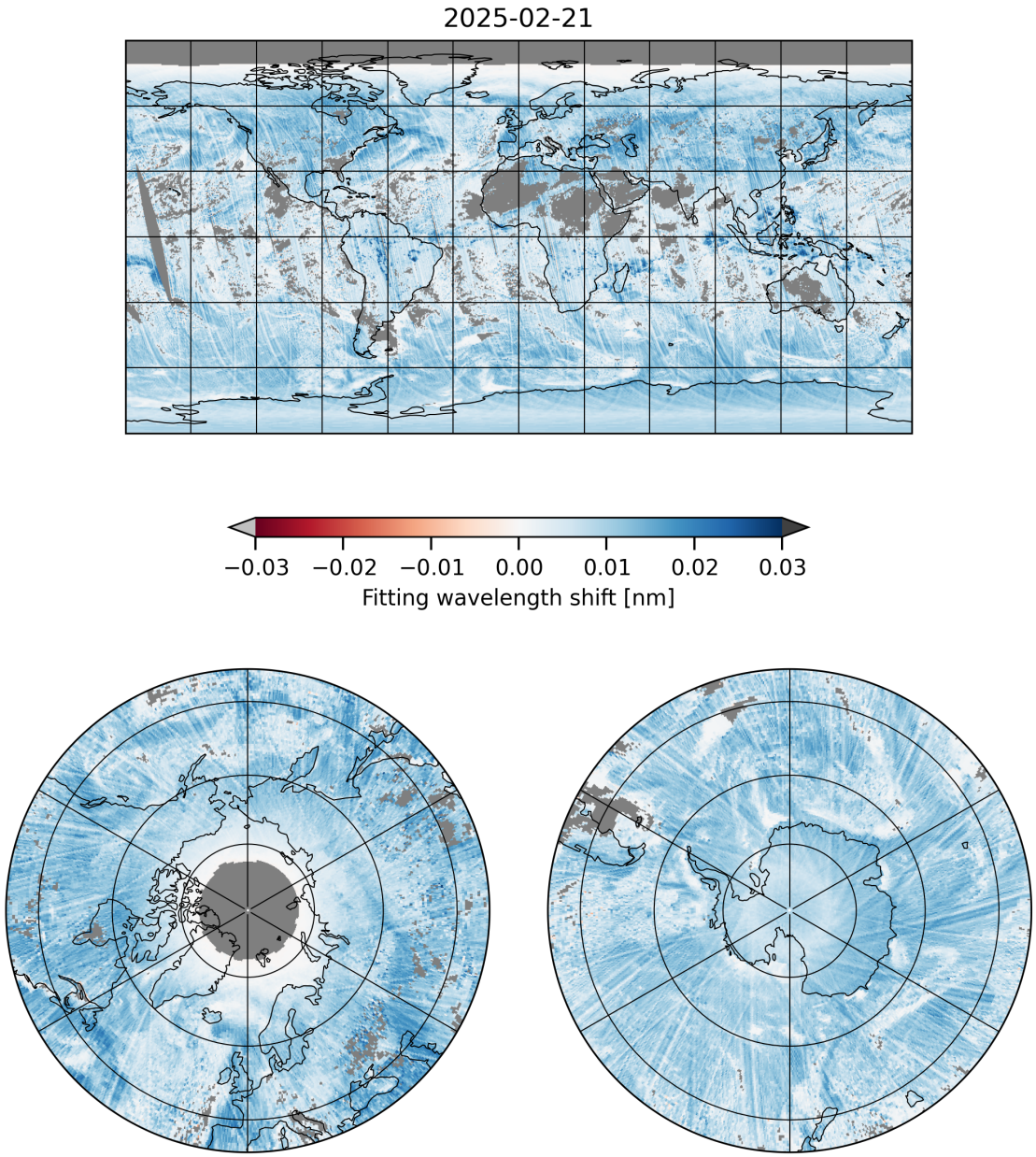

Figure 14: Map of “Fitting wavelength shift” for 2025-02-21 to 2025-02-22

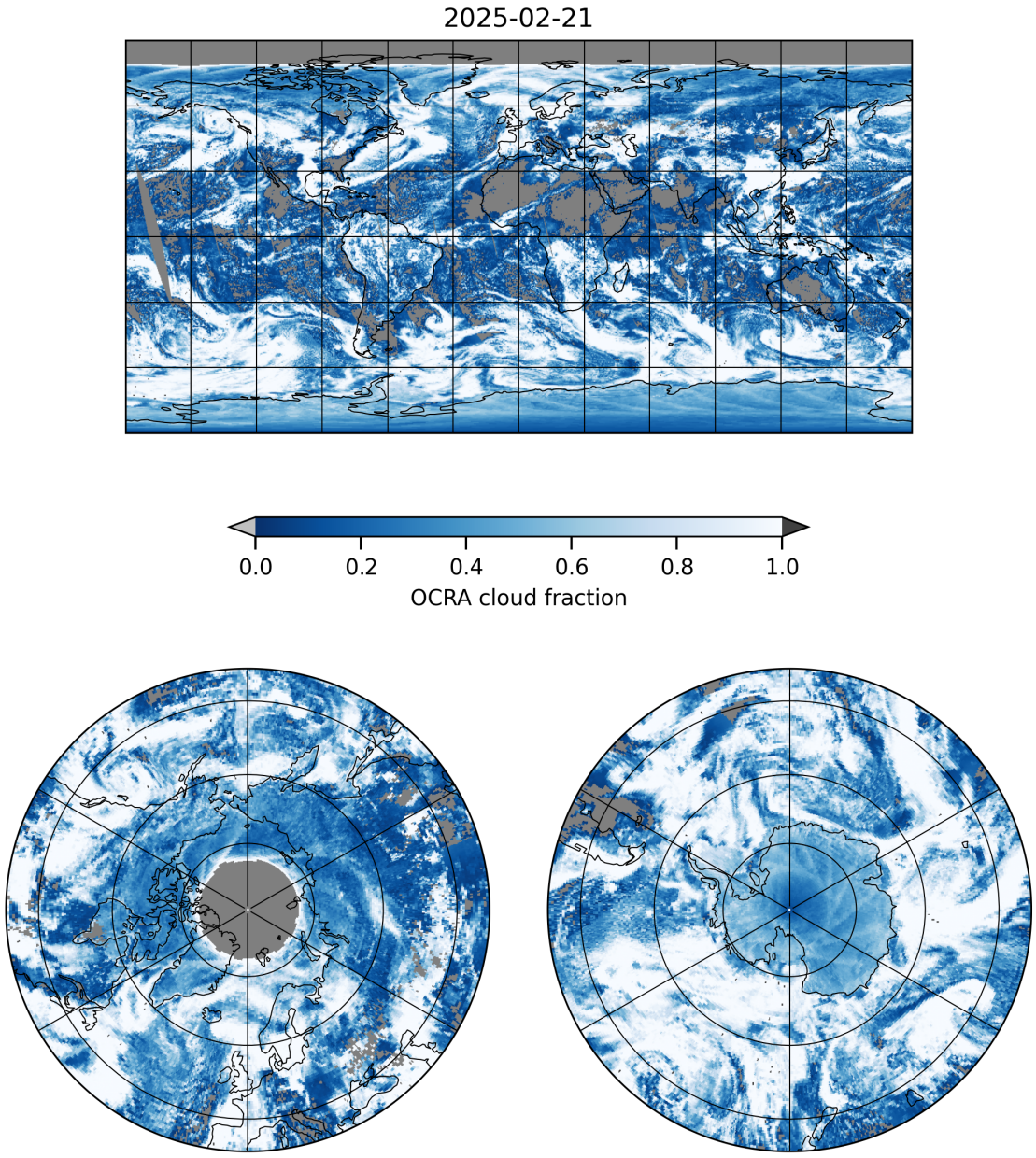

Figure 15: Map of “OCRA cloud fraction” for 2025-02-21 to 2025-02-22

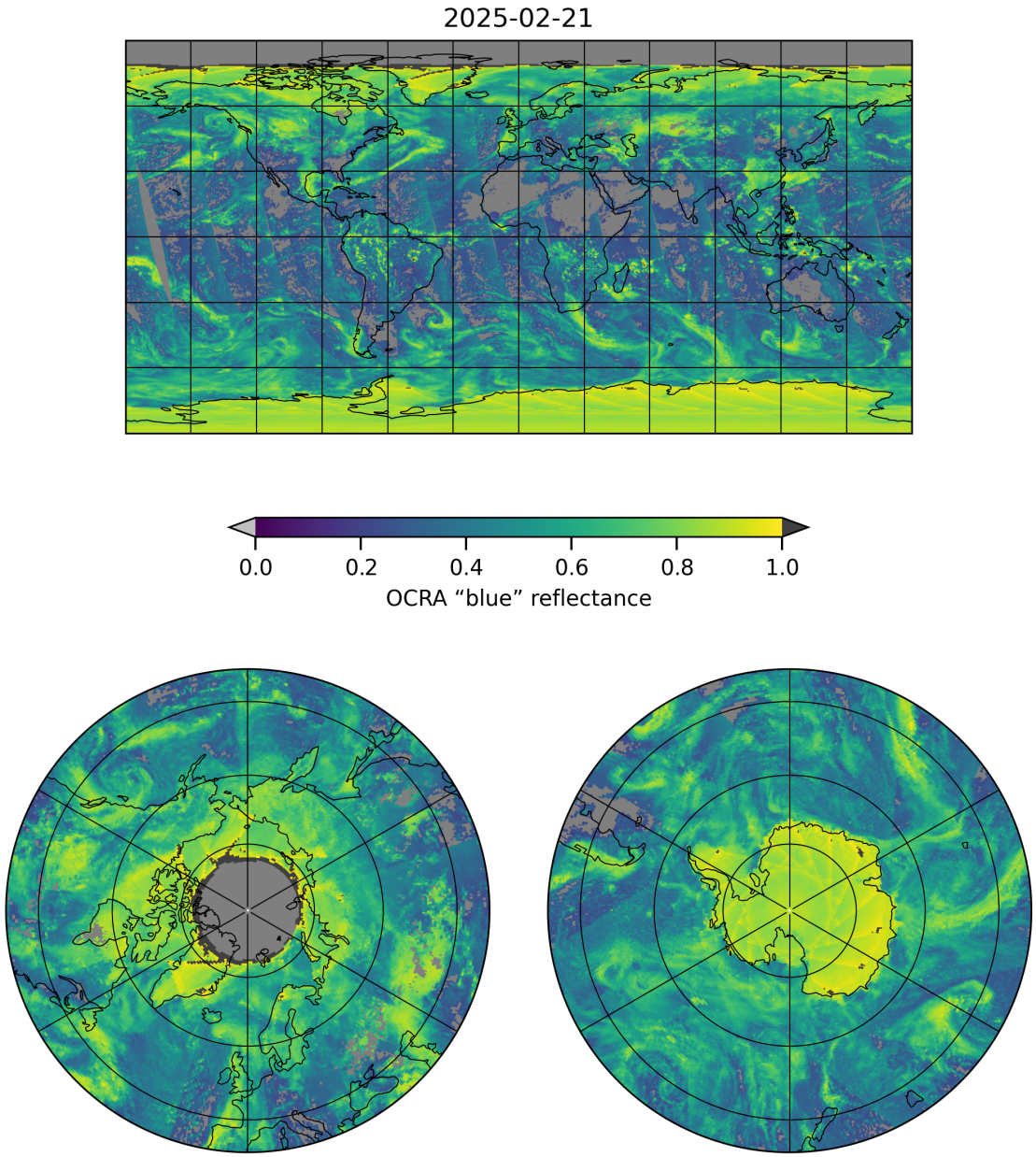

Figure 16: Map of “OCRA “blue” reflectance” for 2025-02-21 to 2025-02-22

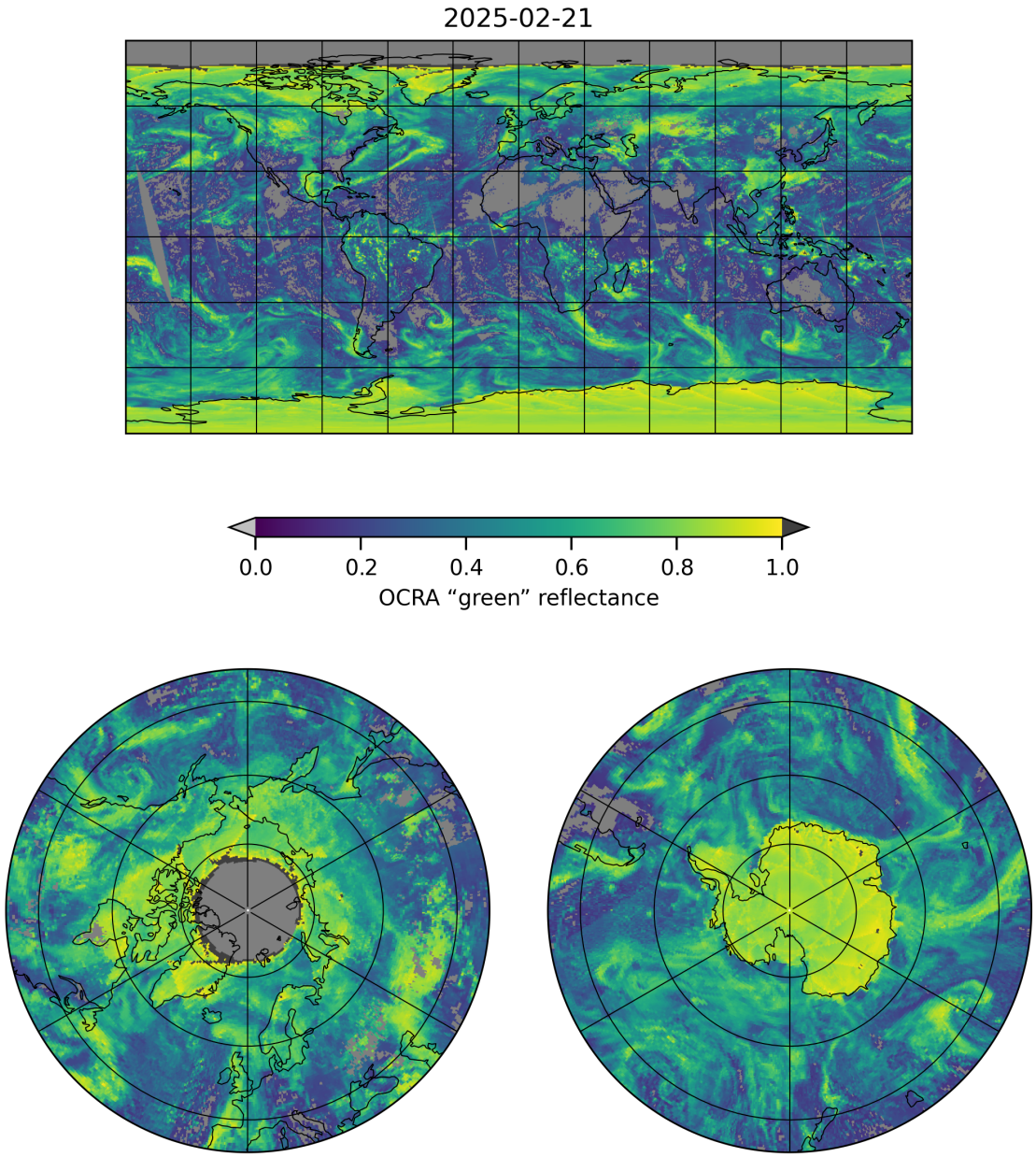

Figure 17: Map of “OCRA “green” reflectance” for 2025-02-21 to 2025-02-22

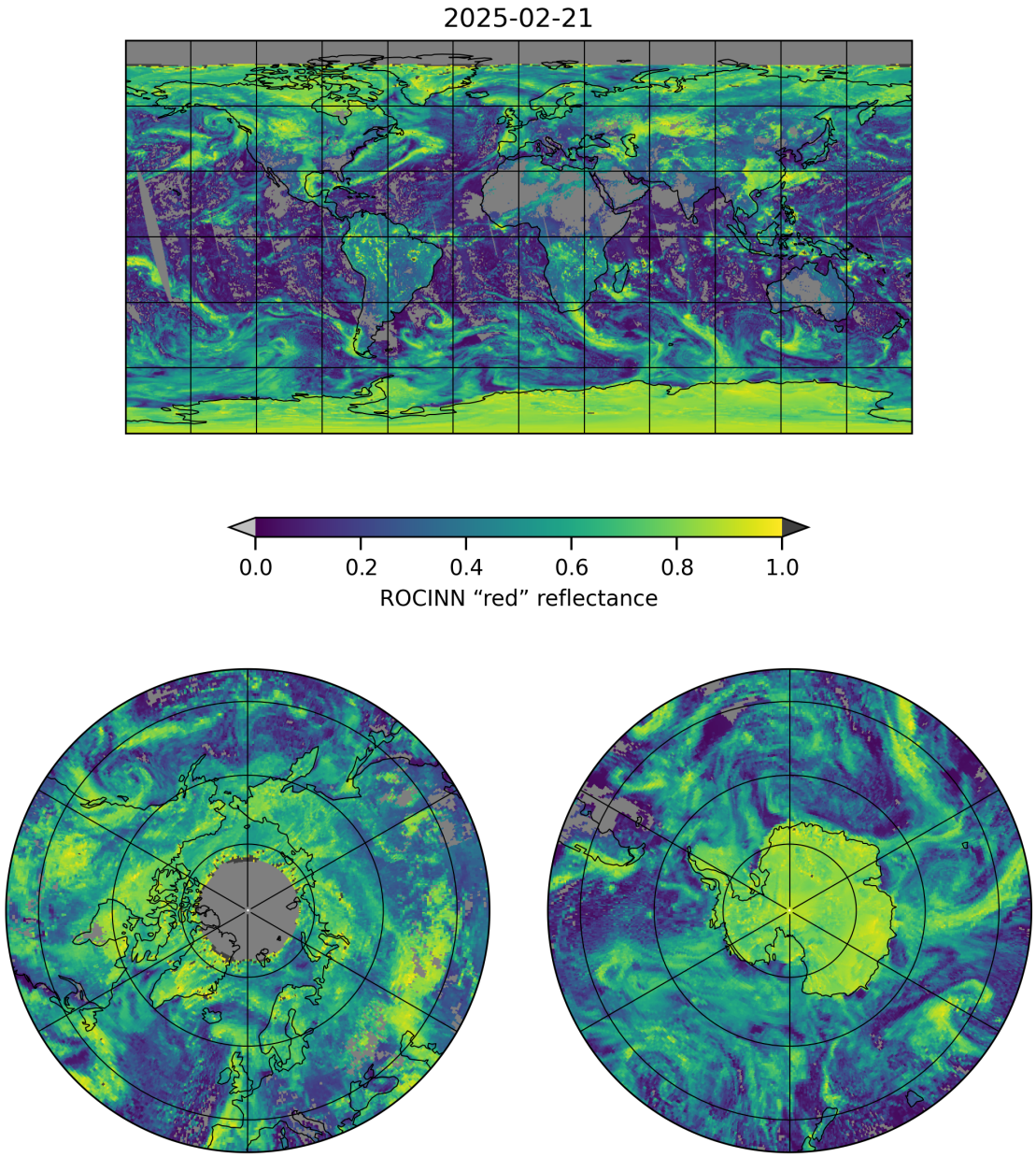

Figure 18: Map of “ROCINN “red” reflectance” for 2025-02-21 to 2025-02-22

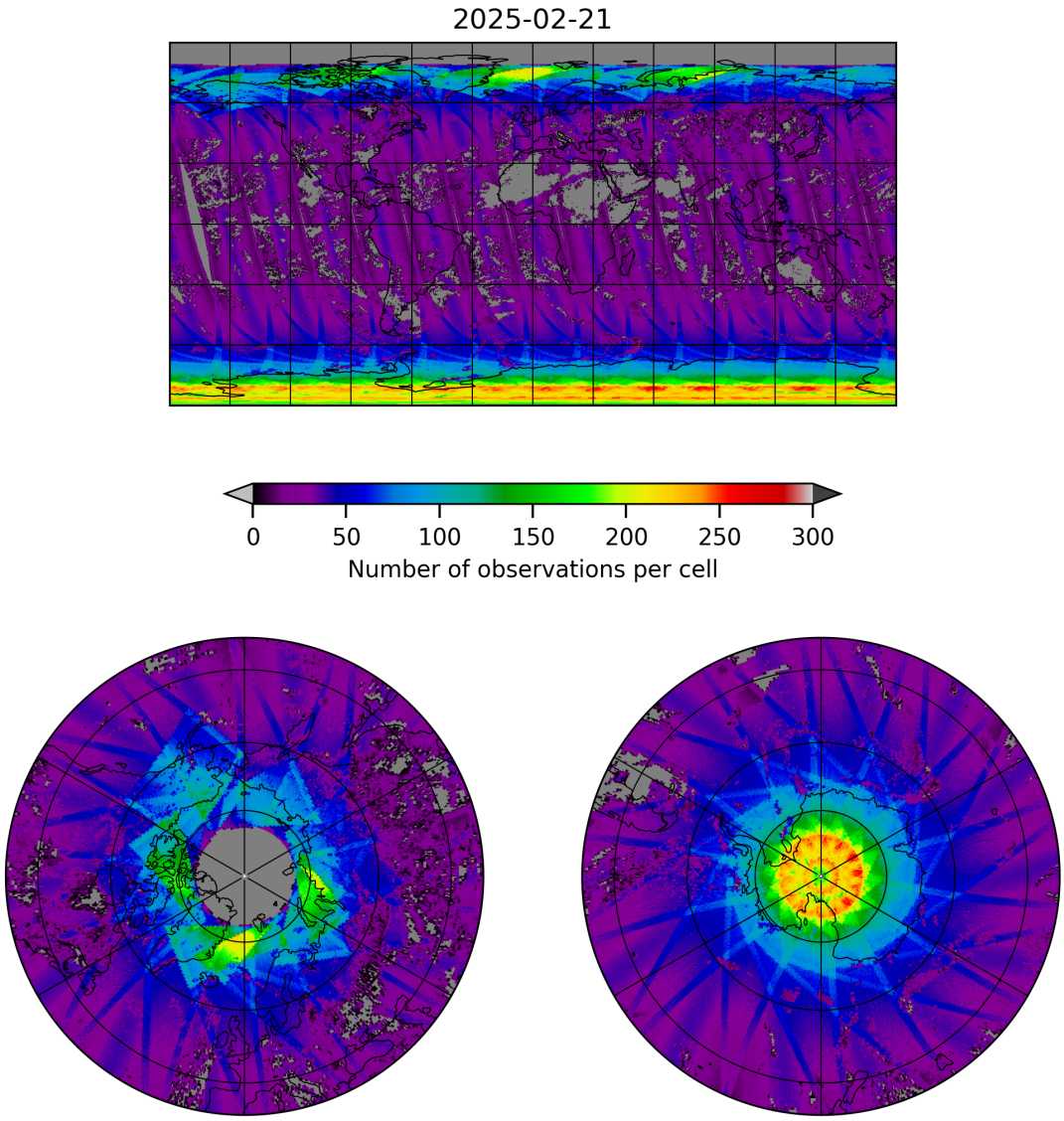

Figure 19: Map of the number of observations for 2025-02-21 to 2025-02-22

7 Zonal average

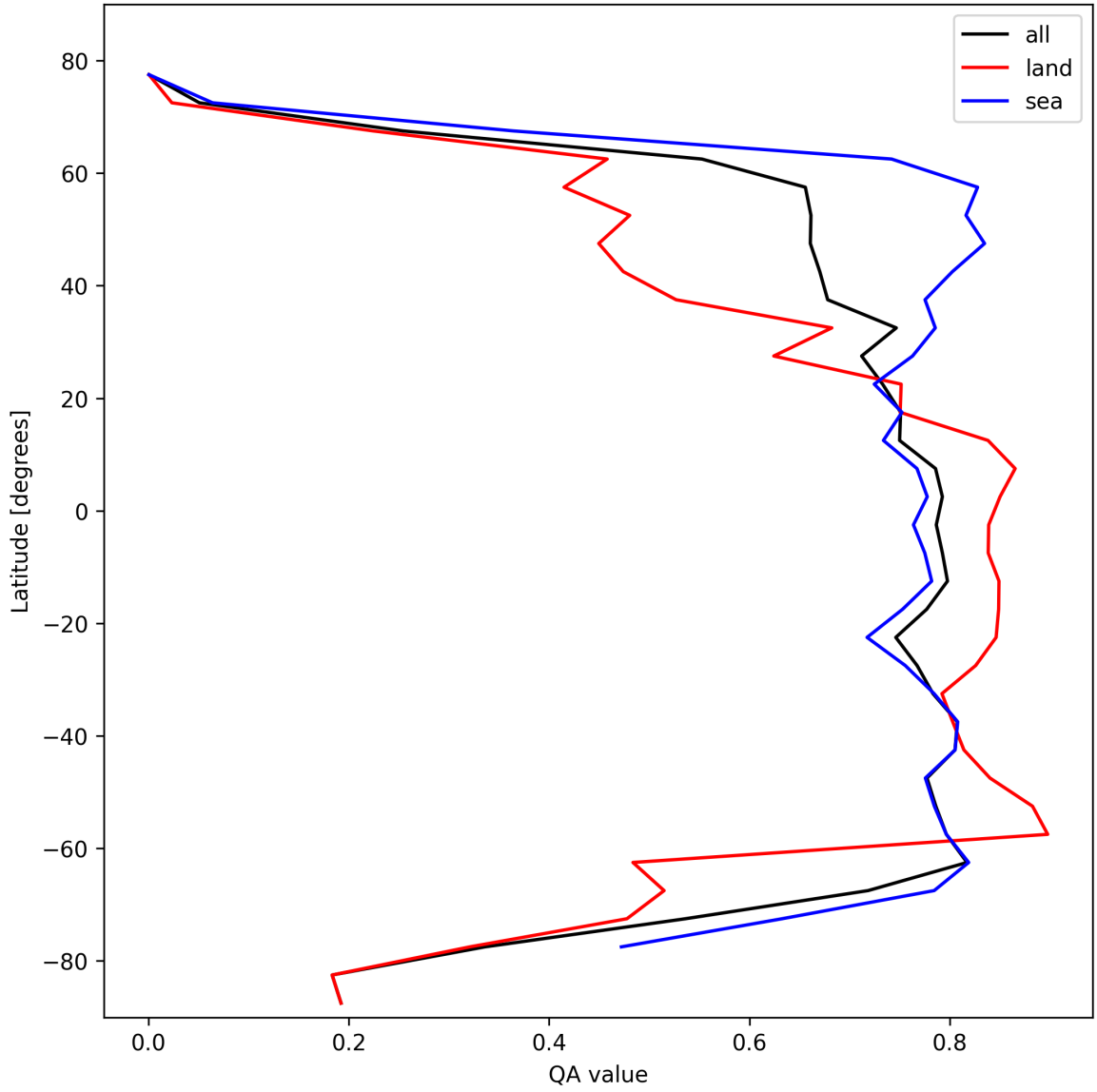

Figure 20: Zonal average of “QA value” for 2025-02-21 to 2025-02-22.

