

PyCAMA report generated by tropl2-proc

tropl2-proc

2025-01-24 (09:15)

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 $\frac{1}{2}$ 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]	0.611 ± 0.371	20463619	5.000×10^{-3}	0.600	0.720	0.0	1.000
cloud fraction [1]	0.564 ± 0.340	20463619	0.995	0.707	0.540	4.921×10^{-3}	1.000
cloud top height [m]	$(0.412 \pm 0.263) \times 10^4$	20463619	1.575×10^3	3.760×10^3	3.676×10^3	0.0	2.000×10^4
cloud optical thickness [1]	19.2 ± 36.7	20463619	9.34	10.1	9.06	1.000	250
cloud fraction crb [1]	0.564 ± 0.340	20463619	0.995	0.708	0.540	7.518×10^{-3}	1.000
cloud height crb [m]	$(0.314 \pm 0.223) \times 10^4$	20463619	975	3.181×10^3	2.731×10^3	0.0	2.000×10^4
cloud albedo crb [1]	0.601 ± 0.220	20463619	0.995	0.303	0.584	0.0	1.000
surface albedo fitted [1]	0.282 ± 0.344	20463619	2.500×10^{-2}	0.521	5.336×10^{-2}	0.0	1.000
surface albedo fitted crb [1]	0.271 ± 0.333	20463619	1.500×10^{-2}	0.515	4.402×10^{-2}	0.0	1.000
fitted root mean square [1]	$(7.434 \pm 11.048) \times 10^{-4}$	20463619	5.000×10^{-5}	8.948×10^{-4}	4.465×10^{-4}	9.568×10^{-7}	0.746
fitted root mean square crb [1]	$(6.399 \pm 9.695) \times 10^{-4}$	20463619	5.000×10^{-5}	8.305×10^{-4}	3.239×10^{-4}	9.332×10^{-7}	0.539
wavelength shift [nm]	$(8.085 \pm 6.984) \times 10^{-3}$	20463619	9.000×10^{-4}	1.004×10^{-2}	7.668×10^{-3}	-5.023×10^{-2}	0.452
cloud fraction apriori [1]	0.573 ± 0.344	20463619	0.995	0.750	0.558	0.0	1.000
reflectance blue ocra [1]	0.589 ± 0.236	20463619	0.265	0.415	0.576	0.132	2.01
reflectance green ocra [1]	0.541 ± 0.266	20463619	0.175	0.486	0.536	7.714×10^{-2}	1.99
reflectance continuum aband [1]	0.491 ± 0.291	20463619	4.500×10^{-2}	0.502	0.500	1.225×10^{-2}	4.80