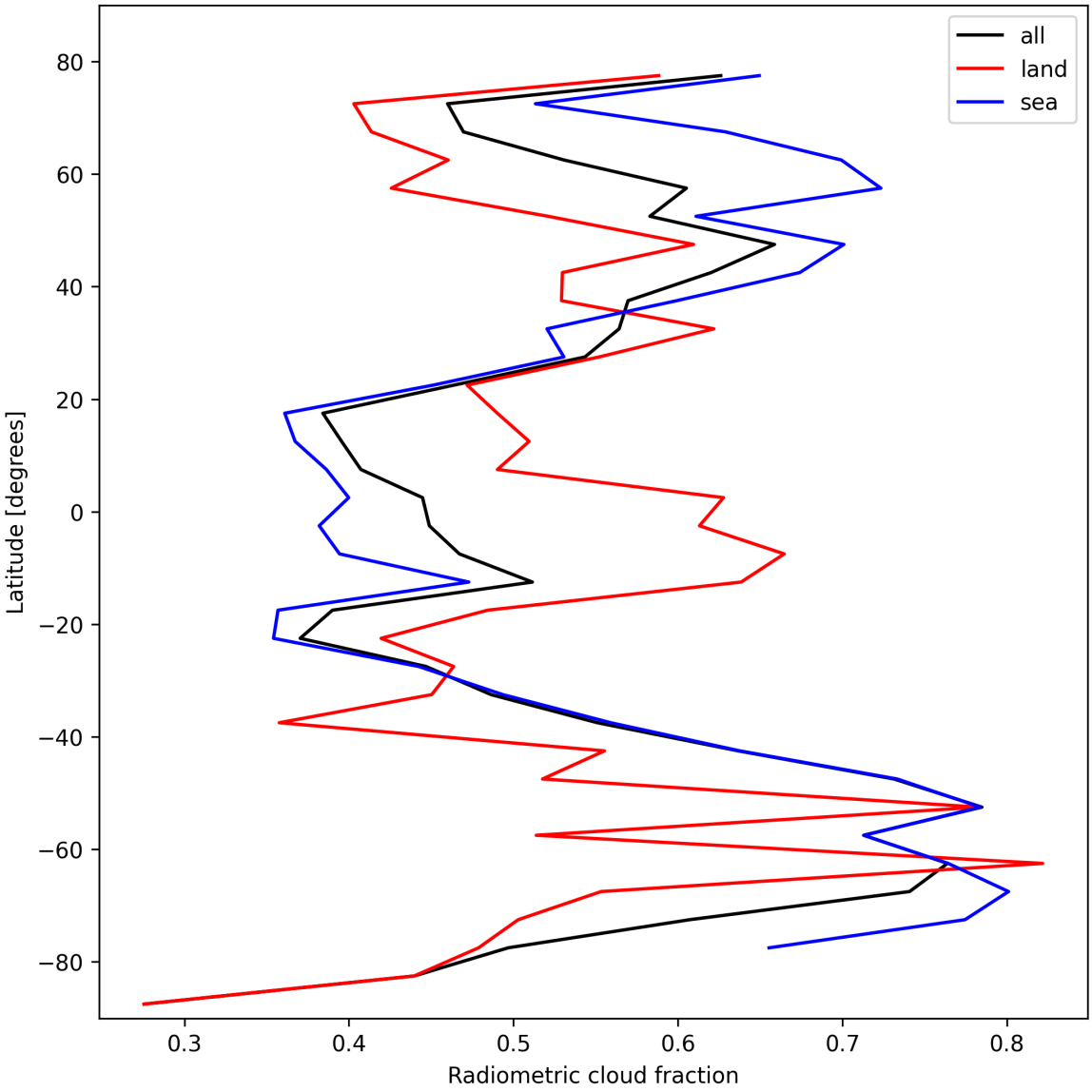

Figure 21: Zonal average of “Radiometric cloud fraction” for 2025-02-21 to 2025-02-22.

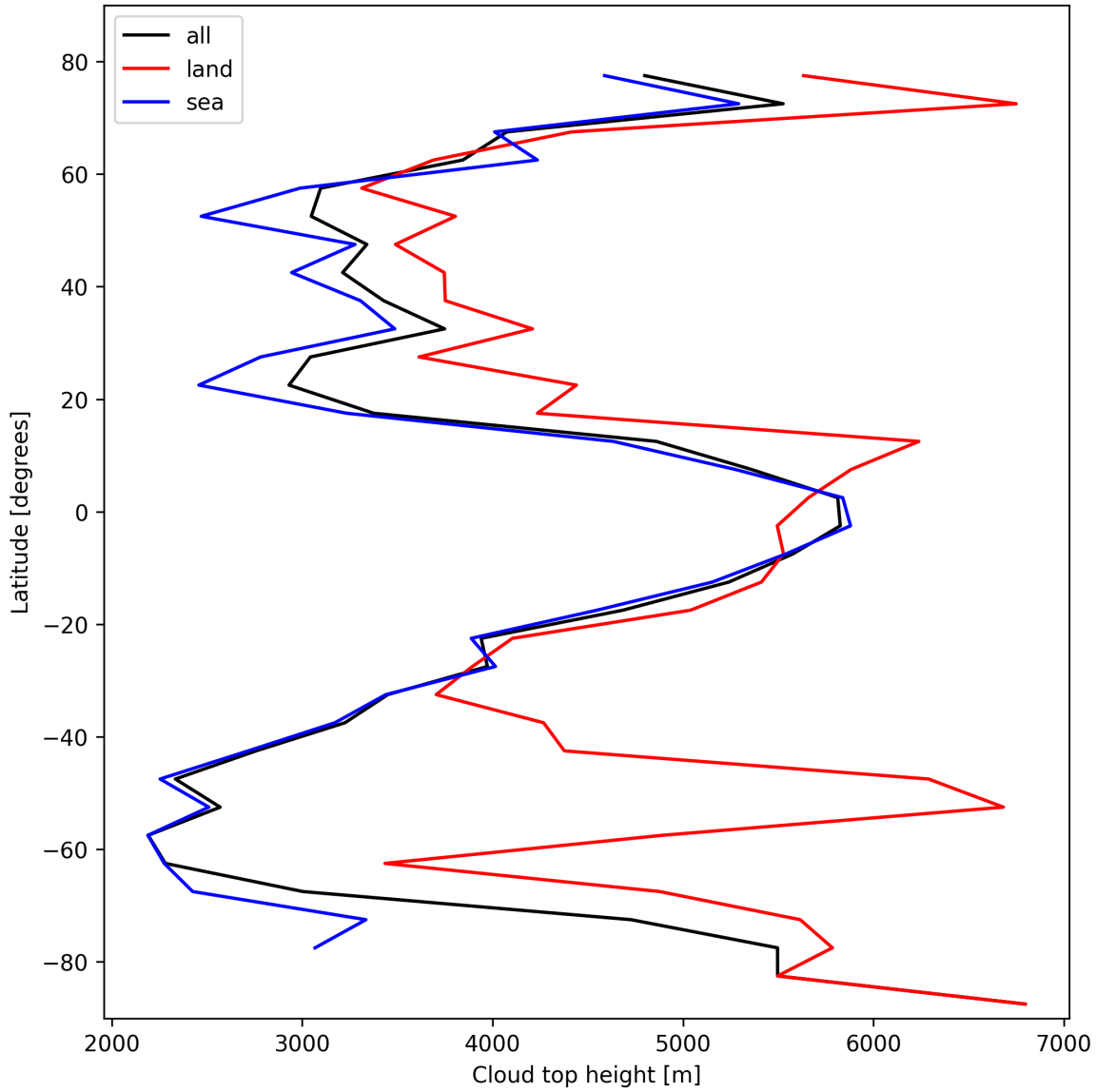

Figure 22: Zonal average of “Cloud top height” for 2025-02-21 to 2025-02-22.

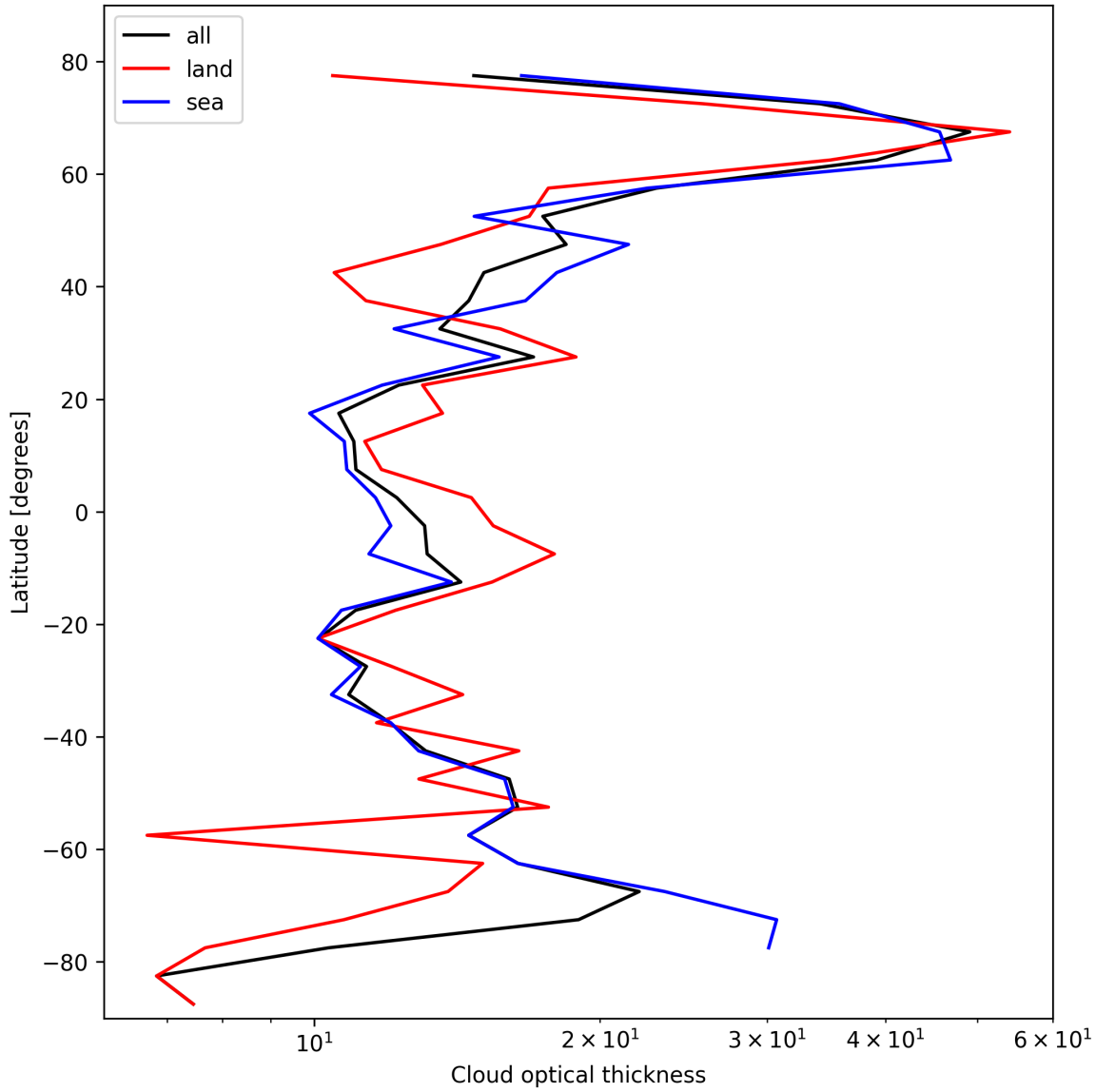

Figure 23: Zonal average of “Cloud optical thickness” for 2025-02-21 to 2025-02-22.

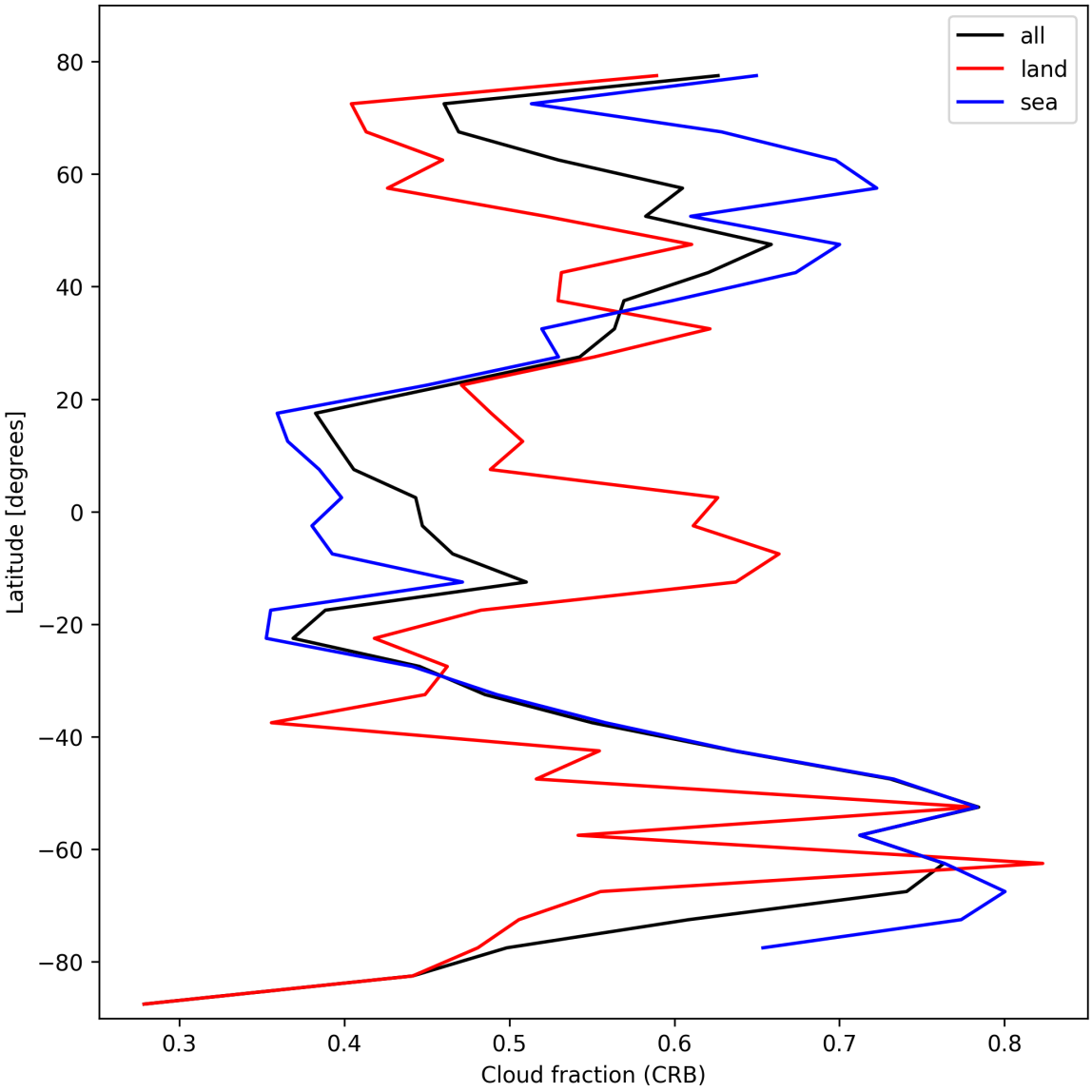

Figure 24: Zonal average of “Cloud fraction (CRB)” for 2025-02-21 to 2025-02-22.

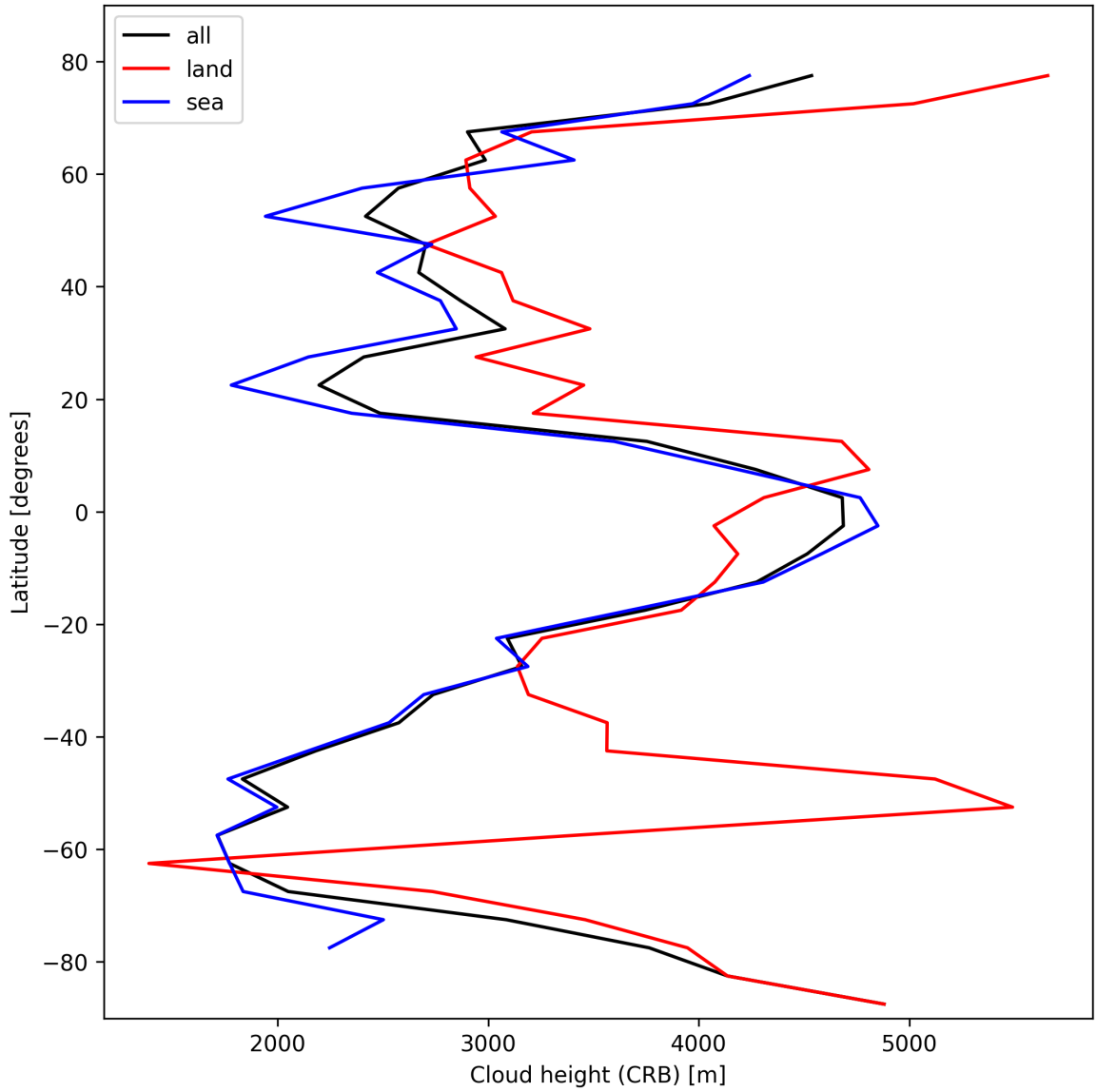

Figure 25: Zonal average of “Cloud height (CRB)” for 2025-02-21 to 2025-02-22.

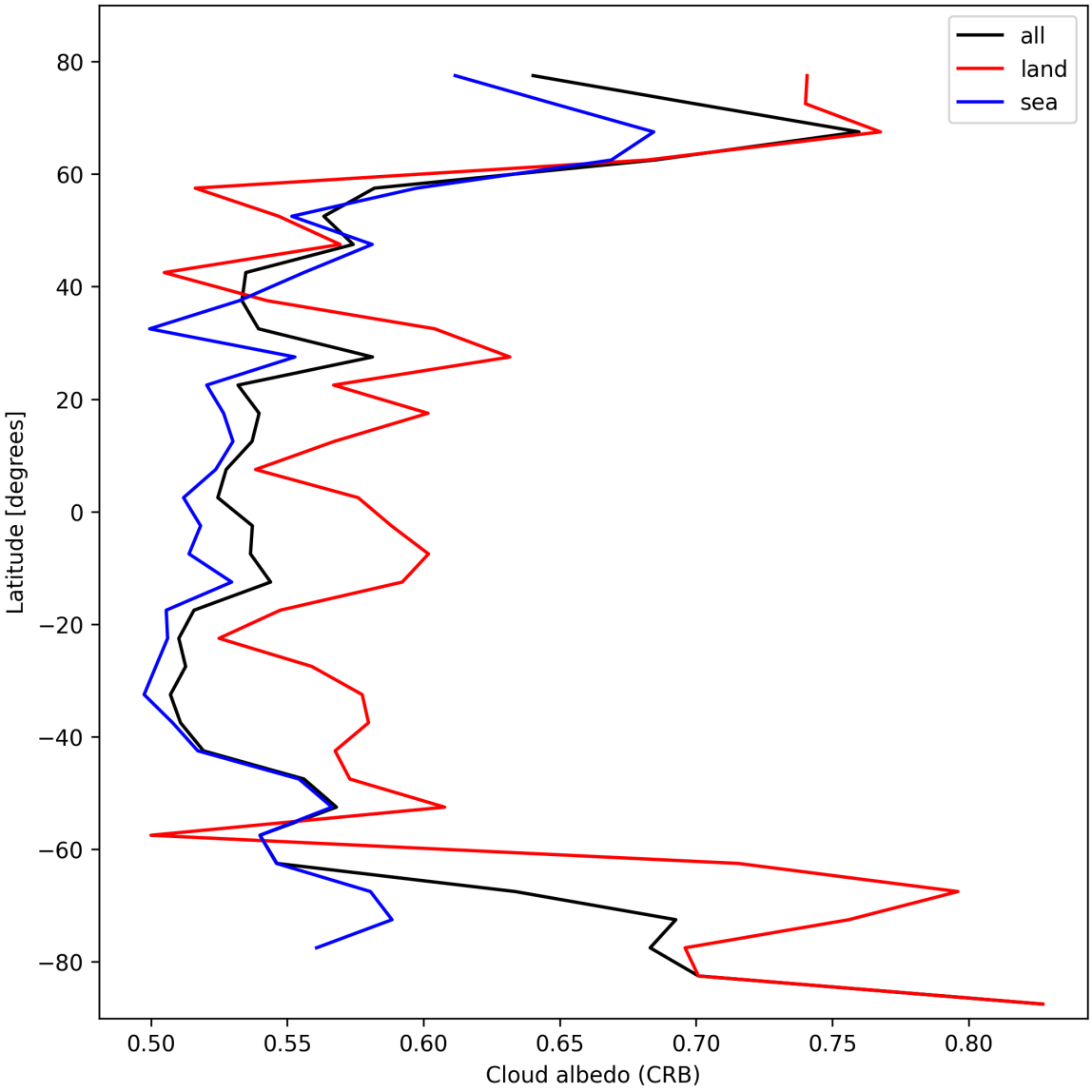

Figure 26: Zonal average of “Cloud albedo (CRB)” for 2025-02-21 to 2025-02-22.

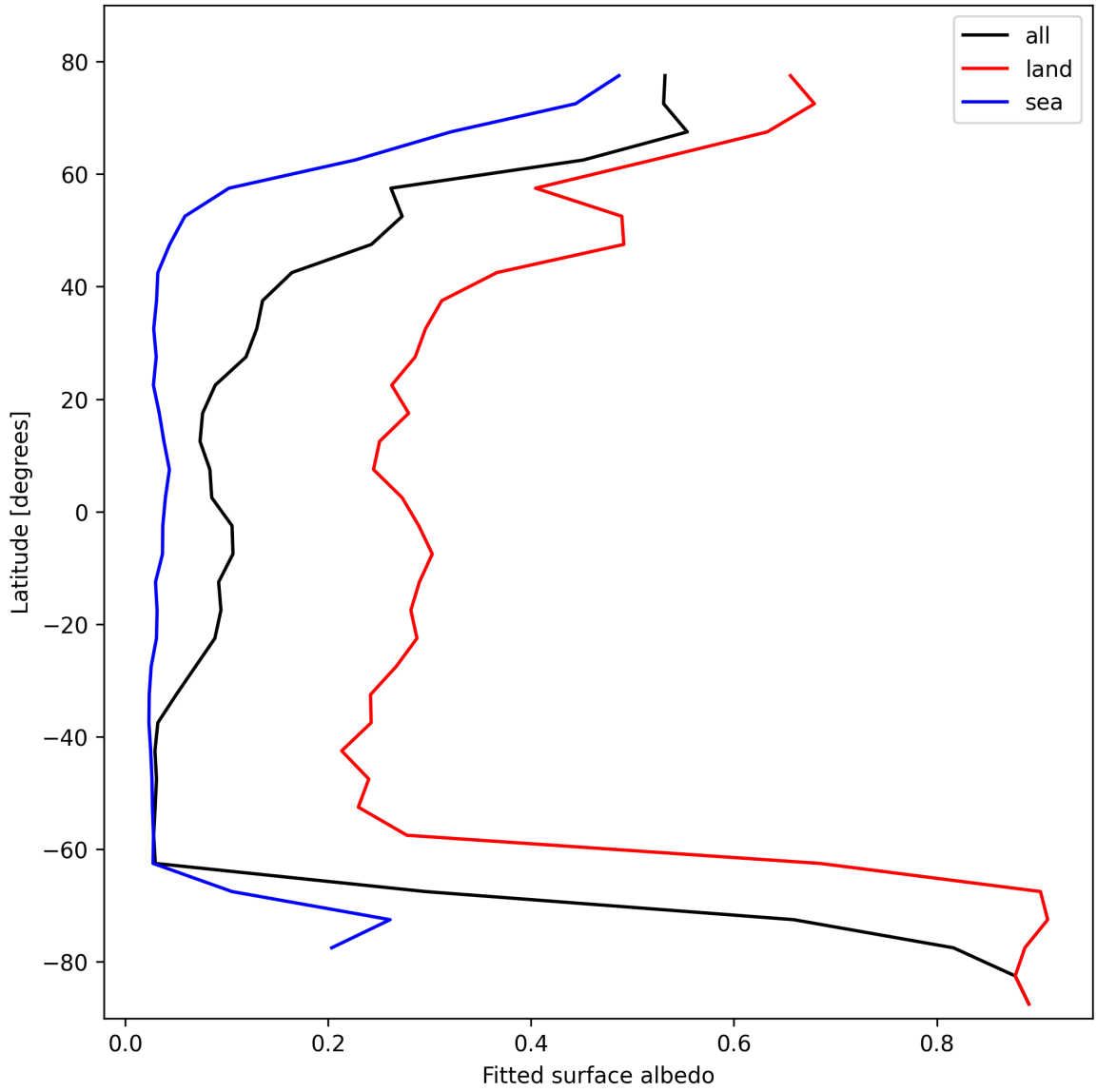

Figure 27: Zonal average of “Fitted surface albedo” for 2025-02-21 to 2025-02-22.

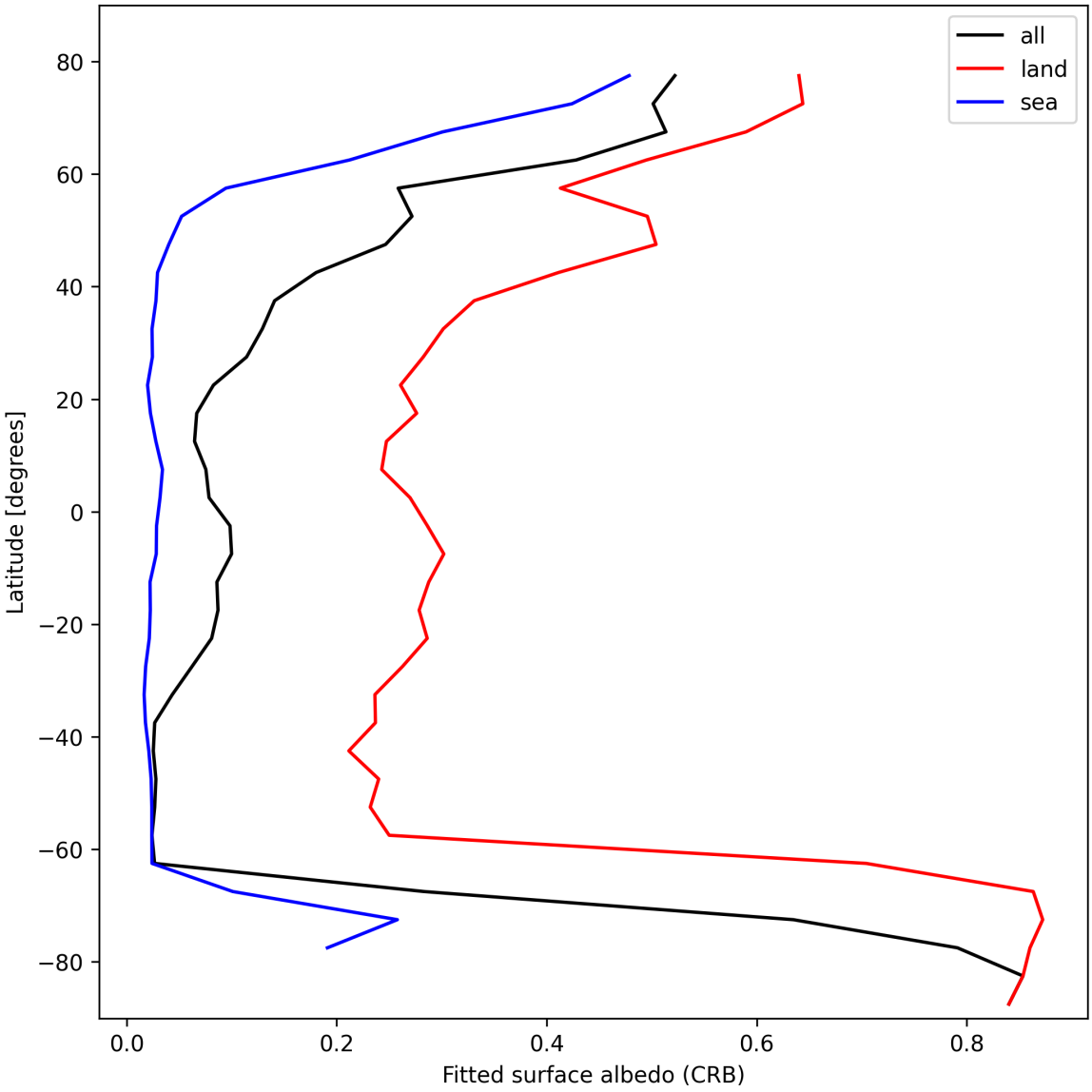

Figure 28: Zonal average of “Fitted surface albedo (CRB)” for 2025-02-21 to 2025-02-22.

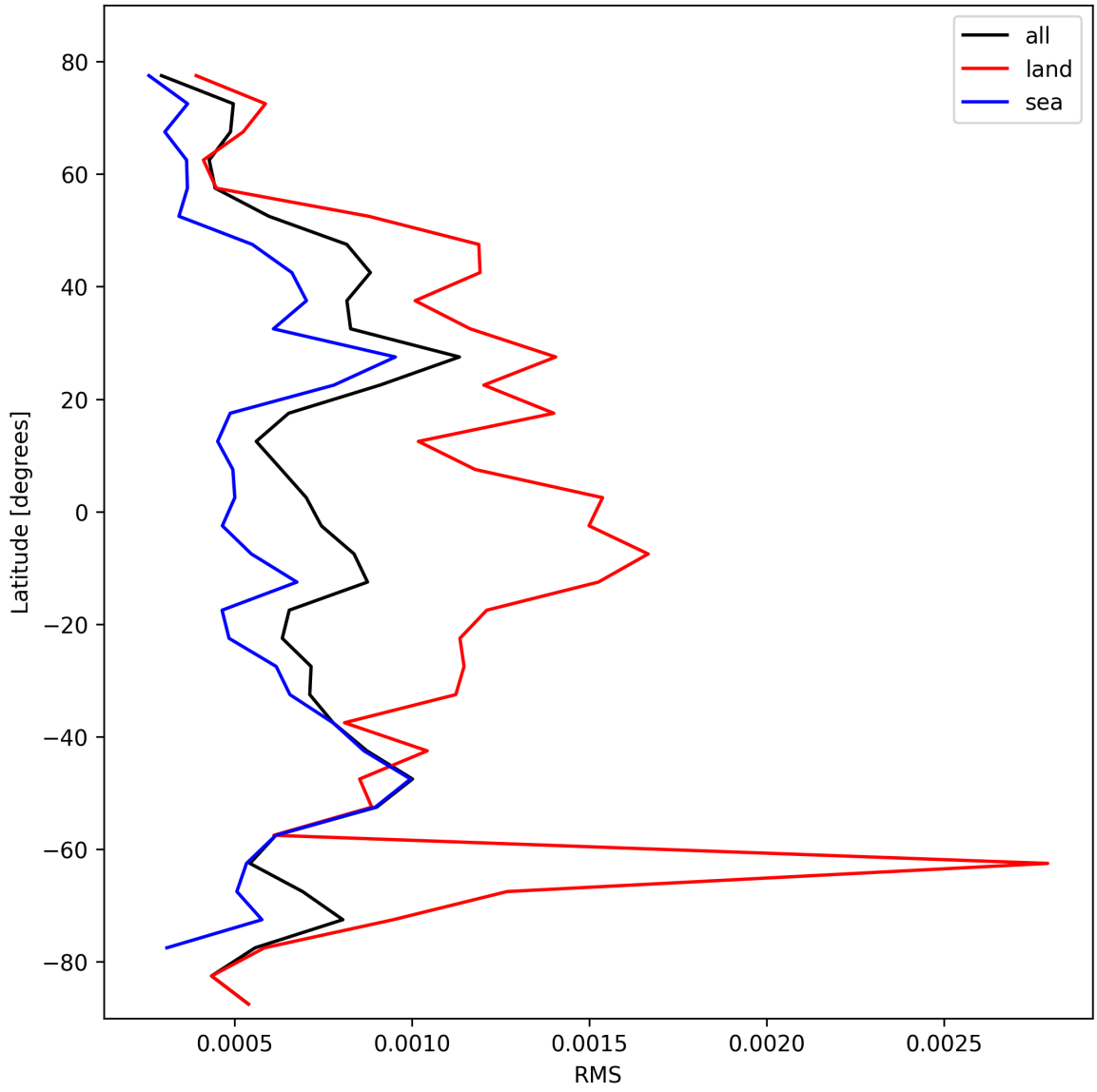

Figure 29: Zonal average of “RMS” for 2025-02-21 to 2025-02-22.

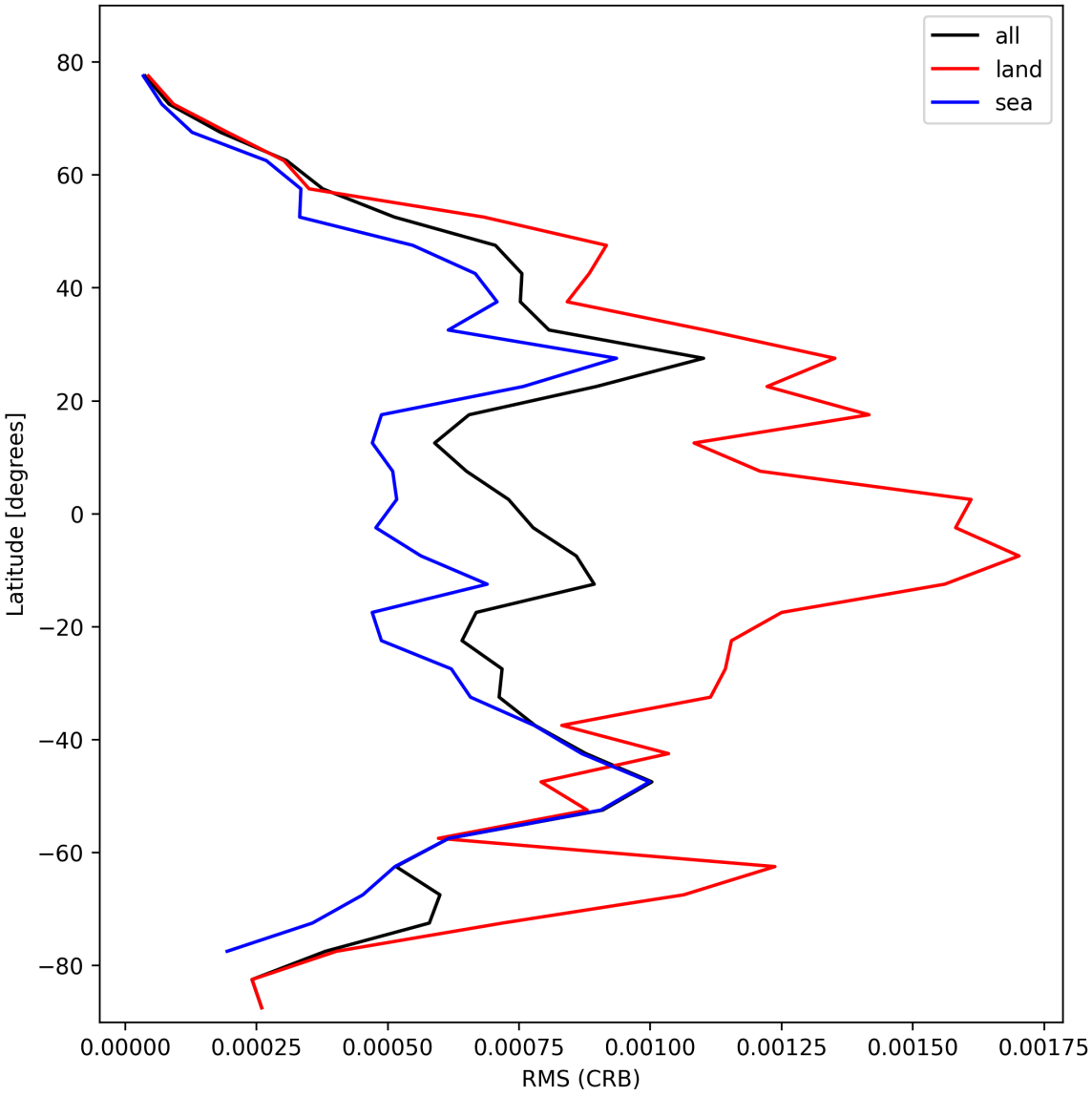

Figure 30: Zonal average of “RMS (CRB)” for 2025-02-21 to 2025-02-22.

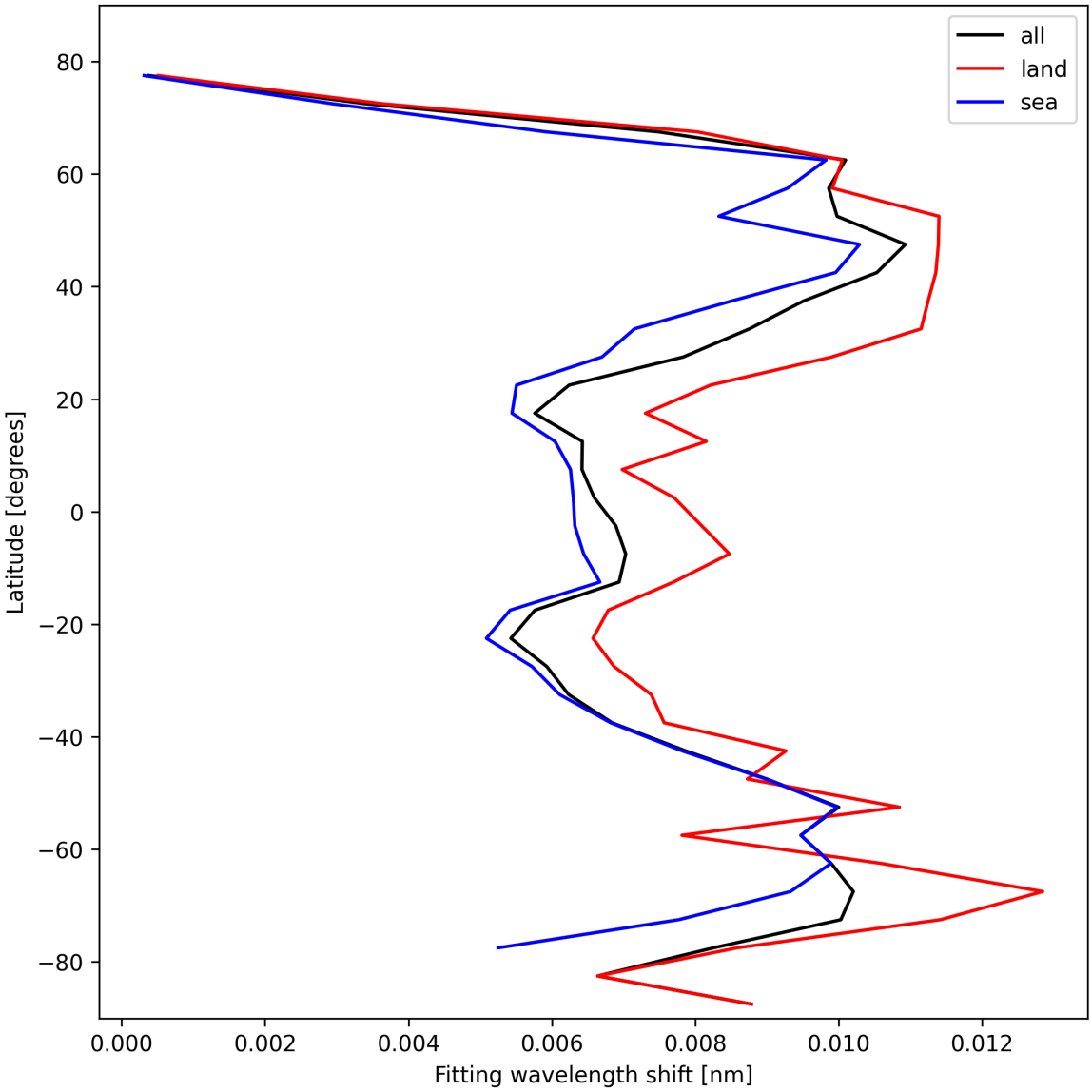

Figure 31: Zonal average of “Fitting wavelength shift” for 2025-02-21 to 2025-02-22.

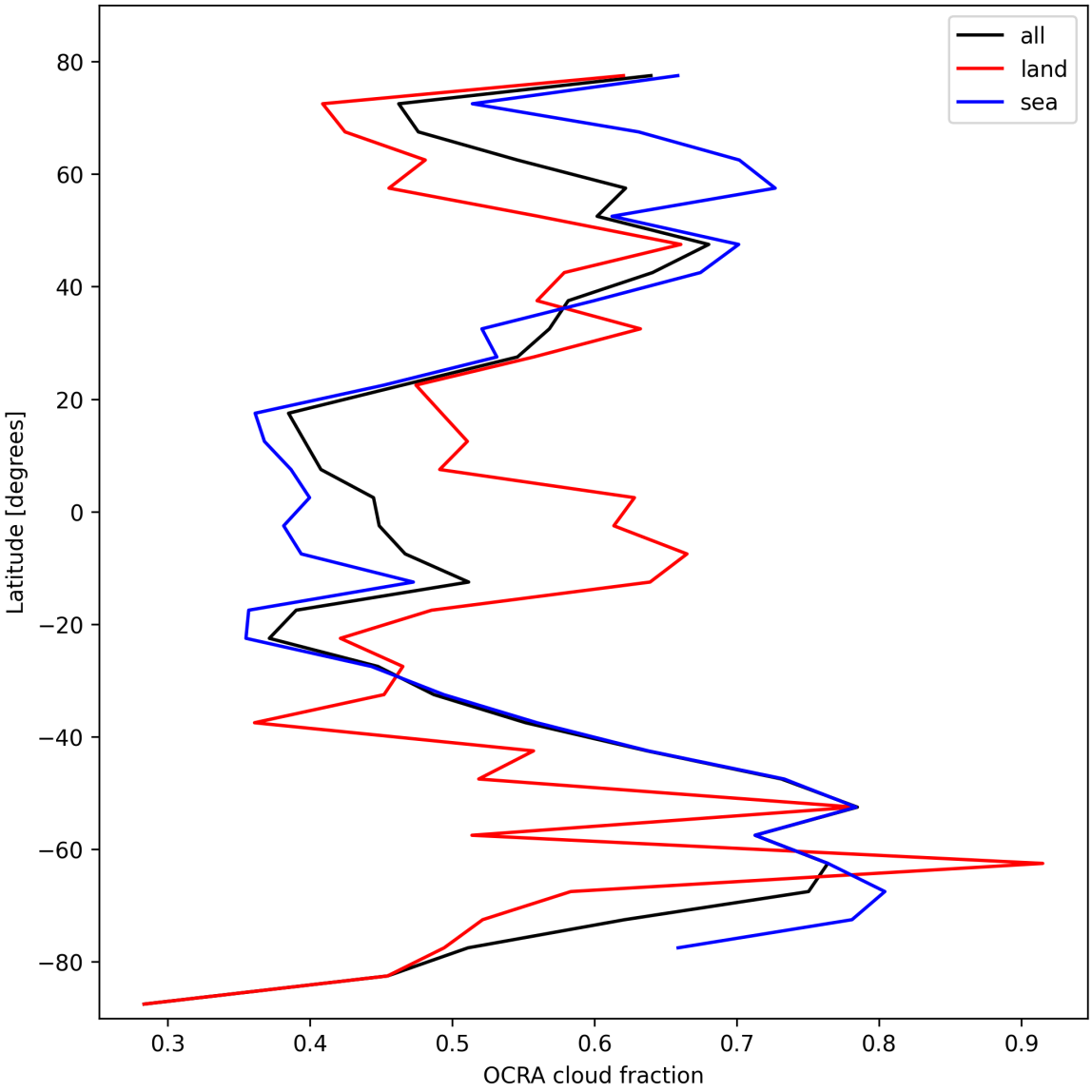

Figure 32: Zonal average of “OCRA cloud fraction” for 2025-02-21 to 2025-02-22.

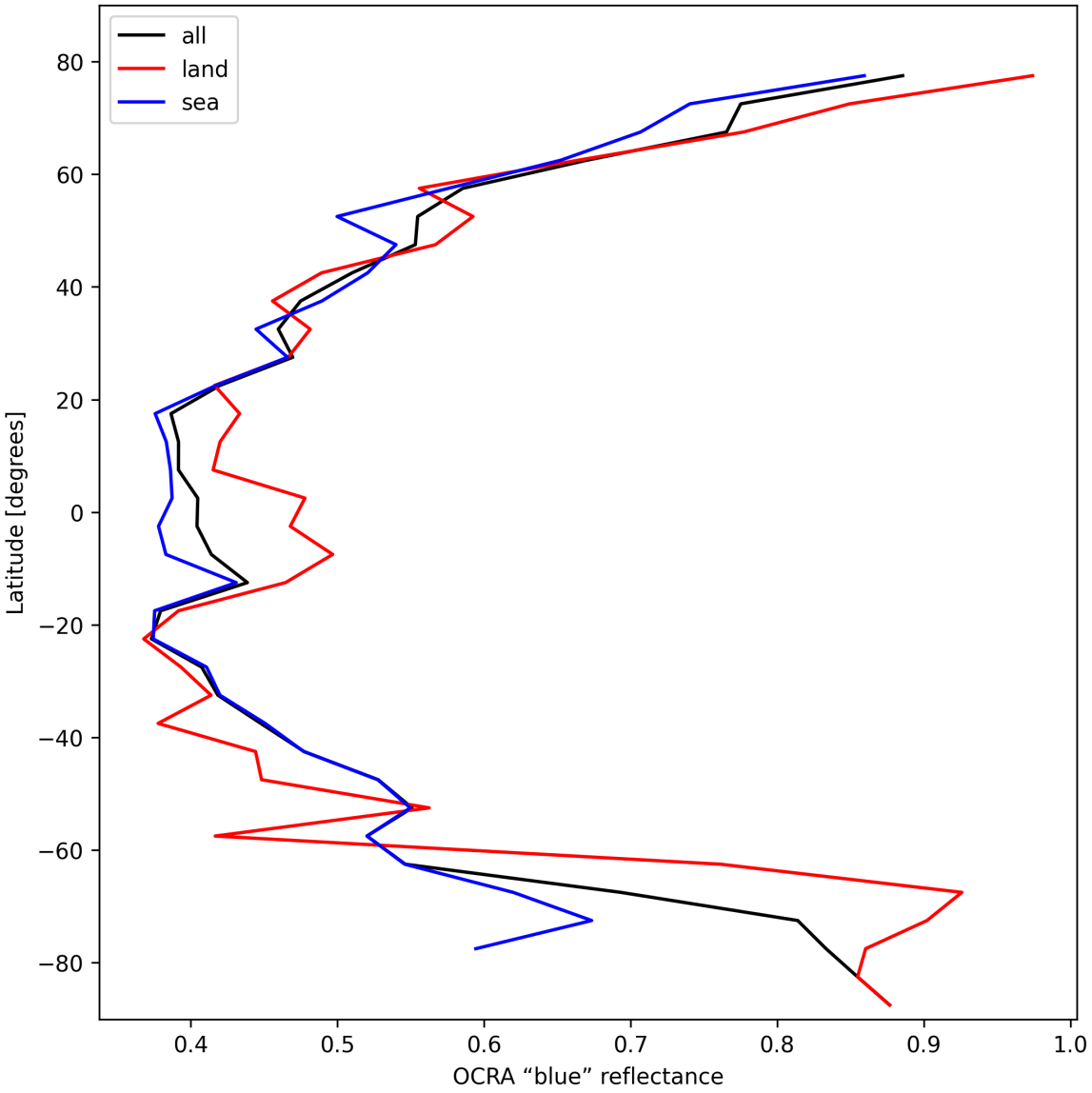

Figure 33: Zonal average of “OCRA “blue” reflectance” for 2025-02-21 to 2025-02-22.