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	0.900	1.000	1.000	1.000	1.000
cloud fraction [1]	2.756×10^{-2}	7.126×10^{-2}	0.110	0.158	0.249	0.956	1.000	1.000	1.000	1.000
cloud top height [m]	330	868	1.211×10^3	1.514×10^3	1.962×10^3	5.723×10^3	6.770×10^3	7.746×10^3	9.024×10^3	1.148×10^4
cloud optical thickness [1]	1.000	2.55	3.69	4.60	5.53	15.6	23.7	35.8	66.4	250
cloud fraction crb [1]	2.717×10^{-2}	7.060×10^{-2}	0.109	0.158	0.248	0.956	1.000	1.000	1.000	1.000
cloud height crb [m]	23.1	385	684	942	1.320×10^3	4.502×10^3	5.434×10^3	6.287×10^3	7.420×10^3	9.448×10^3
cloud albedo crb [1]	0.0	0.221	0.347	0.414	0.462	0.765	0.848	0.908	0.978	1.000
surface albedo fitted [1]	0.0	7.663×10^{-3}	1.278×10^{-2}	1.740×10^{-2}	2.424×10^{-2}	0.546	0.802	0.898	0.955	1.000
surface albedo fitted crb [1]	0.0	5.847×10^{-3}	9.241×10^{-3}	1.282×10^{-2}	1.845×10^{-2}	0.533	0.793	0.863	0.900	0.946
fitted root mean square [1]	1.588×10^{-5}	3.079×10^{-5}	5.135×10^{-5}	8.234×10^{-5}	1.450×10^{-4}	1.040×10^{-3}	1.433×10^{-3}	1.831×10^{-3}	2.368×10^{-3}	3.592×10^{-3}
fitted root mean square crb [1]	9.790×10^{-6}	2.122×10^{-5}	3.563×10^{-5}	5.519×10^{-5}	9.542×10^{-5}	9.259×10^{-4}	1.313×10^{-3}	1.697×10^{-3}	2.228×10^{-3}	3.360×10^{-3}
wavelength shift [nm]	-7.829×10^{-3}	-8.468×10^{-4}	1.703×10^{-4}	1.103×10^{-3}	2.765×10^{-3}	1.280×10^{-2}	1.509×10^{-2}	1.706×10^{-2}	1.967×10^{-2}	2.564×10^{-2}
cloud fraction apriori [1]	3.003×10^{-2}	6.768×10^{-2}	0.105	0.154	0.250	1.000	1.000	1.000	1.000	1.000
reflectance blue ocra [1]	0.235	0.261	0.287	0.319	0.374	0.789	0.859	0.902	0.939	1.11
reflectance green ocra [1]	0.153	0.174	0.196	0.225	0.284	0.771	0.849	0.897	0.937	1.07
reflectance continuum aband [1]	2.965×10^{-2}	5.352×10^{-2}	8.895×10^{-2}	0.137	0.233	0.735	0.816	0.865	0.914	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]	0.553 ± 0.404	7953200	0.890	0.700	0.0	1.000	1.000×10^{-2}	0.900
cloud fraction [1]	0.540 ± 0.342	7953200	0.702	0.500	5.642×10^{-3}	1.000	0.221	0.923
cloud top height [m]	$(0.425 \pm 0.262) \times 10^4$	7953200	3.966×10^3	3.811×10^3	0.0	2.000×10^4	2.047×10^3	6.013×10^3
cloud optical thickness [1]	27.7 ± 49.4	7953200	16.3	10.0	1.000	250	6.03	22.4
cloud fraction crb [1]	0.539 ± 0.342	7953200	0.701	0.497	8.484×10^{-3}	1.000	0.220	0.921
cloud height crb [m]	$(0.350 \pm 0.225) \times 10^4$	7953200	3.520×10^3	3.196×10^3	0.0	2.000×10^4	1.556×10^3	5.076×10^3
cloud albedo crb [1]	0.602 ± 0.216	7953200	0.279	0.586	0.0	1.000	0.468	0.747
surface albedo fitted [1]	0.212 ± 0.241	7953200	0.345	6.178×10^{-2}	0.0	1.000	2.877×10^{-2}	0.373
surface albedo fitted crb [1]	0.202 ± 0.234	7953200	0.344	5.289×10^{-2}	0.0	1.000	2.173×10^{-2}	0.366
fitted root mean square [1]	$(4.870 \pm 6.690) \times 10^{-4}$	7953200	5.203×10^{-4}	2.717×10^{-4}	1.334×10^{-6}	0.114	1.075×10^{-4}	6.279×10^{-4}
fitted root mean square crb [1]	$(3.742 \pm 5.406) \times 10^{-4}$	7953200	3.994×10^{-4}	1.617×10^{-4}	1.400×10^{-6}	8.259×10^{-2}	6.053×10^{-5}	4.599×10^{-4}
wavelength shift [nm]	$(6.653 \pm 6.614) \times 10^{-3}$	7953200	9.149×10^{-3}	5.617×10^{-3}	-4.507×10^{-2}	5.994×10^{-2}	1.672×10^{-3}	1.082×10^{-2}
cloud fraction apriori [1]	0.545 ± 0.346	7953200	0.733	0.508	0.0	1.000	0.219	0.953
reflectance blue ocra [1]	0.565 ± 0.220	7953200	0.339	0.551	0.132	2.01	0.379	0.718
reflectance green ocra [1]	0.511 ± 0.245	7953200	0.406	0.502	7.790×10^{-2}	1.99	0.288	0.694
reflectance continuum aband [1]	0.461 ± 0.277	7953200	0.431	0.455	1.335×10^{-2}	3.93	0.232	0.663