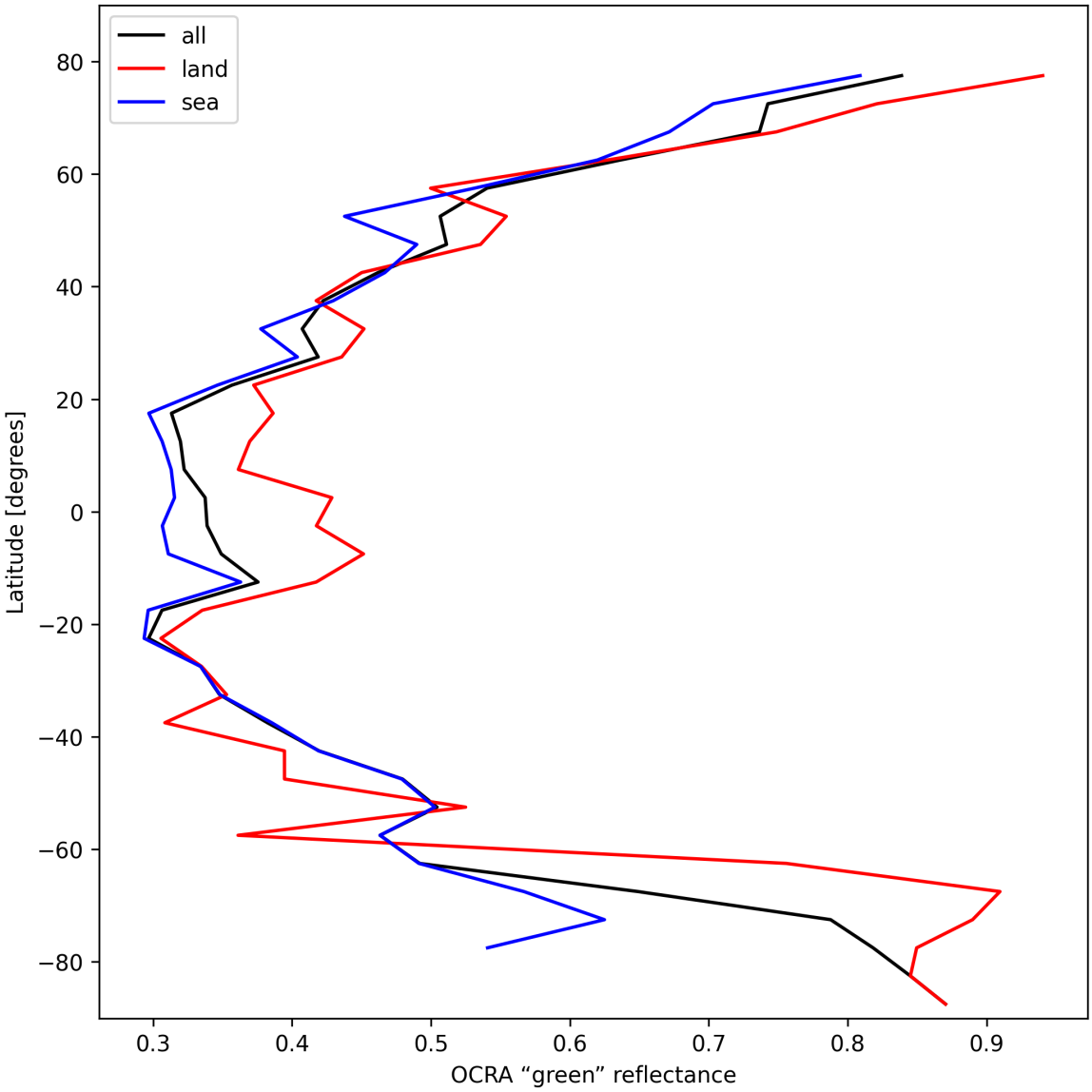

Figure 34: Zonal average of “OCRA “green” reflectance” for 2025-02-21 to 2025-02-22.

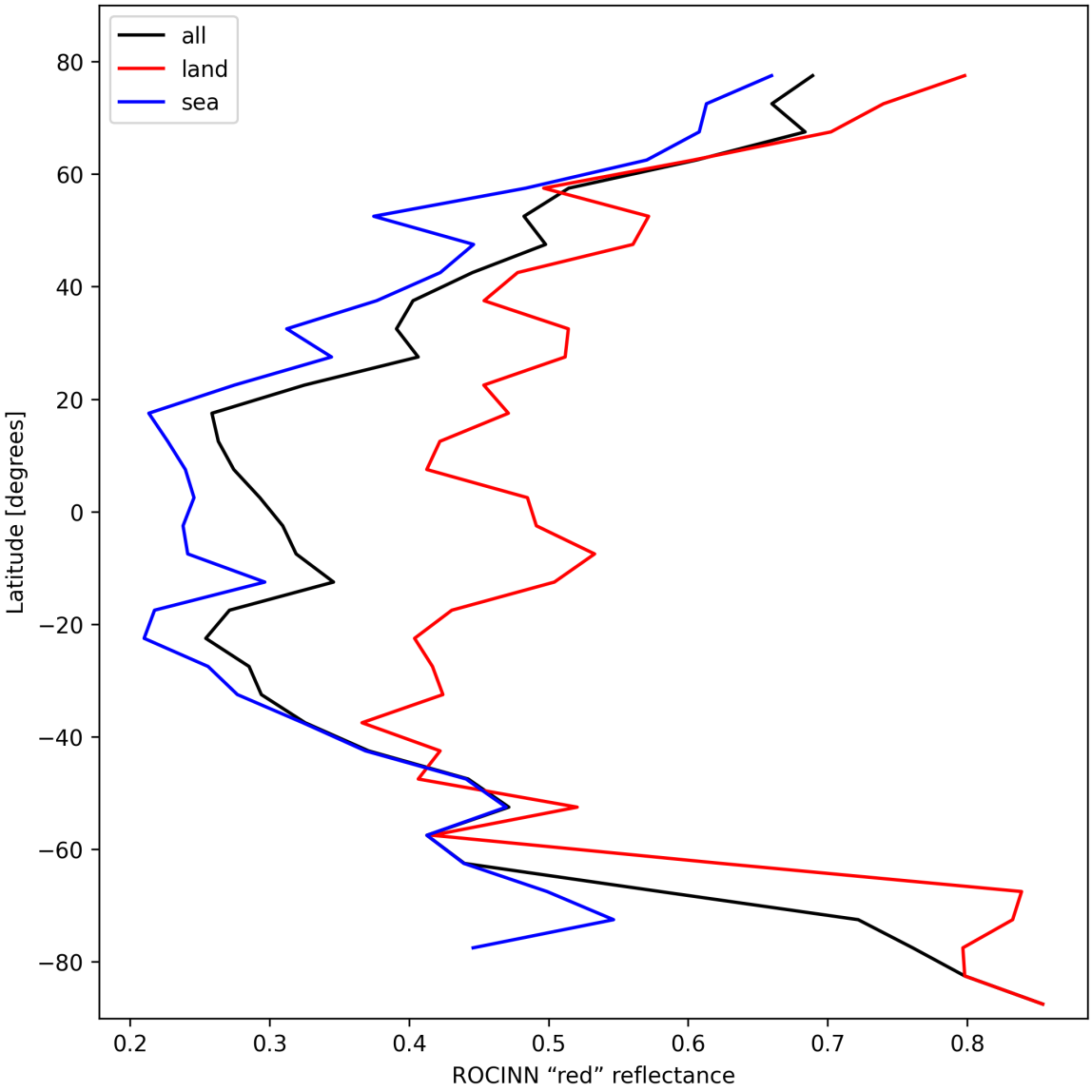

Figure 35: Zonal average of “ROCINN “red” reflectance” for 2025-02-21 to 2025-02-22.

8 Histograms

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

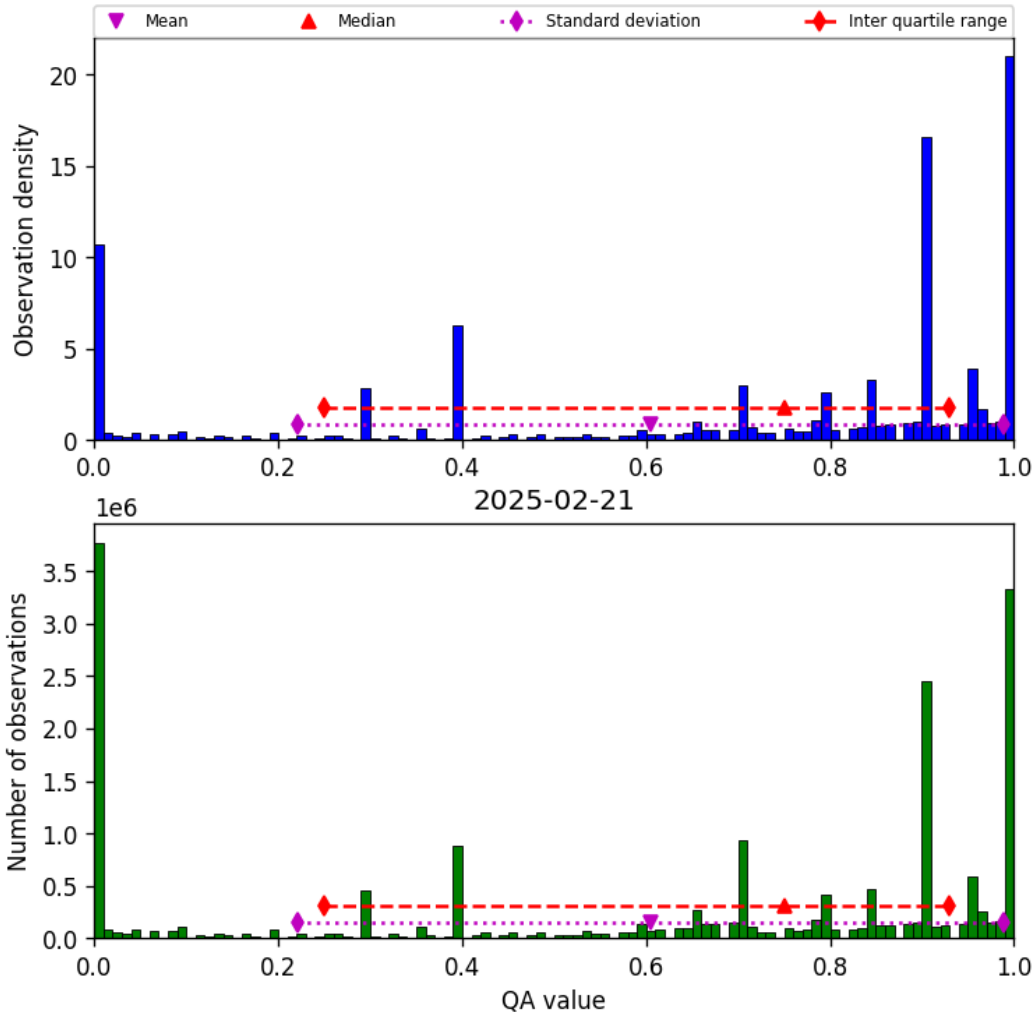

Figure 36: Histogram of “QA value” for 2025-02-21 to 2025-02-22

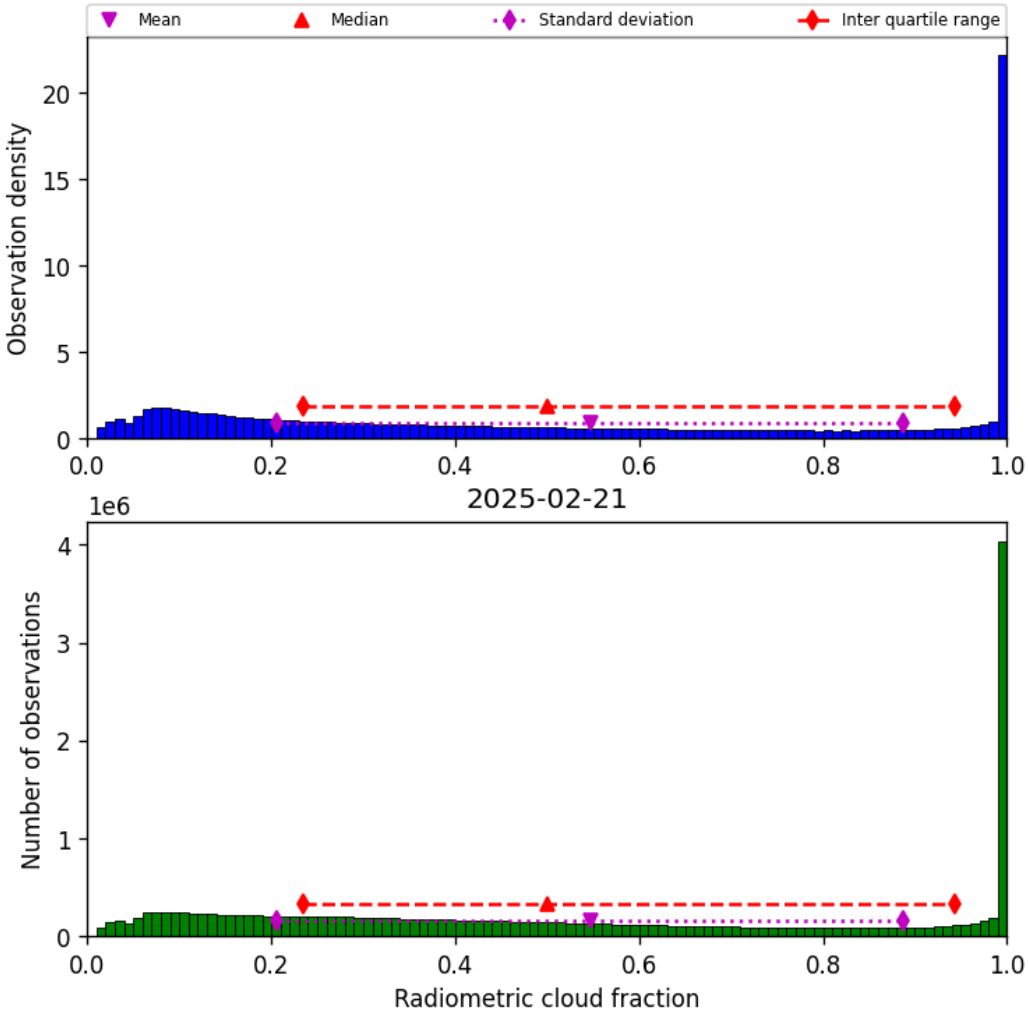

Figure 37: Histogram of “Radiometric cloud fraction” for 2025-02-21 to 2025-02-22

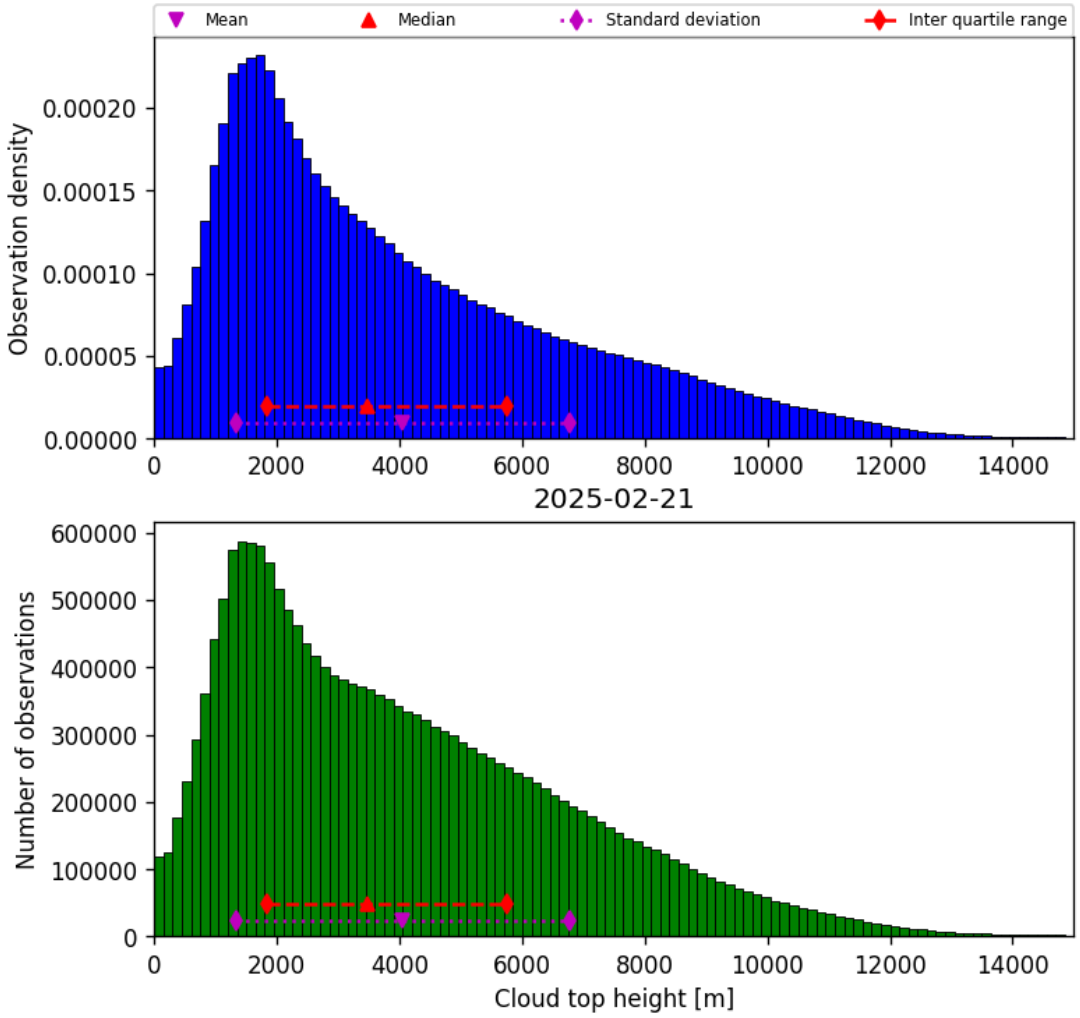

Figure 38: Histogram of “Cloud top height” for 2025-02-21 to 2025-02-22

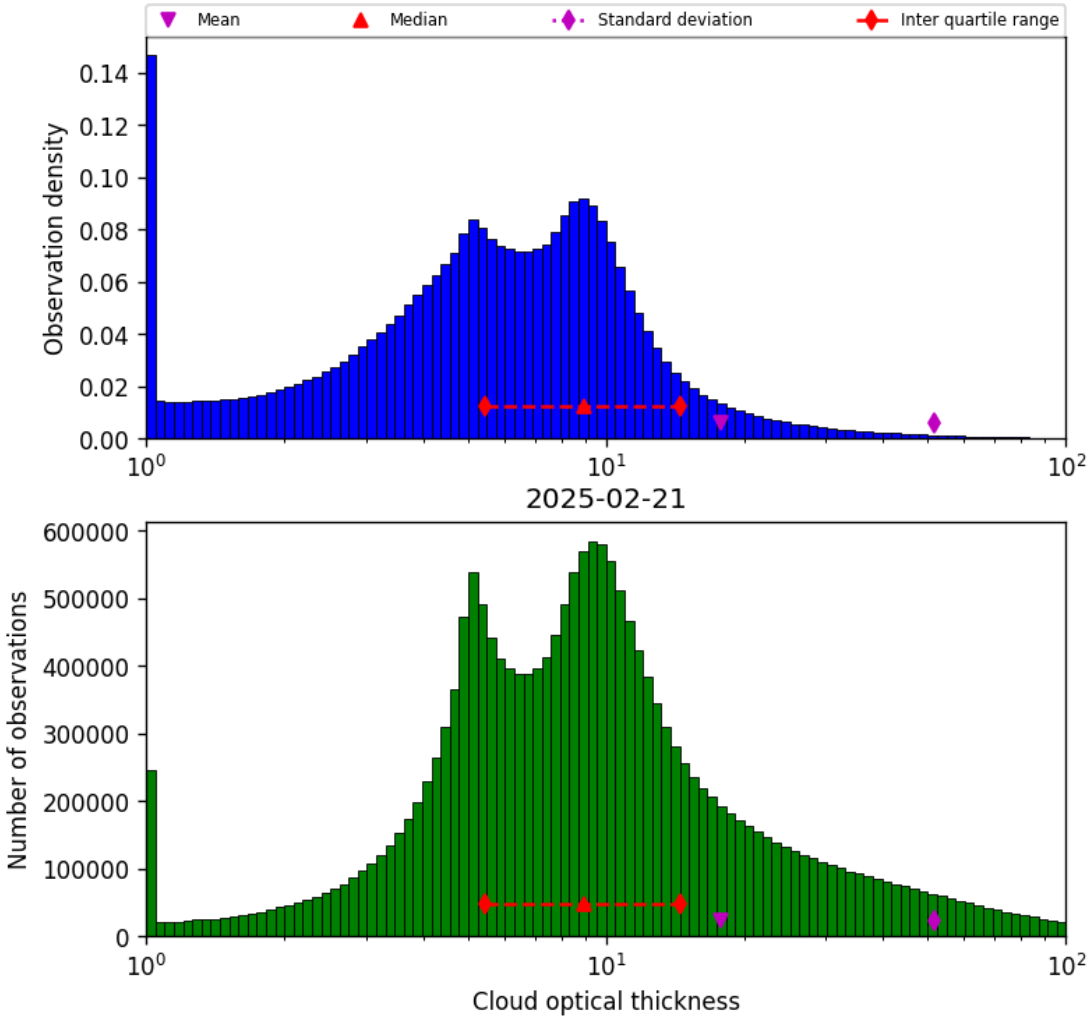

Figure 39: Histogram of “Cloud optical thickness” for 2025-02-21 to 2025-02-22

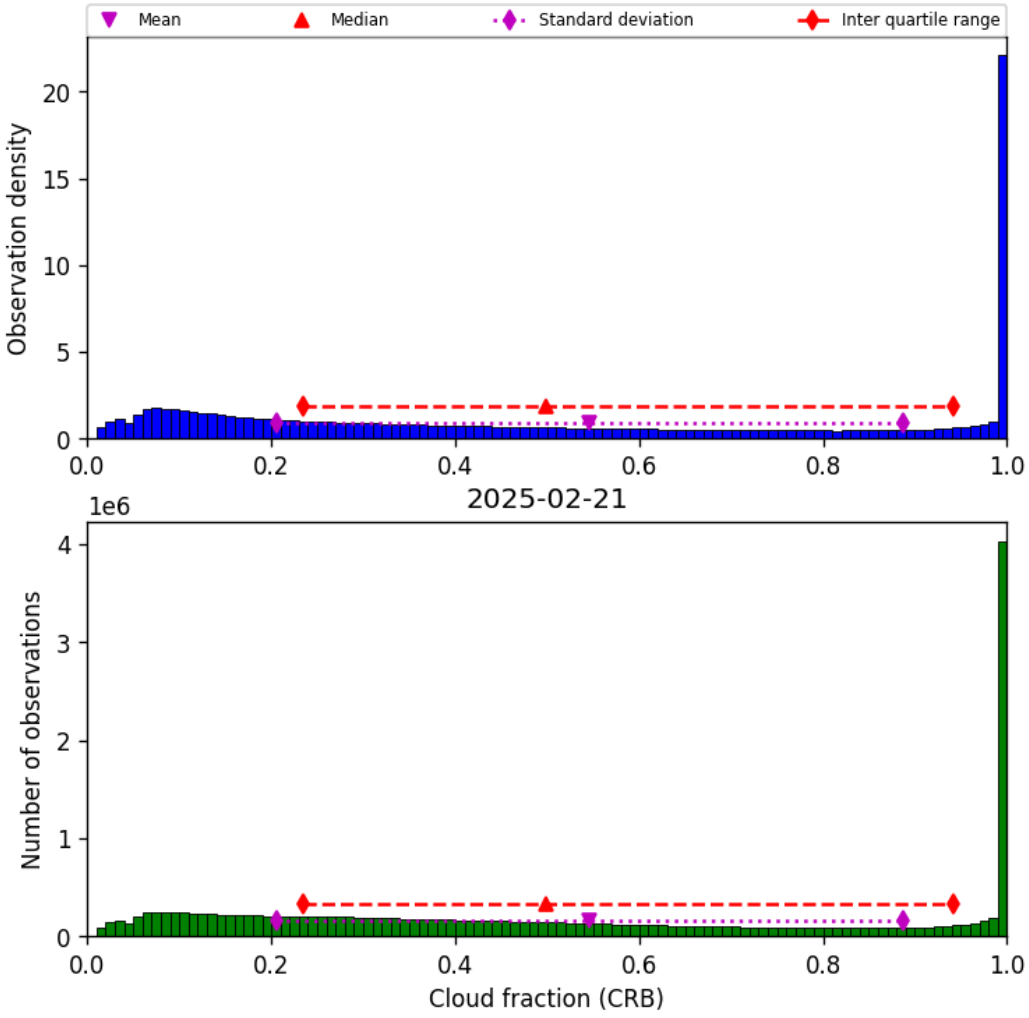

Figure 40: Histogram of “Cloud fraction (CRB)” for 2025-02-21 to 2025-02-22

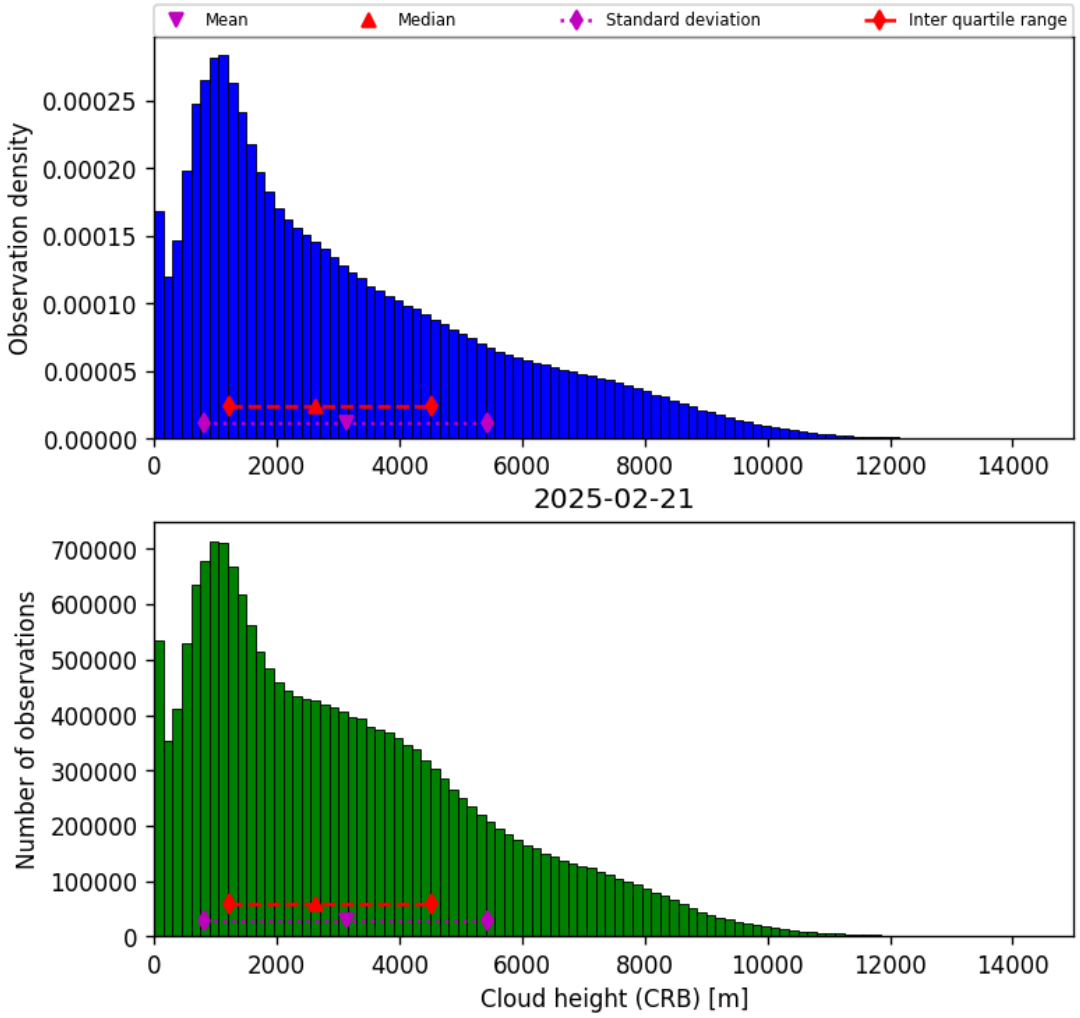

Figure 41: Histogram of “Cloud height (CRB)” for 2025-02-21 to 2025-02-22

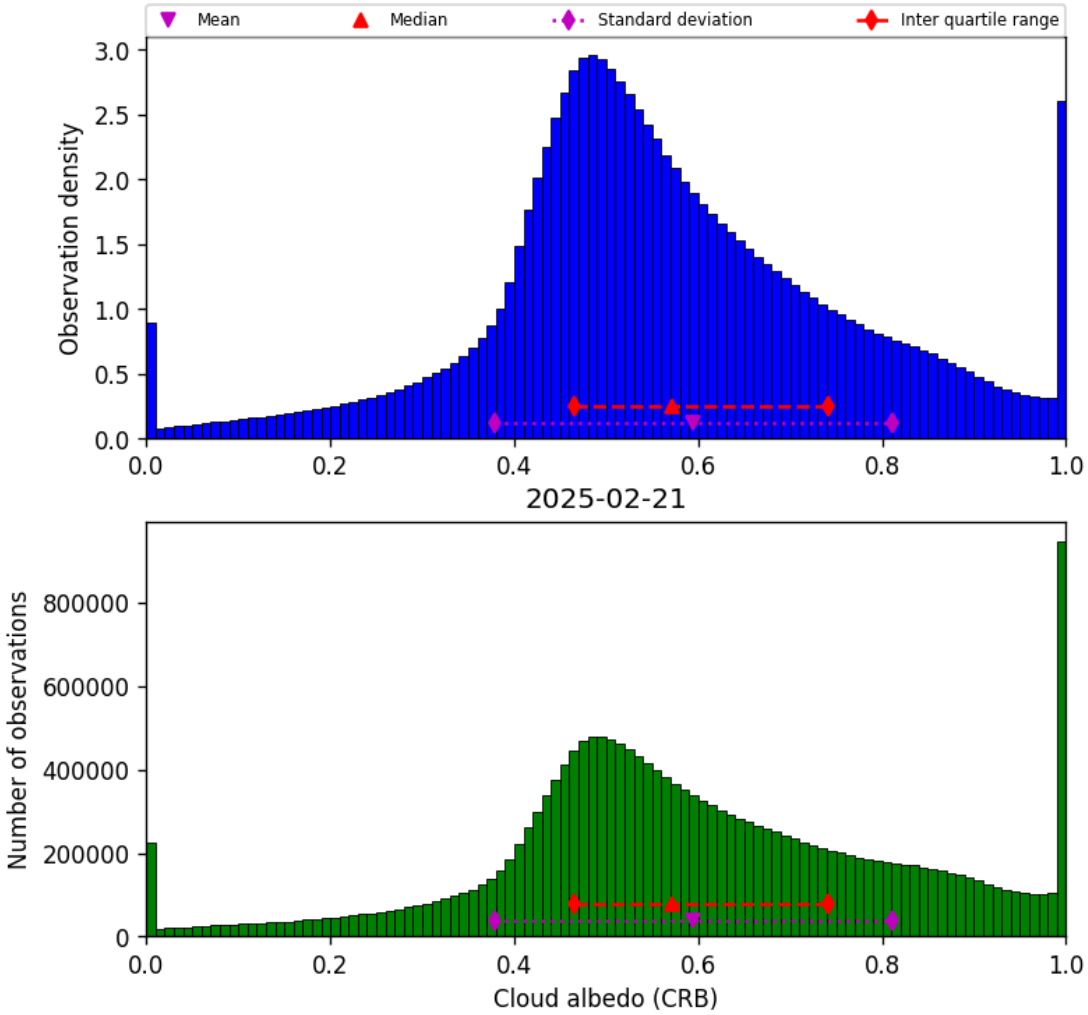

Figure 42: Histogram of “Cloud albedo (CRB)” for 2025-02-21 to 2025-02-22

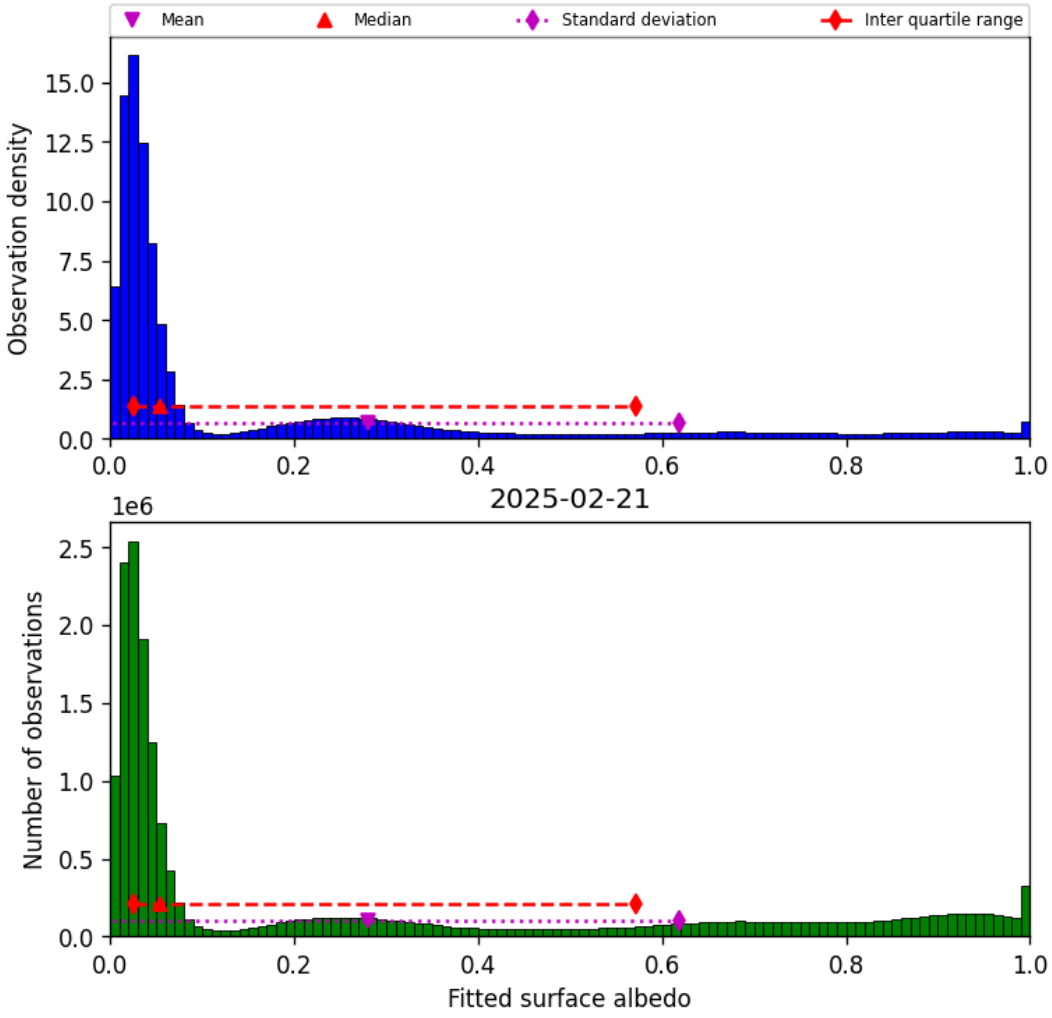

Figure 43: Histogram of “Fitted surface albedo” for 2025-02-21 to 2025-02-22

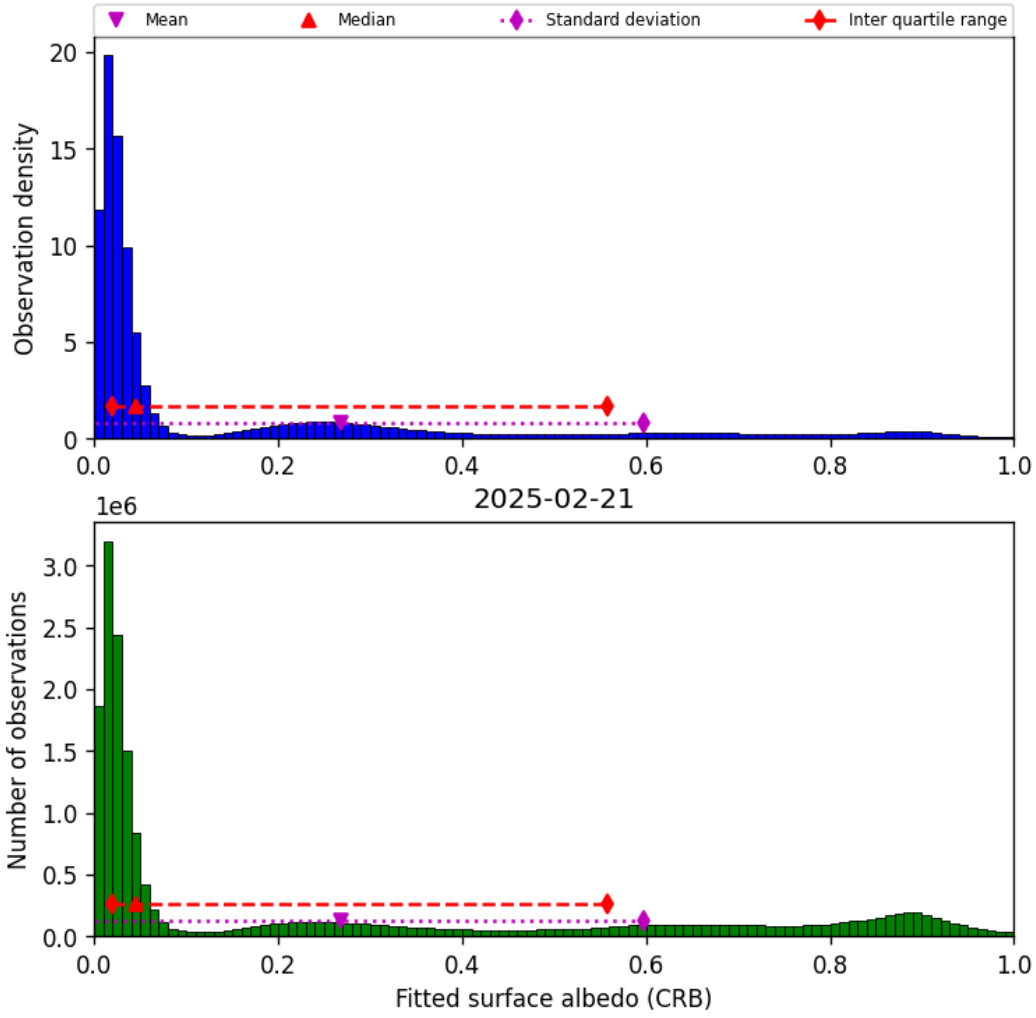

Figure 44: Histogram of “Fitted surface albedo (CRB)” for 2025-02-21 to 2025-02-22