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]	0.648 ± 0.343	12510419	0.500	0.750	0.0	1.000	0.400	0.900
cloud fraction [1]	0.580 ± 0.337	12510419	0.702	0.565	4.921×10^{-3}	1.000	0.271	0.973
cloud top height [m]	$(0.403 \pm 0.263) \times 10^4$	12510419	3.635×10^3	3.596×10^3	0.0	2.000×10^4	1.911×10^3	5.546×10^3
cloud optical thickness [1]	13.8 ± 23.9	12510419	7.92	8.64	1.000	250	5.28	13.2
cloud fraction crb [1]	0.580 ± 0.337	12510419	0.703	0.565	7.518×10^{-3}	1.000	0.271	0.974
cloud height crb [m]	$(0.291 \pm 0.219) \times 10^4$	12510419	2.833×10^3	2.499×10^3	0.0	2.000×10^4	1.190×10^3	4.024×10^3
cloud albedo crb [1]	0.601 ± 0.223	12510419	0.318	0.581	0.0	1.000	0.458	0.776
surface albedo fitted [1]	0.327 ± 0.390	12510419	0.776	4.838×10^{-2}	0.0	1.000	2.169×10^{-2}	0.797
surface albedo fitted crb [1]	0.314 ± 0.377	12510419	0.775	3.950×10^{-2}	0.0	1.000	1.647×10^{-2}	0.792
fitted root mean square [1]	$(9.064 \pm 12.820) \times 10^{-4}$	12510419	1.103×10^{-3}	6.311×10^{-4}	9.568×10^{-7}	0.746	1.977×10^{-4}	1.300×10^{-3}
fitted root mean square crb [1]	$(8.088 \pm 11.306) \times 10^{-4}$	12510419	1.051×10^{-3}	5.293×10^{-4}	9.332×10^{-7}	0.539	1.523×10^{-4}	1.203×10^{-3}
wavelength shift [nm]	$(8.995 \pm 7.060) \times 10^{-3}$	12510419	9.851×10^{-3}	8.999×10^{-3}	-5.023×10^{-2}	0.452	3.871×10^{-3}	1.372×10^{-2}
cloud fraction apriori [1]	0.590 ± 0.341	12510419	0.725	0.588	0.0	1.000	0.275	1.000
reflectance blue oca [1]	0.604 ± 0.245	12510419	0.461	0.602	0.139	1.98	0.370	0.831
reflectance green oca [1]	0.560 ± 0.276	12510419	0.536	0.570	7.714×10^{-2}	1.97	0.281	0.817
reflectance continuum aband [1]	0.510 ± 0.298	12510419	0.542	0.540	1.225×10^{-2}	4.80	0.233	0.775