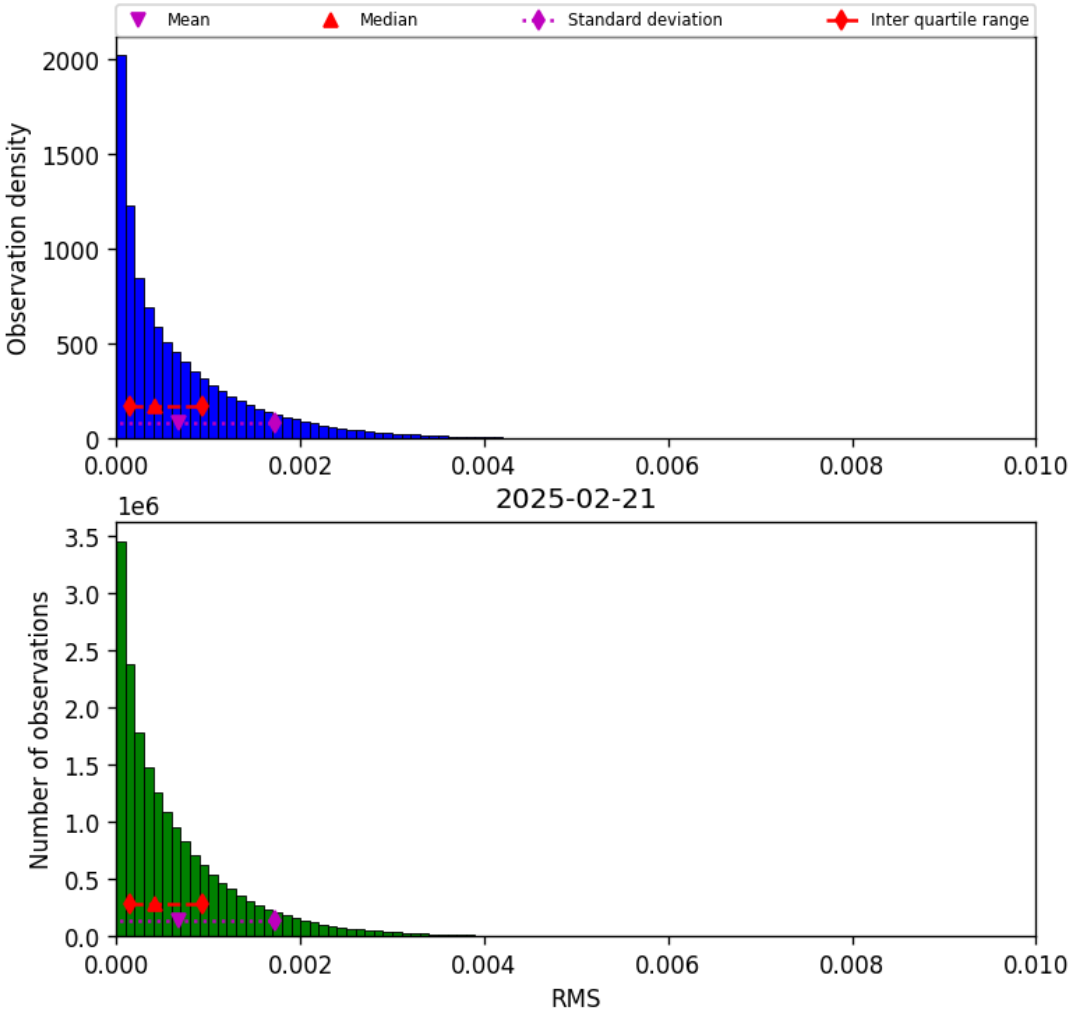

Figure 45: Histogram of “RMS” for 2025-02-21 to 2025-02-22

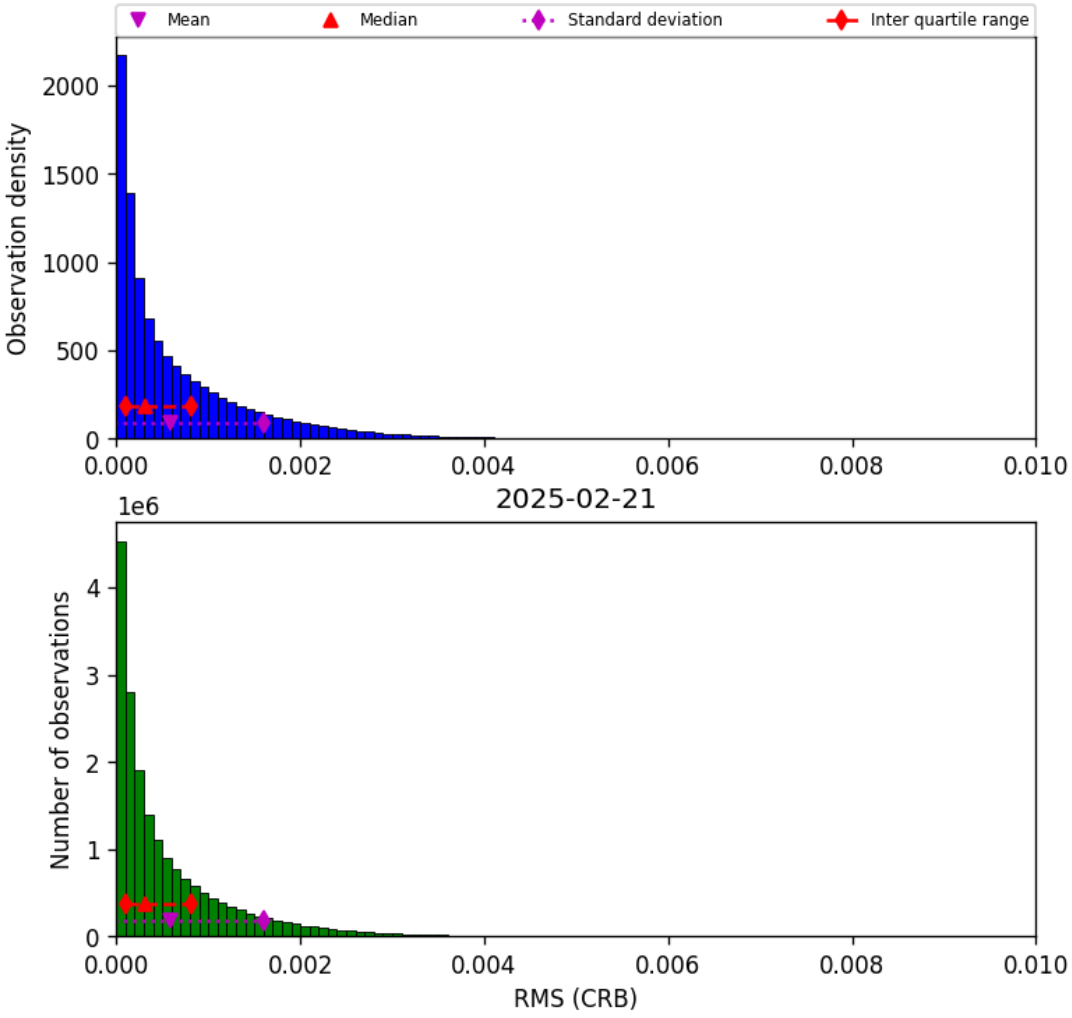

Figure 46: Histogram of “RMS (CRB)” for 2025-02-21 to 2025-02-22

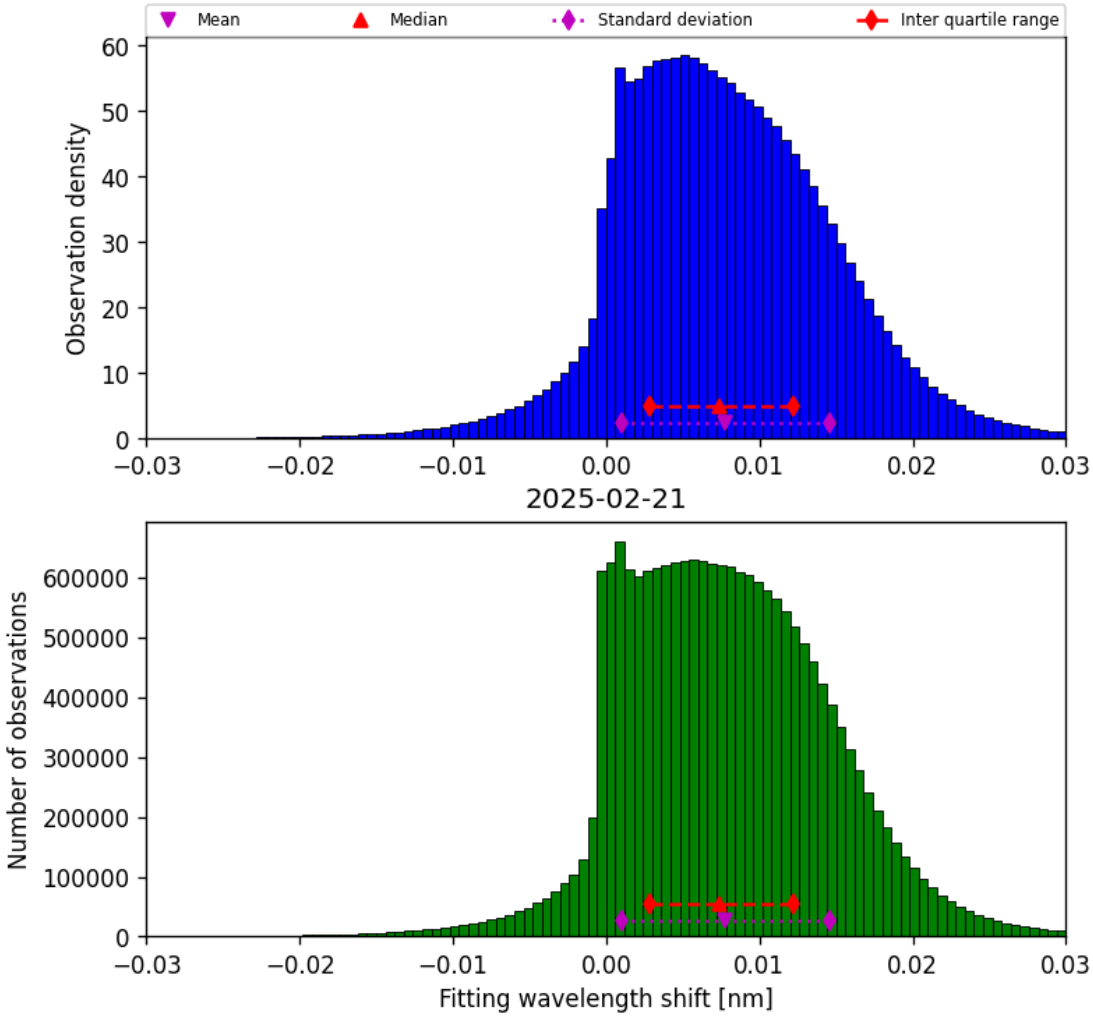

Figure 47: Histogram of “Fitting wavelength shift” for 2025-02-21 to 2025-02-22

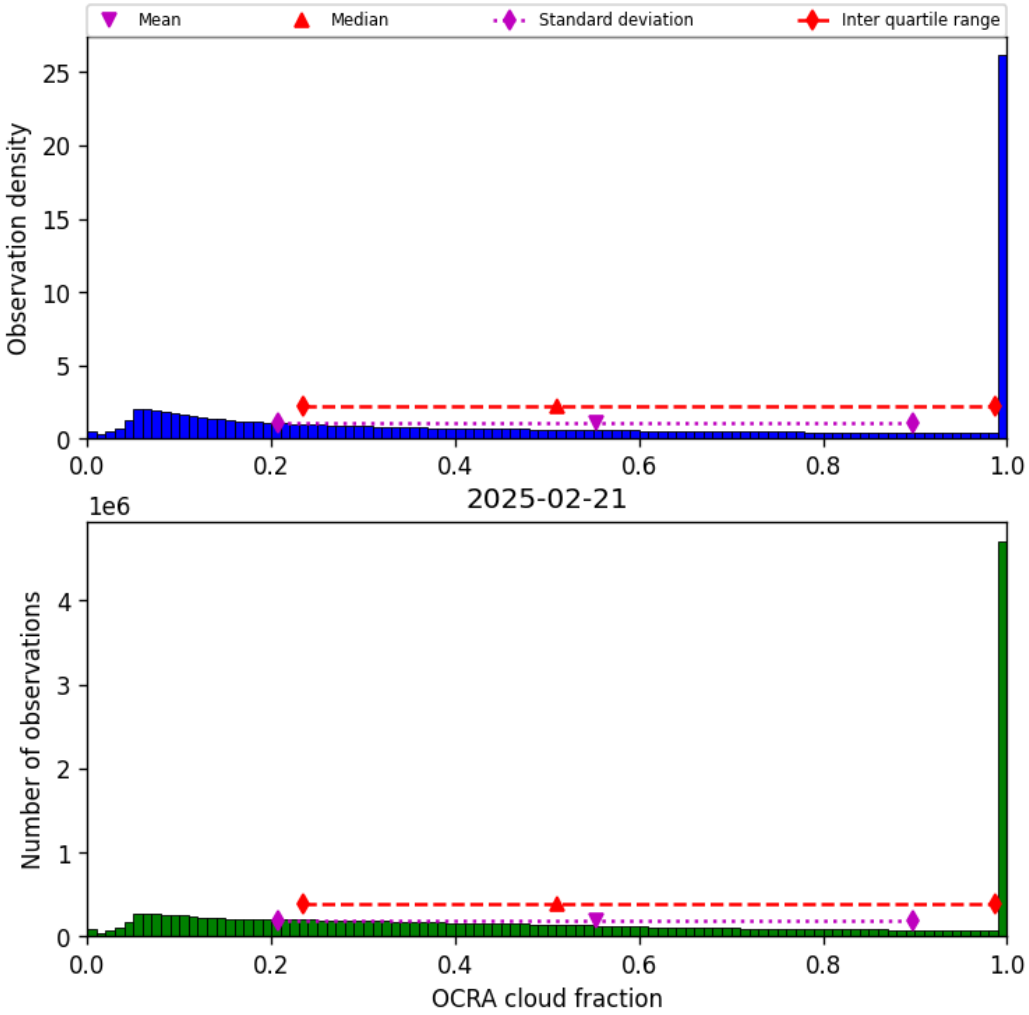

Figure 48: Histogram of “OCRA cloud fraction” for 2025-02-21 to 2025-02-22

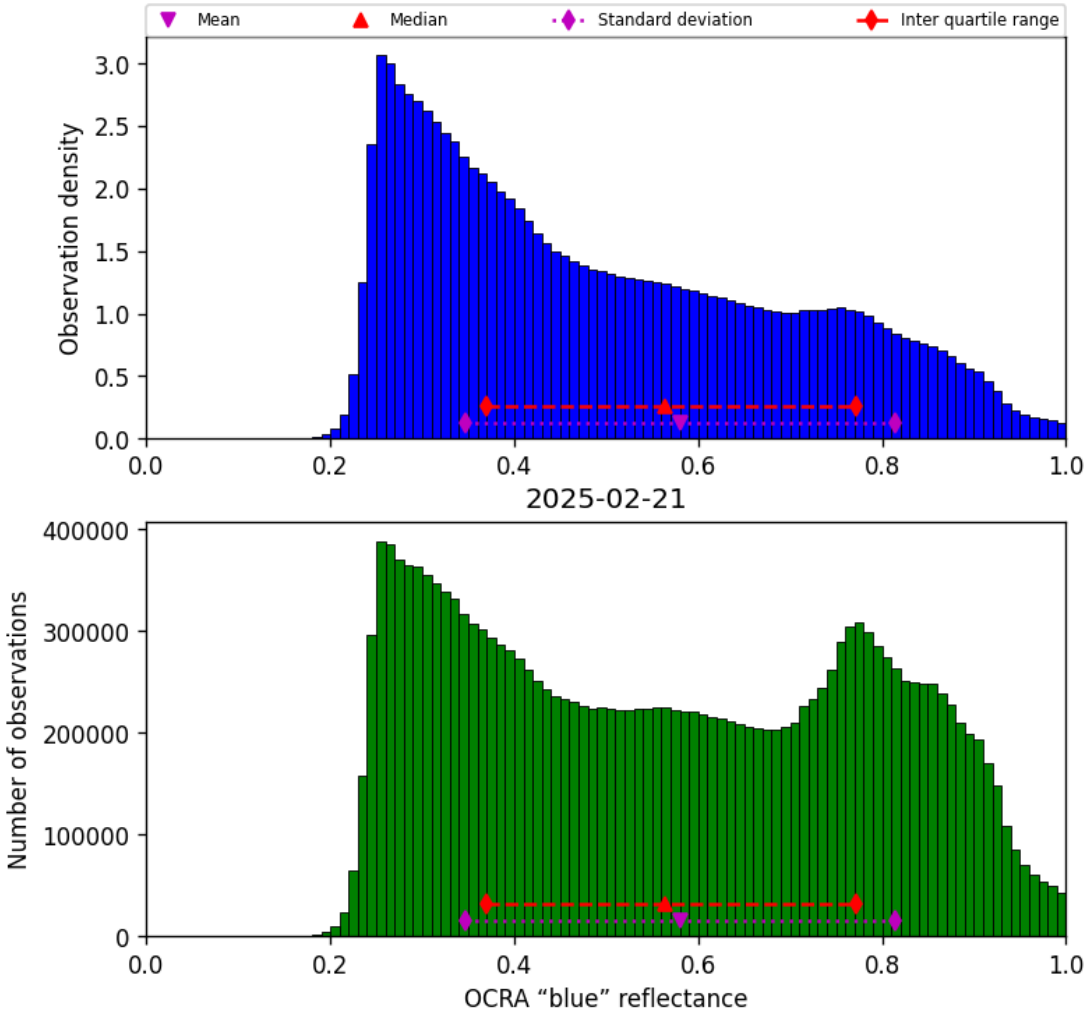

Figure 49: Histogram of “OCRA “blue” reflectance” for 2025-02-21 to 2025-02-22

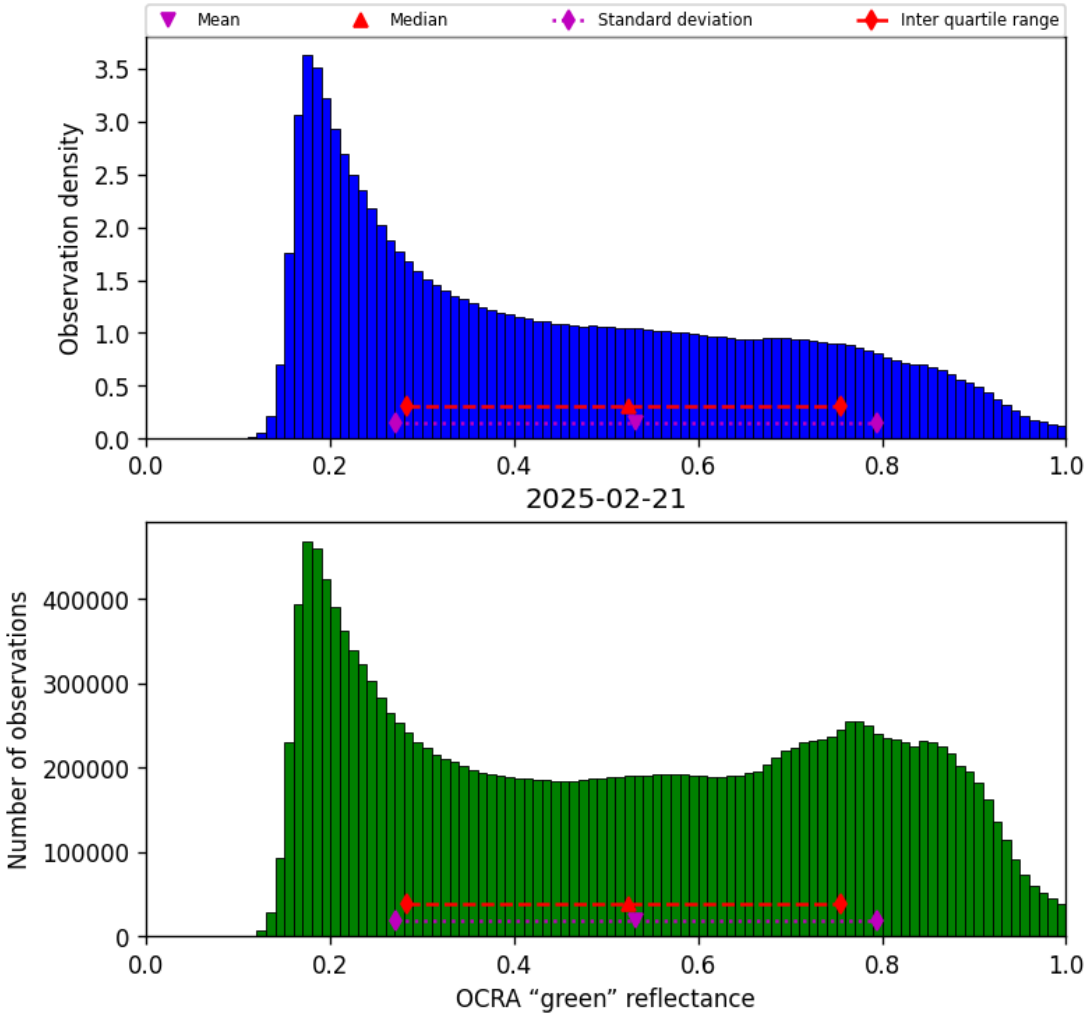

Figure 50: Histogram of “OCRA “green” reflectance” for 2025-02-21 to 2025-02-22

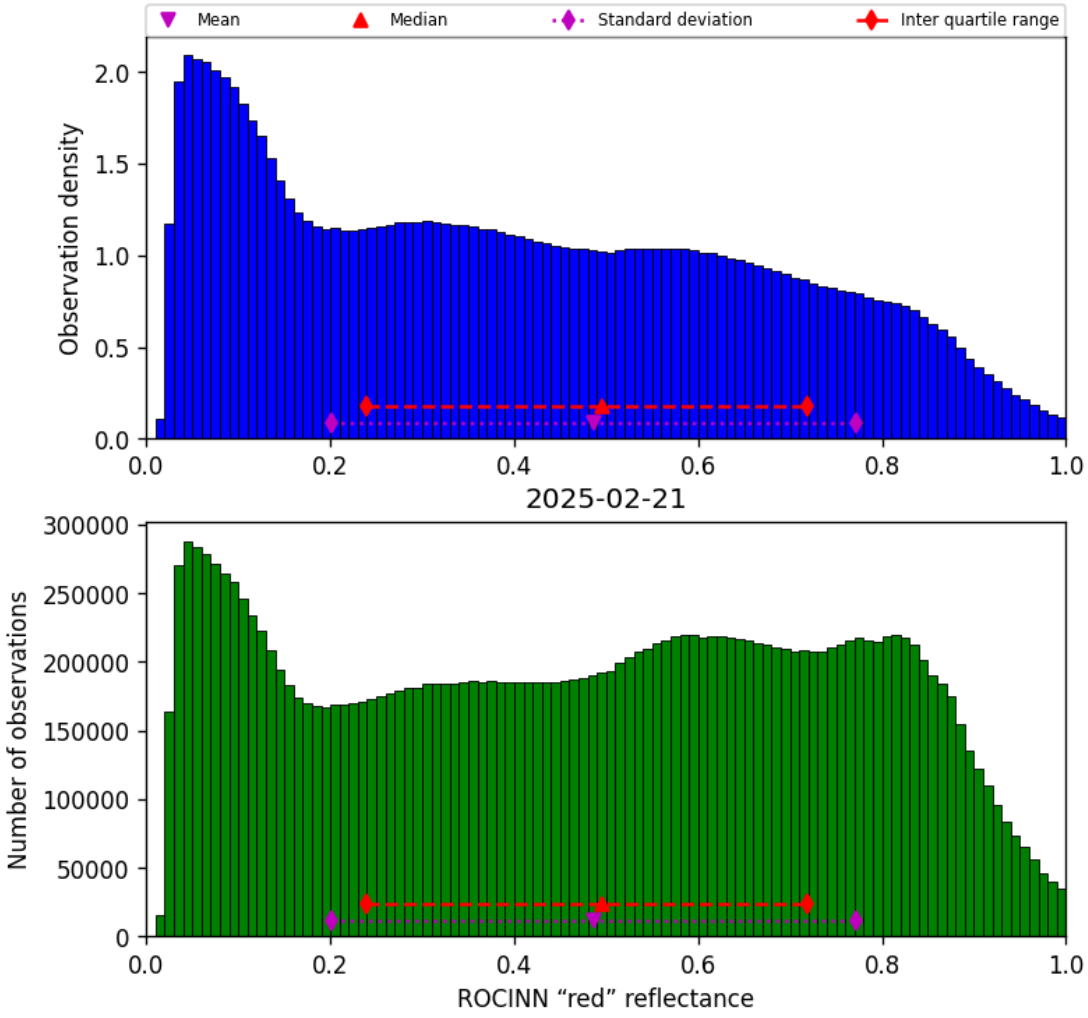

Figure 51: Histogram of “ROCINN “red” reflectance” for 2025-02-21 to 2025-02-22

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.

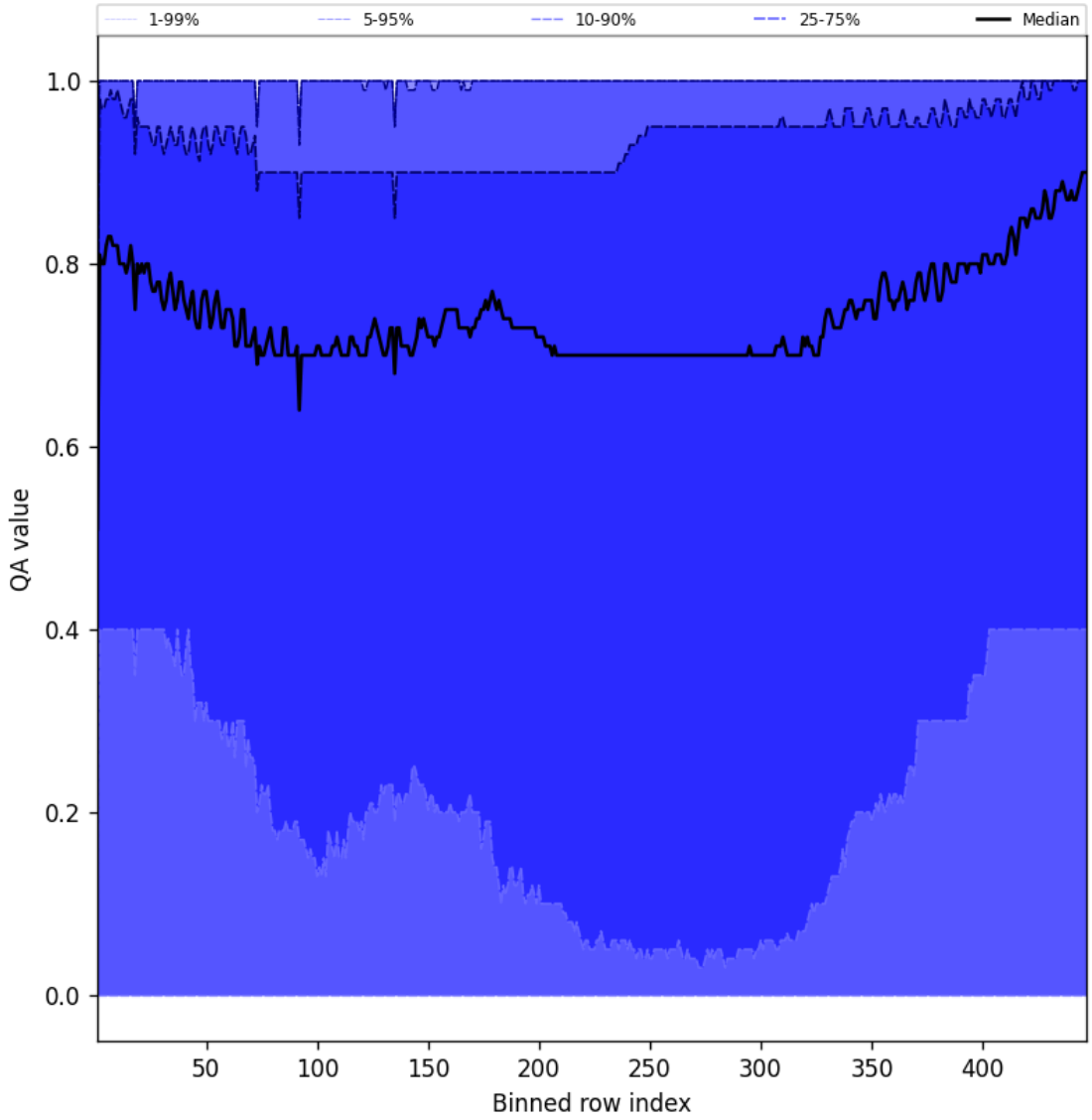

Figure 52: Along track statistics of “QA value” for 2025-02-21 to 2025-02-22

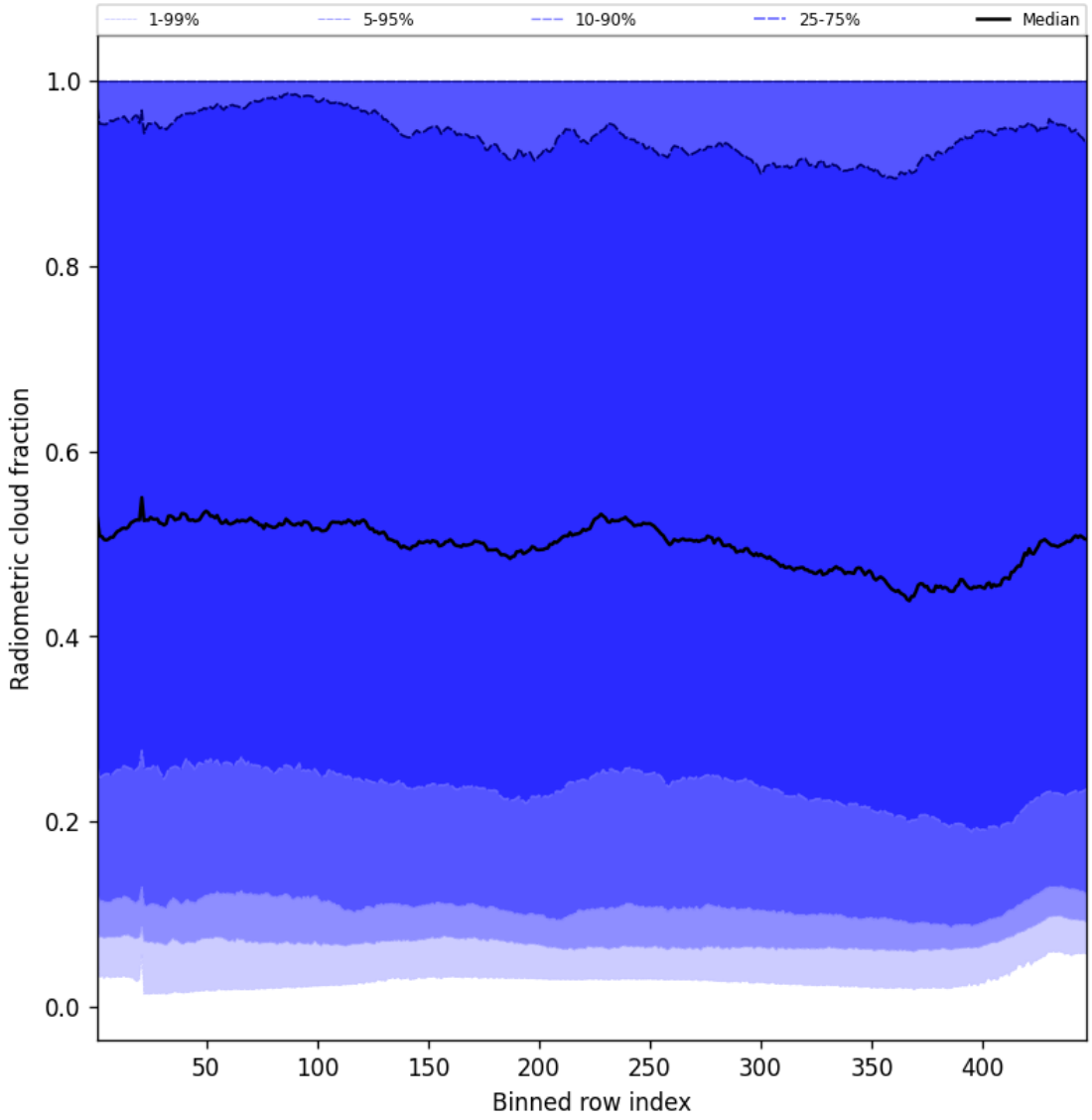

Figure 53: Along track statistics of “Radiometric cloud fraction” for 2025-02-21 to 2025-02-22

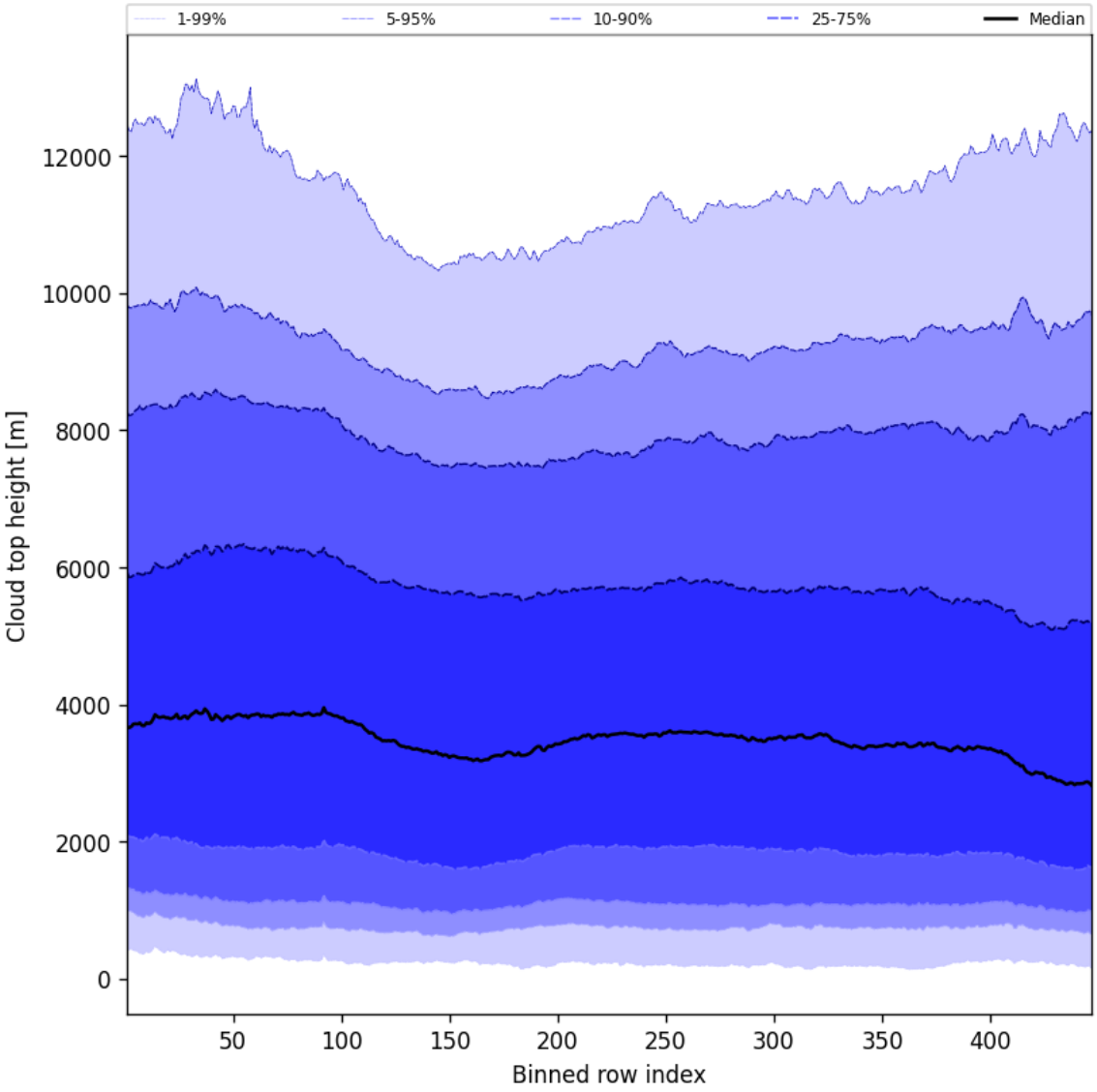

Figure 54: Along track statistics of “Cloud top height” for 2025-02-21 to 2025-02-22

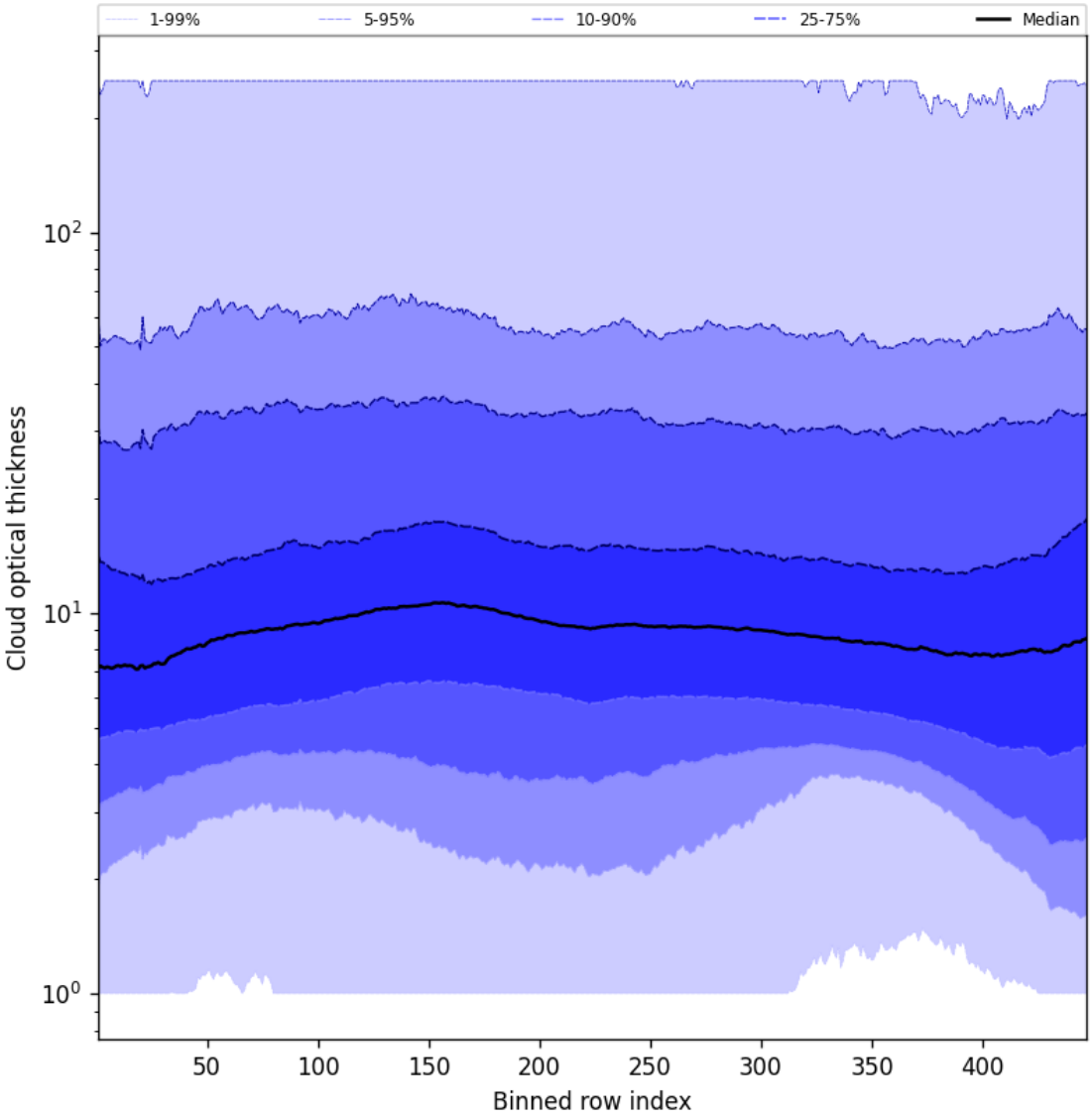

Figure 55: Along track statistics of “Cloud optical thickness” for 2025-02-21 to 2025-02-22

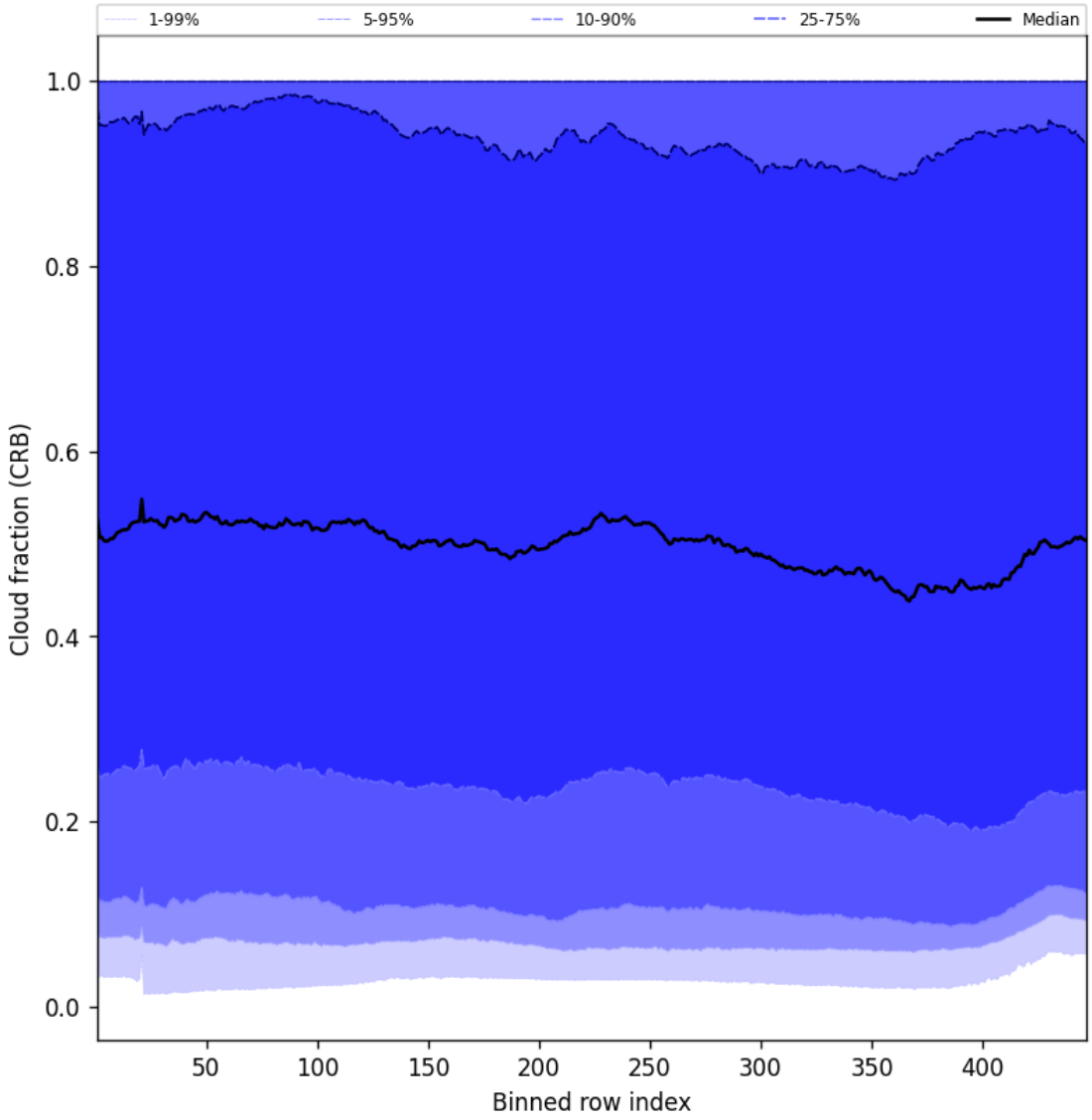

Figure 56: Along track statistics of “Cloud fraction (CRB)” for 2025-02-21 to 2025-02-22

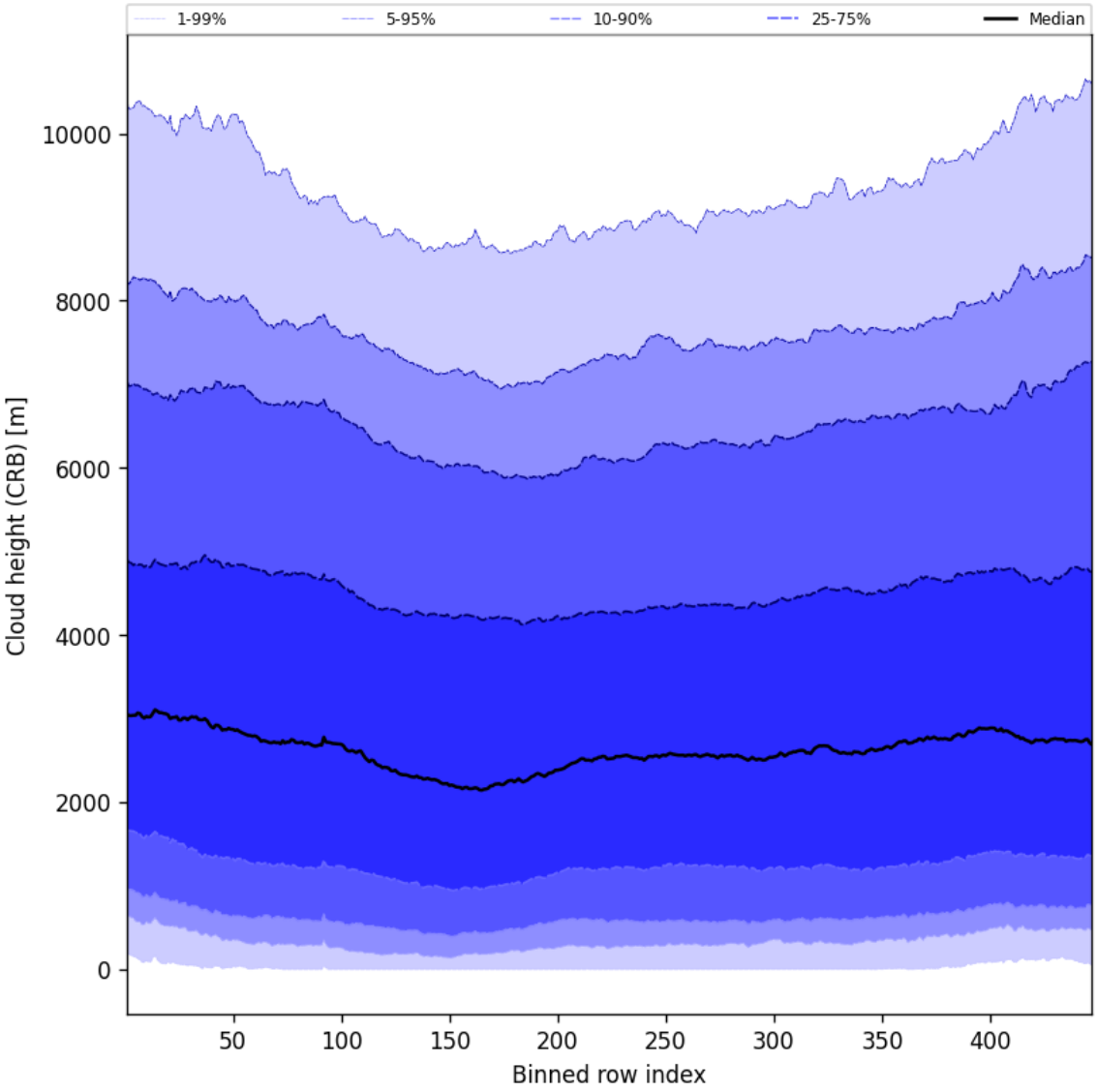

Figure 57: Along track statistics of “Cloud height (CRB)” for 2025-02-21 to 2025-02-22

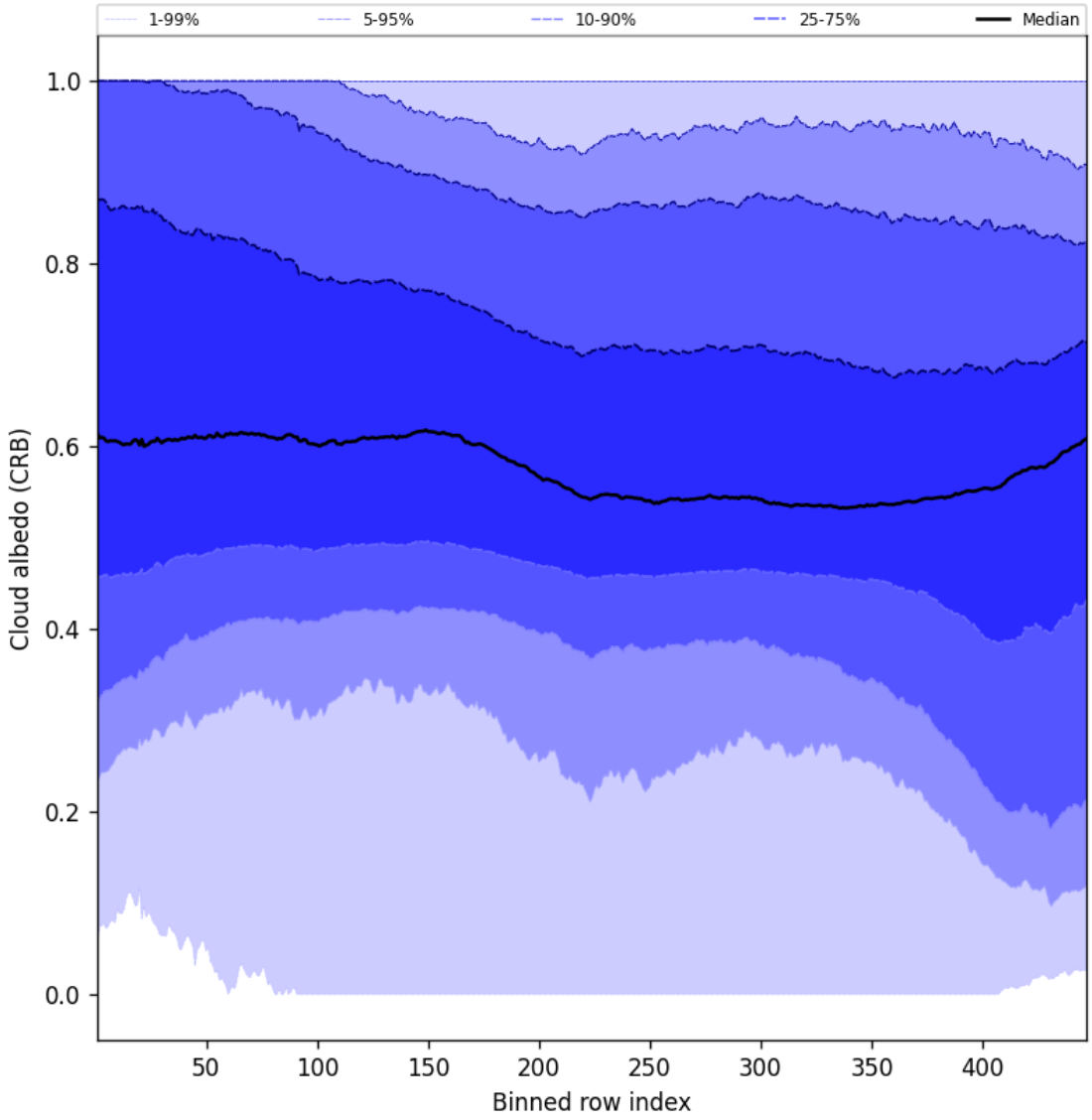

Figure 58: Along track statistics of “Cloud albedo (CRB)” for 2025-02-21 to 2025-02-22

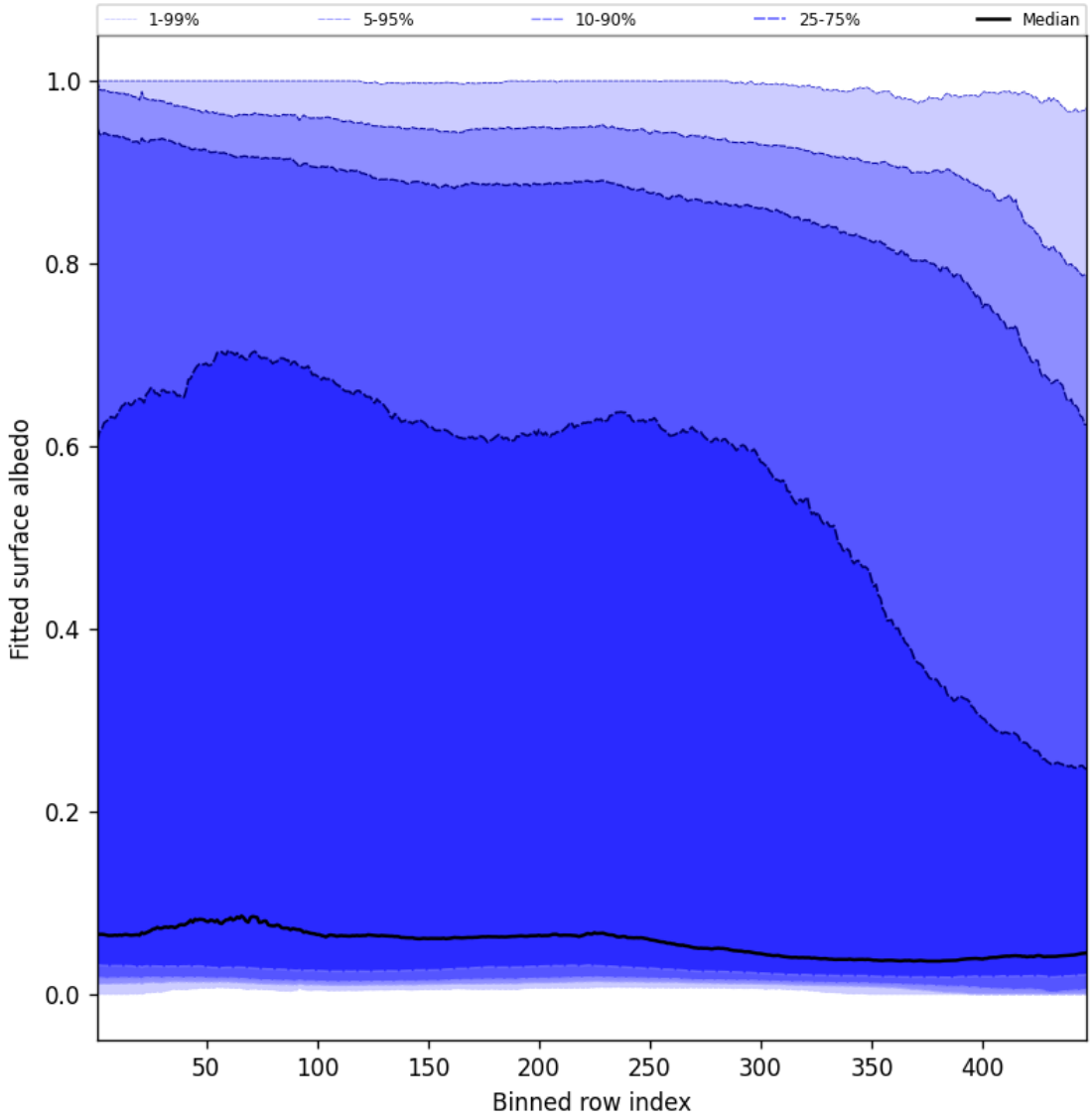

Figure 59: Along track statistics of “Fitted surface albedo” for 2025-02-21 to 2025-02-22

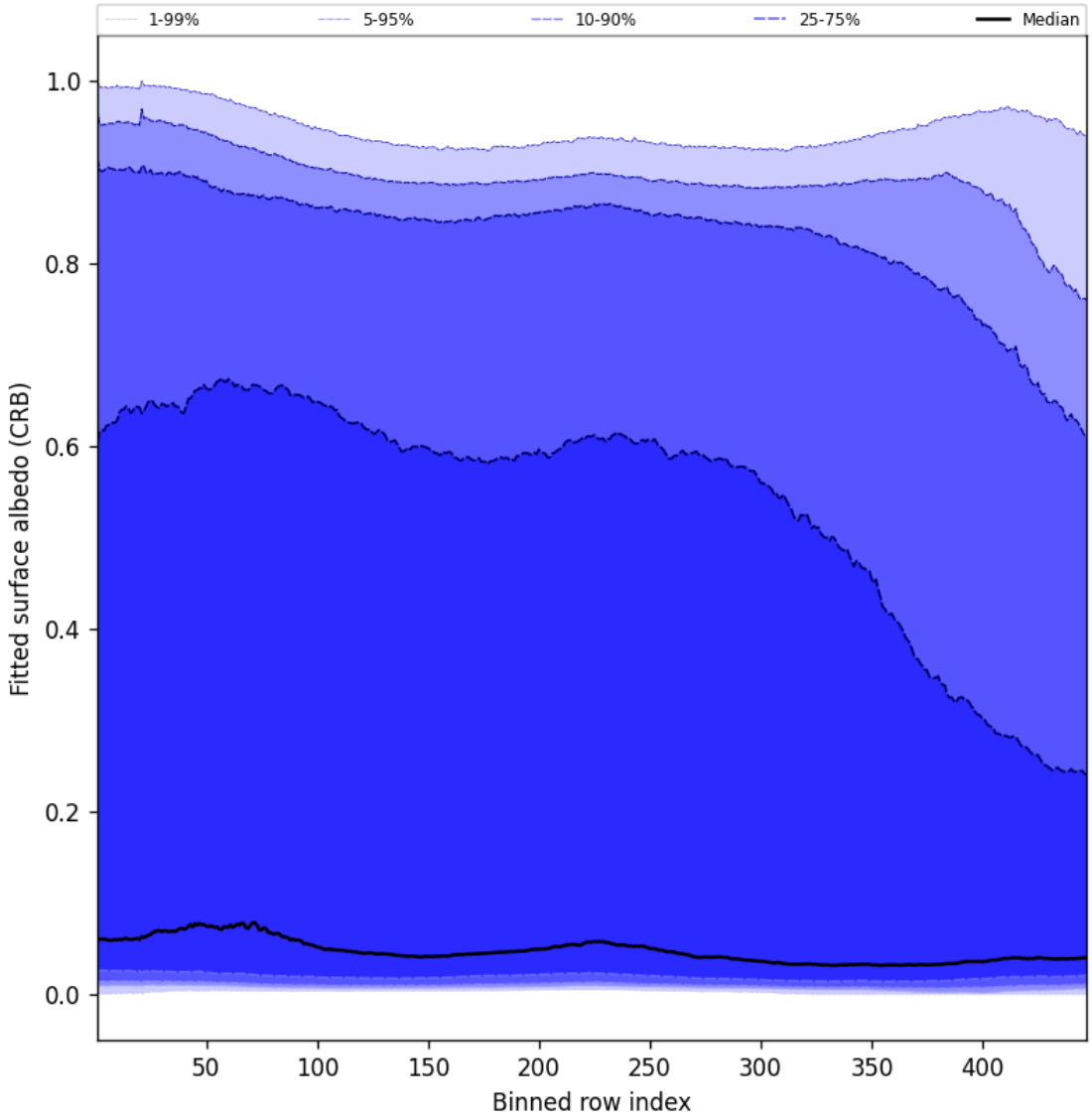

Figure 60: Along track statistics of “Fitted surface albedo (CRB)” for 2025-02-21 to 2025-02-22

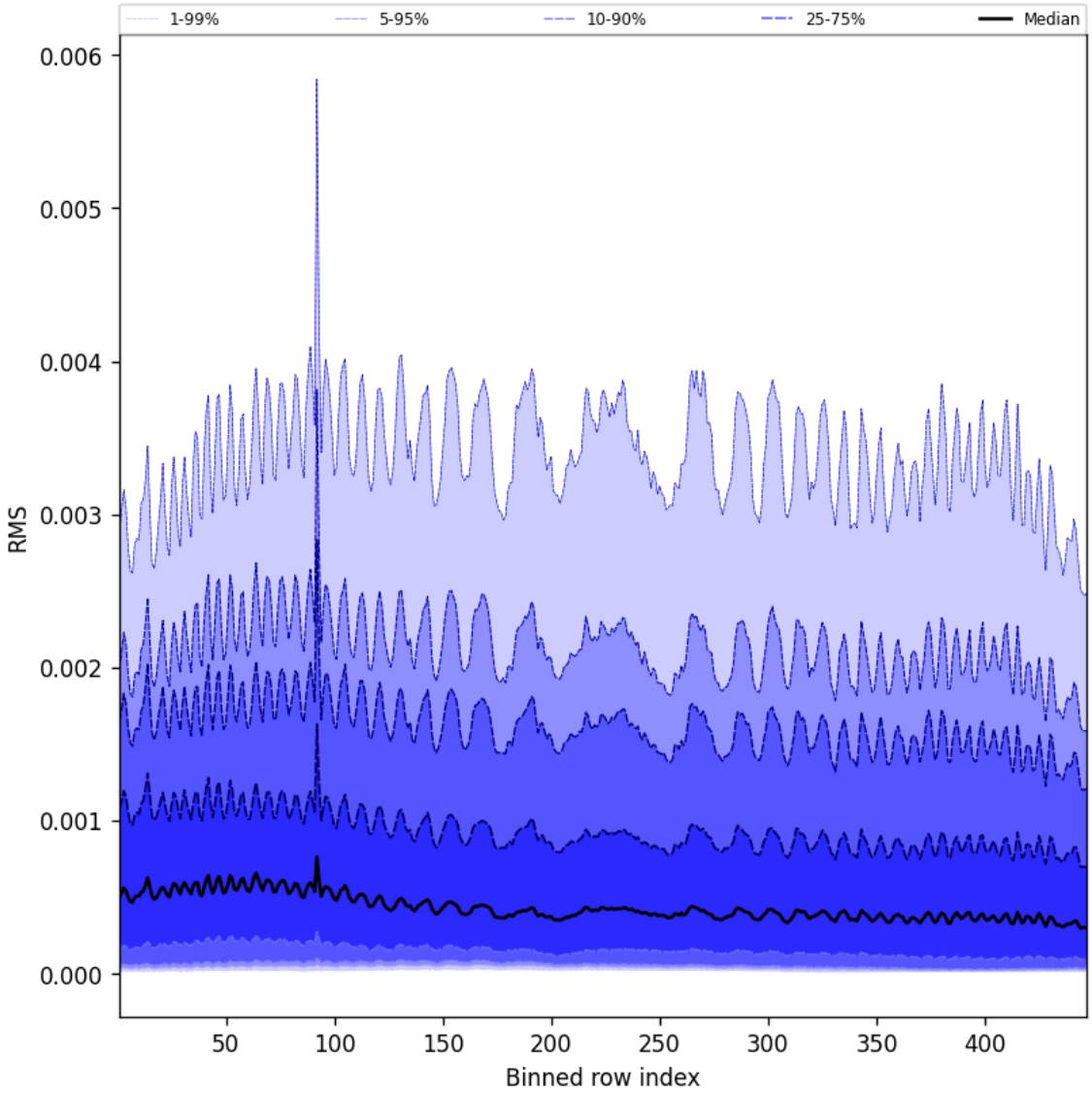

Figure 61: Along track statistics of “RMS” for 2025-02-21 to 2025-02-22

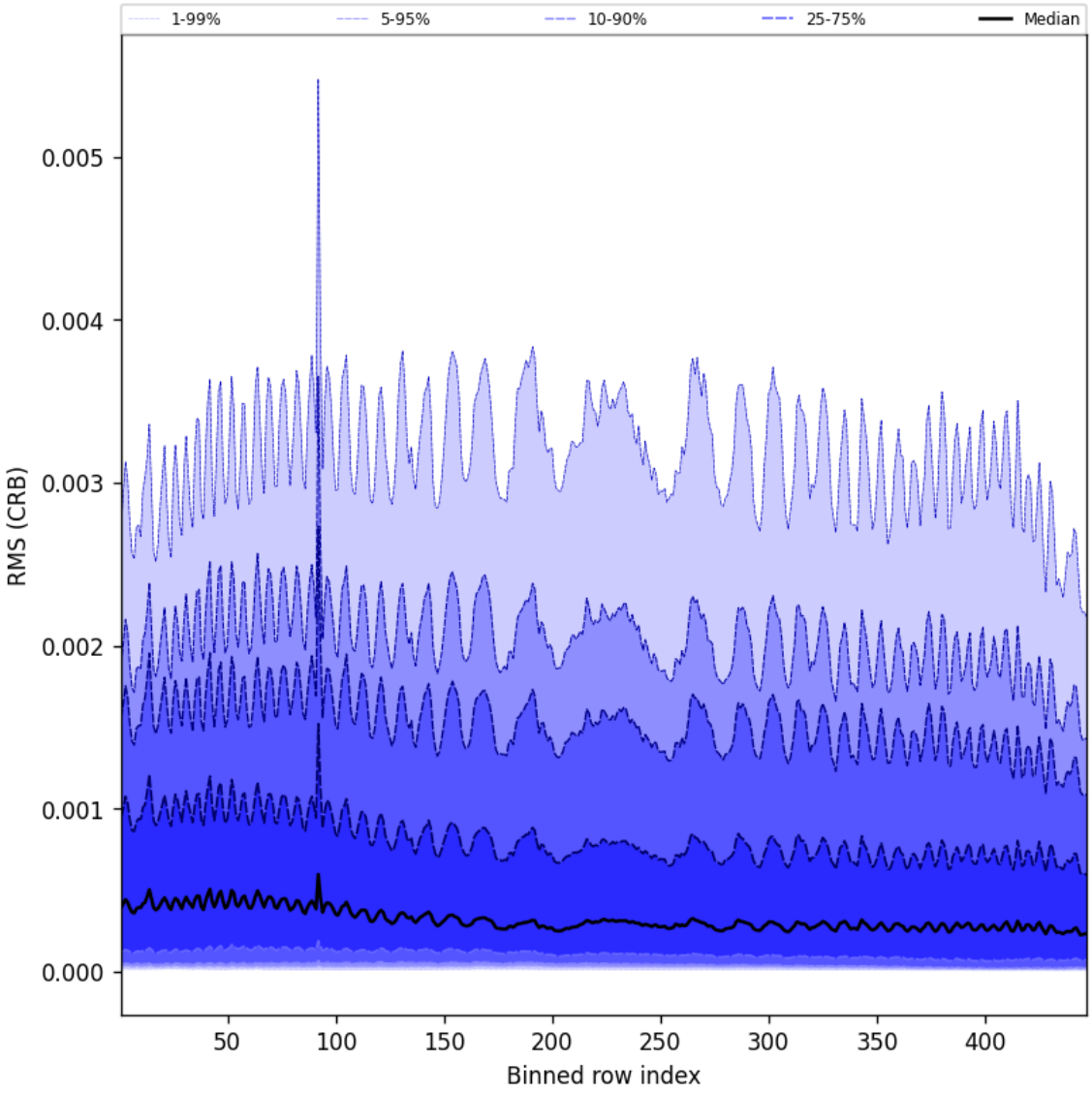

Figure 62: Along track statistics of “RMS (CRB)” for 2025-02-21 to 2025-02-22

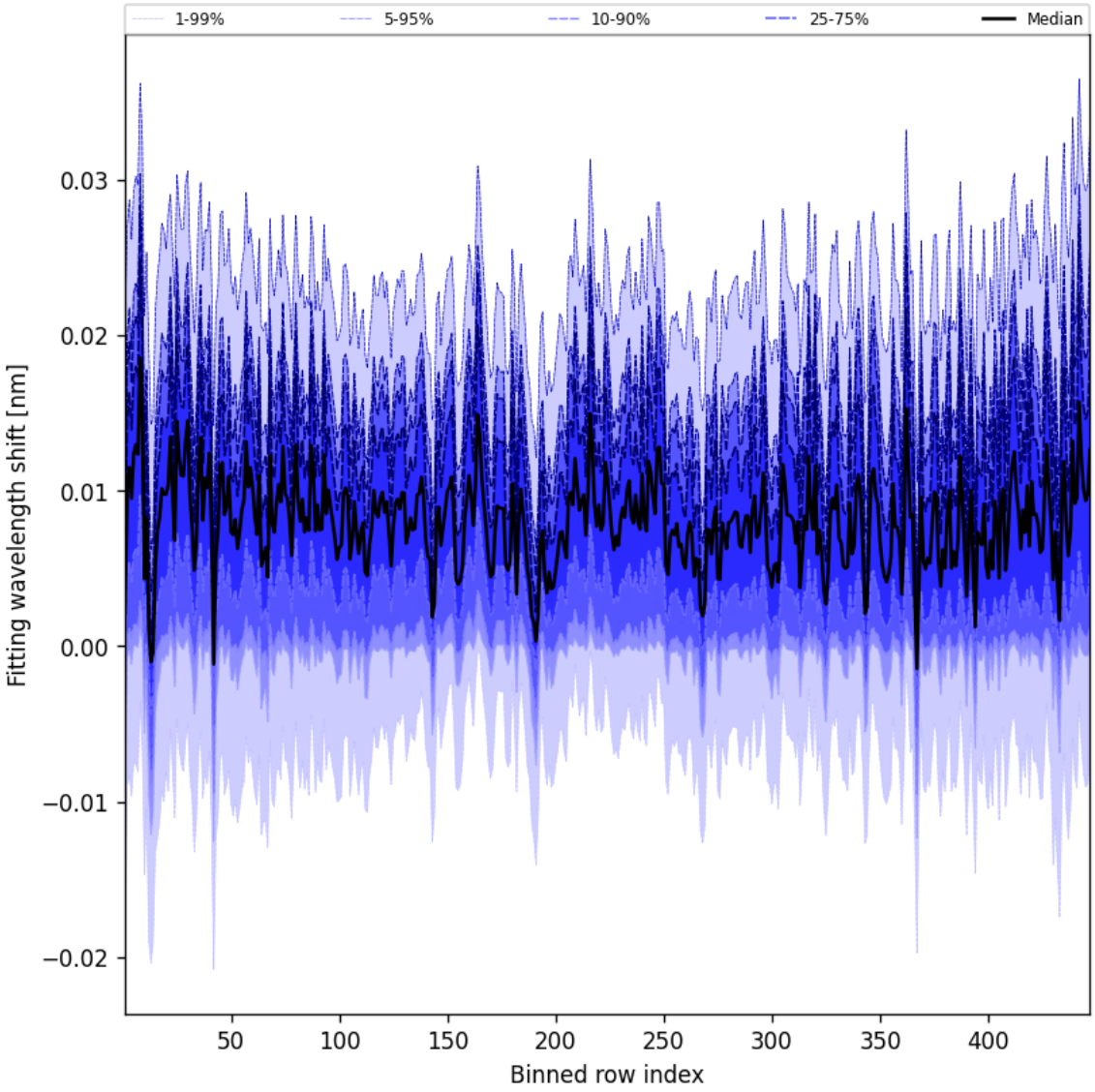

Figure 63: Along track statistics of “Fitting wavelength shift” for 2025-02-21 to 2025-02-22

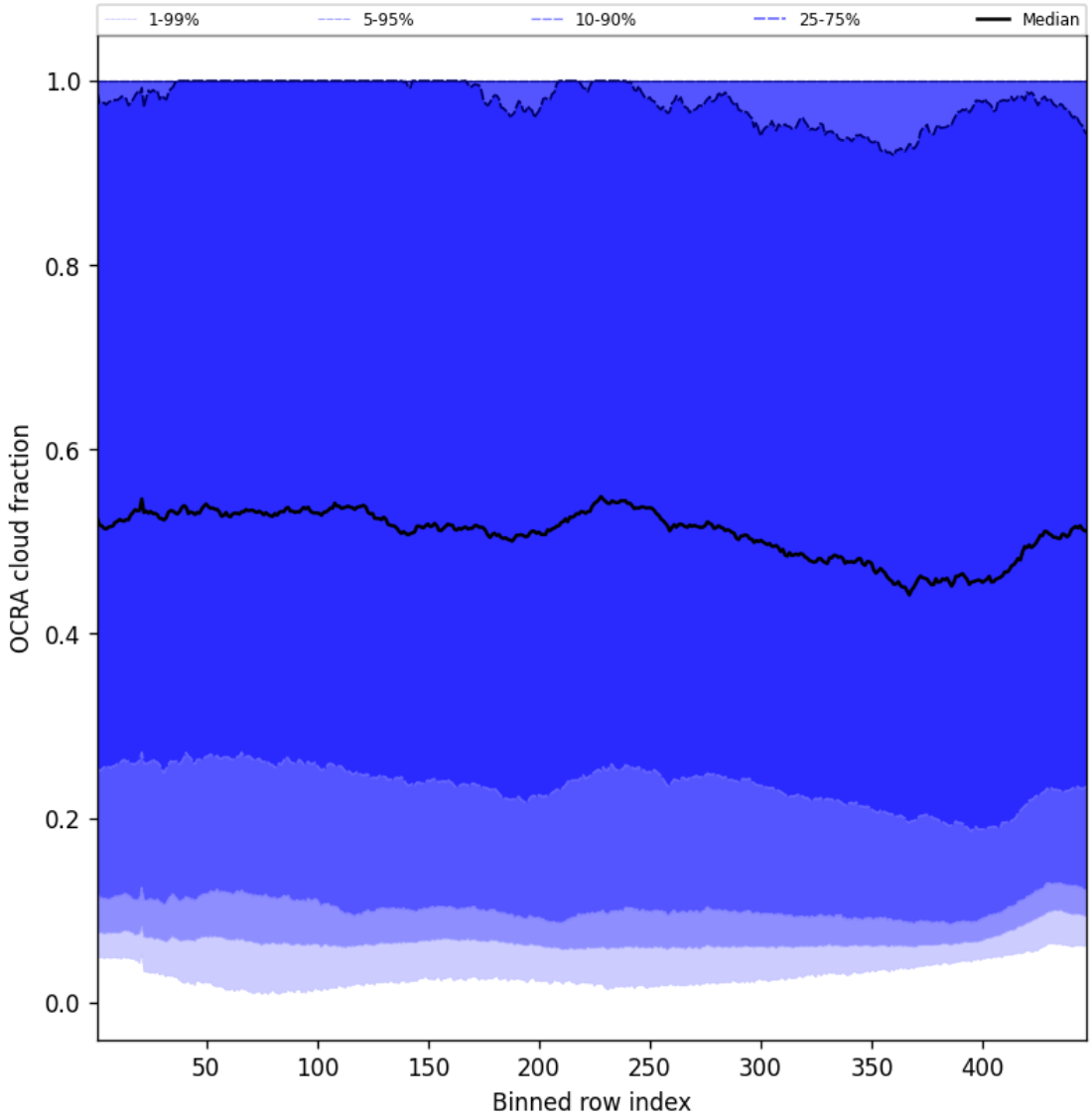

Figure 64: Along track statistics of “OCRA cloud fraction” for 2025-02-21 to 2025-02-22

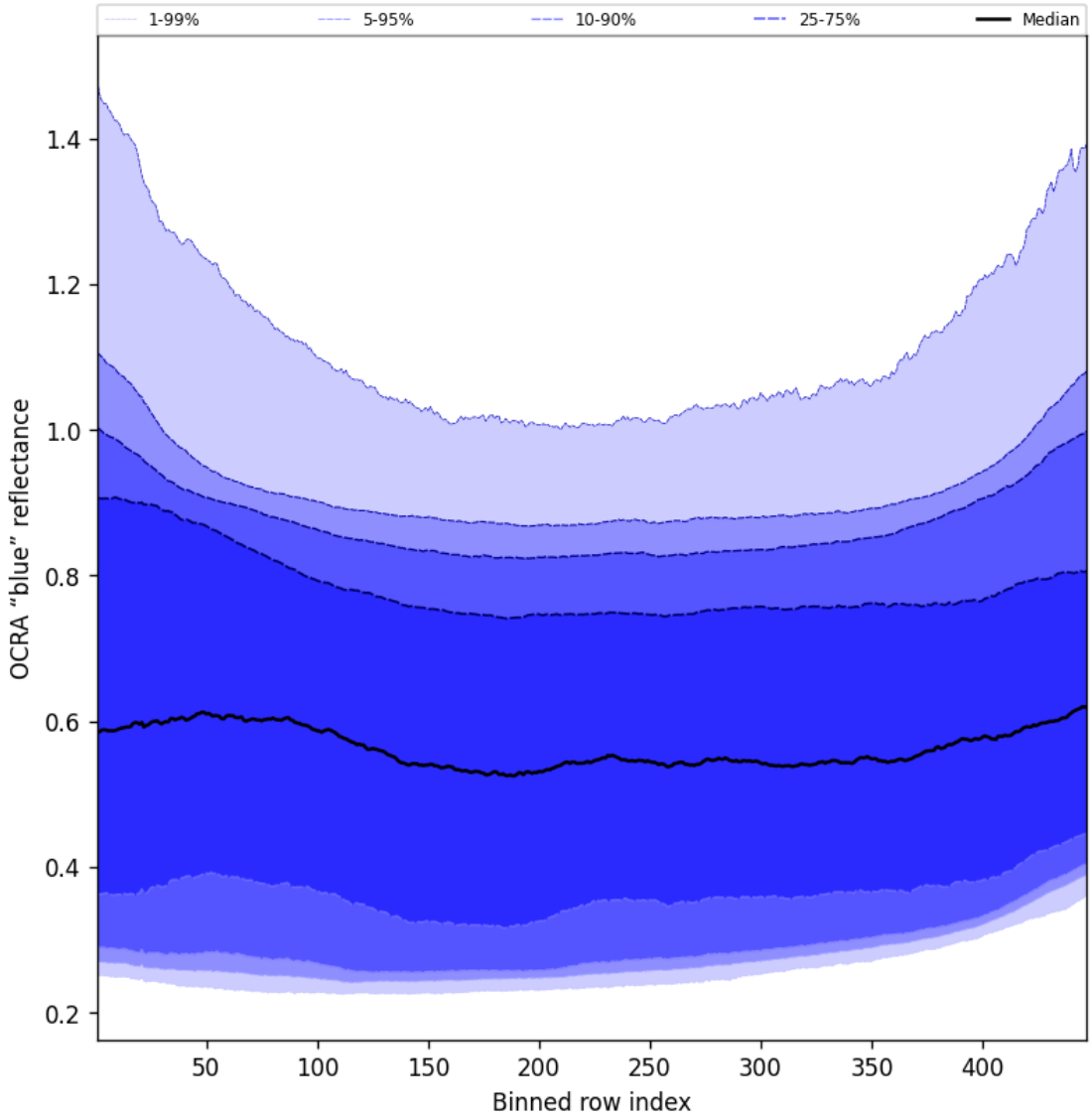

Figure 65: Along track statistics of "OCRA "blue" reflectance" for 2025-02-21 to 2025-02-22

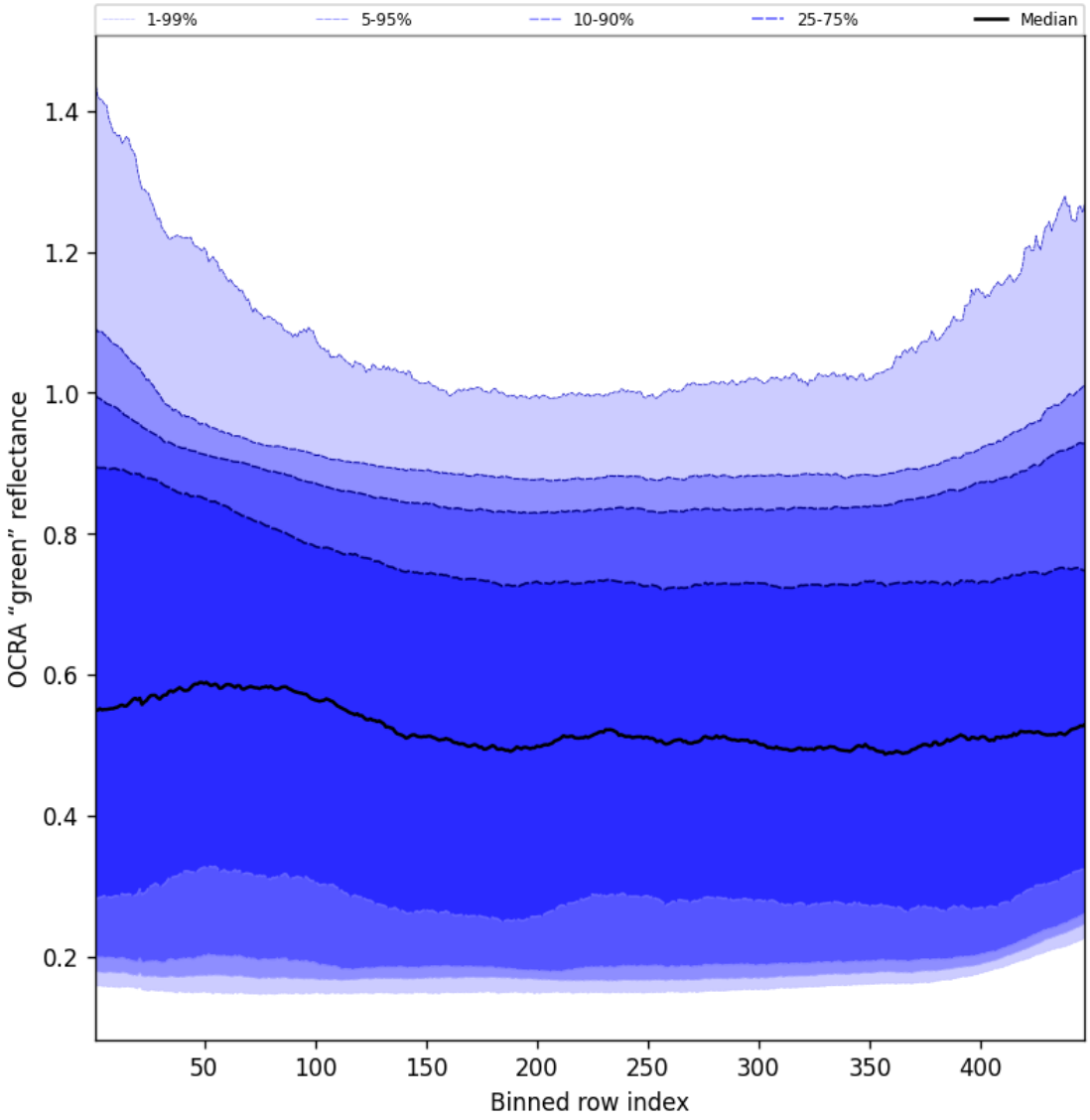

Figure 66: Along track statistics of "OCRA "green" reflectance" for 2025-02-21 to 2025-02-22

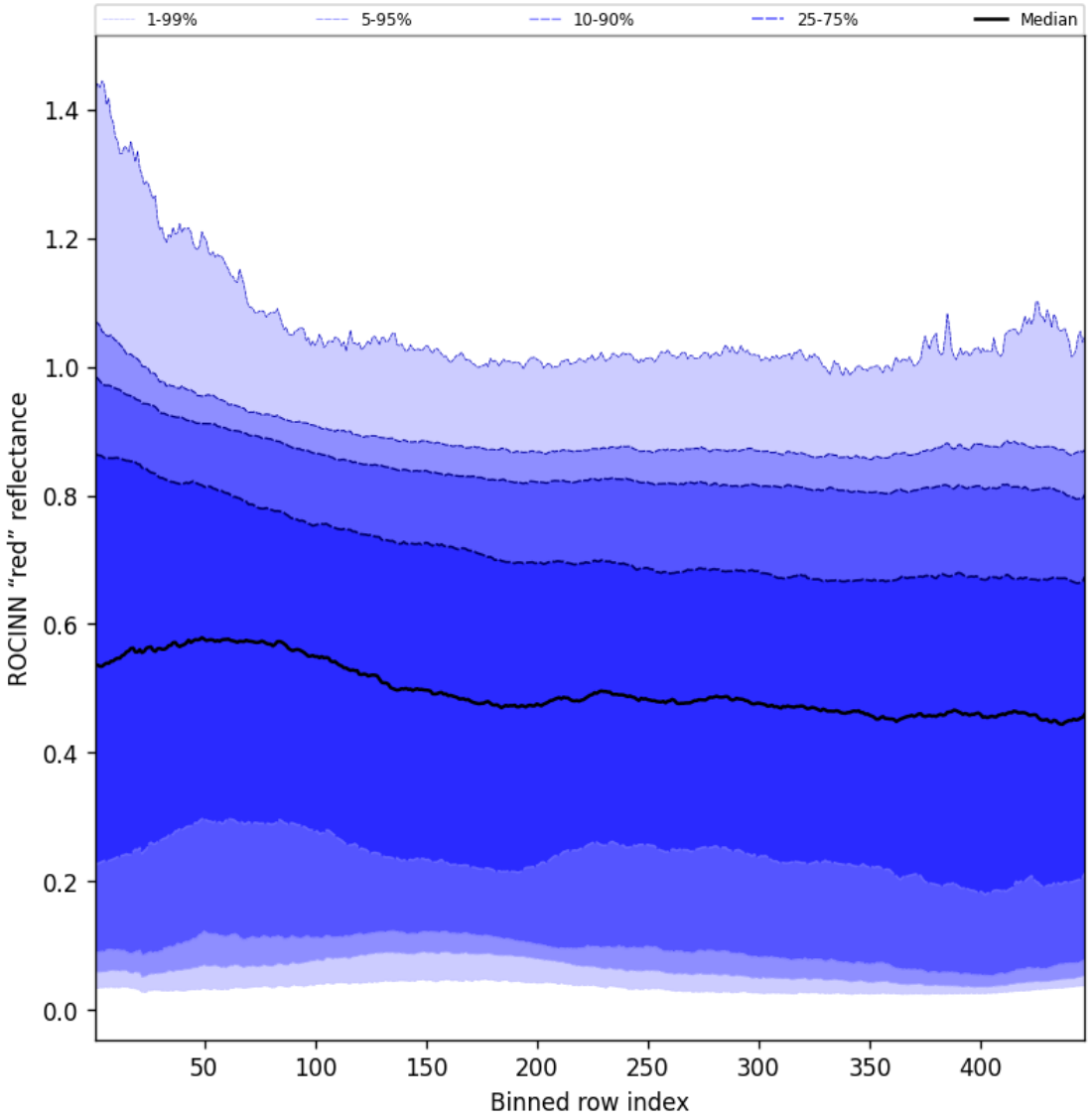

Figure 67: Along track statistics of “ROCINN “red” reflectance” for 2025-02-21 to 2025-02-22

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.

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11 Copyright information of ‘PyCAMA’

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