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]	0.723 ± 0.325	12570893	0.580	0.900	0.0	1.000	0.400	0.980
cloud fraction [1]	0.597 ± 0.361	12570893	0.774	0.631	4.921×10^{-3}	1.000	0.226	1.000
cloud top height [m]	$(0.361 \pm 0.252) \times 10^4$	12570893	3.298×10^3	2.857×10^3	0.0	2.000×10^4	1.674×10^3	4.972×10^3
cloud optical thickness [1]	18.1 ± 29.2	12570893	9.79	9.99	1.000	250	6.95	16.7
cloud fraction crb [1]	0.596 ± 0.362	12570893	0.775	0.629	7.518×10^{-3}	1.000	0.225	1.000
cloud height crb [m]	$(0.289 \pm 0.227) \times 10^4$	12570893	3.049×10^3	2.207×10^3	0.0	2.000×10^4	1.110×10^3	4.159×10^3
cloud albedo crb [1]	0.547 ± 0.174	12570893	0.210	0.528	0.0	1.000	0.446	0.656
surface albedo fitted [1]	$(7.565 \pm 15.898) \times 10^{-2}$	12570893	2.902×10^{-2}	2.895×10^{-2}	0.0	1.000	1.711×10^{-2}	4.613×10^{-2}
surface albedo fitted crb [1]	$(7.079 \pm 16.045) \times 10^{-2}$	12570893	2.503×10^{-2}	2.247×10^{-2}	0.0	1.000	1.258×10^{-2}	3.761×10^{-2}
fitted root mean square [1]	$(6.773 \pm 12.286) \times 10^{-4}$	12570893	8.405×10^{-4}	3.136×10^{-4}	1.043×10^{-6}	0.746	9.442×10^{-5}	9.349×10^{-4}
fitted root mean square crb [1]	$(6.368 \pm 11.008) \times 10^{-4}$	12570893	8.245×10^{-4}	2.859×10^{-4}	9.332×10^{-7}	0.539	8.099×10^{-5}	9.055×10^{-4}
wavelength shift [nm]	$(7.787 \pm 7.416) \times 10^{-3}$	12570893	1.040×10^{-2}	7.108×10^{-3}	-4.789×10^{-2}	0.452	2.310×10^{-3}	1.271×10^{-2}
cloud fraction apriori [1]	0.598 ± 0.367	12570893	0.782	0.634	0.0	1.000	0.218	1.000
reflectance blue ocrs [1]	0.504 ± 0.196	12570893	0.314	0.467	0.170	1.93	0.335	0.649
reflectance green ocrs [1]	0.443 ± 0.225	12570893	0.384	0.404	9.172×10^{-2}	1.86	0.237	0.621
reflectance continuum aband [1]	0.380 ± 0.264	12570893	0.461	0.347	1.225×10^{-2}	4.80	0.134	0.595

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]	0.456 ± 0.362	6389231	0.700	0.590	0.0	1.000	0.0	0.700
cloud fraction [1]	0.510 ± 0.288	6389231	0.455	0.471	5.868×10^{-3}	1.000	0.279	0.735
cloud top height [m]	$(0.497 \pm 0.255) \times 10^4$	6389231	3.057×10^3	4.842×10^3	0.0	2.000×10^4	3.267×10^3	6.324×10^3
cloud optical thickness [1]	17.6 ± 40.2	6389231	7.09	6.23	1.000	250	4.57	11.7
cloud fraction crb [1]	0.511 ± 0.288	6389231	0.456	0.472	8.484×10^{-3}	1.000	0.280	0.736
cloud height crb [m]	$(0.348 \pm 0.209) \times 10^4$	6389231	2.700×10^3	3.250×10^3	0.0	2.000×10^4	2.002×10^3	4.702×10^3
cloud albedo crb [1]	0.693 ± 0.255	6389231	0.343	0.752	0.0	1.000	0.551	0.894
surface albedo fitted [1]	0.656 ± 0.299	6389231	0.591	0.787	0.0	1.000	0.330	0.922
surface albedo fitted crb [1]	0.633 ± 0.283	6389231	0.551	0.781	0.0	1.000	0.326	0.878
fitted root mean square [1]	$(9.023 \pm 8.707) \times 10^{-4}$	6389231	9.122×10^{-4}	6.788×10^{-4}	1.133×10^{-6}	0.217	3.335×10^{-4}	1.246×10^{-3}
fitted root mean square crb [1]	$(7.096 \pm 7.181) \times 10^{-4}$	6389231	8.839×10^{-4}	4.780×10^{-4}	1.552×10^{-6}	8.379×10^{-2}	1.664×10^{-4}	1.050×10^{-3}
wavelength shift [nm]	$(9.123 \pm 6.072) \times 10^{-3}$	6389231	8.856×10^{-3}	9.155×10^{-3}	-3.596×10^{-2}	6.969×10^{-2}	4.503×10^{-3}	1.336×10^{-2}
cloud fraction apriori [1]	0.532 ± 0.294	6389231	0.476	0.500	0.0	1.000	0.295	0.772
reflectance blue ocrs [1]	0.737 ± 0.228	6389231	0.303	0.812	0.132	1.98	0.596	0.899
reflectance green ocrs [1]	0.711 ± 0.250	6389231	0.337	0.797	7.714×10^{-2}	1.97	0.559	0.896
reflectance continuum aband [1]	0.686 ± 0.232	6389231	0.339	0.747	1.656×10^{-2}	4.19	0.519	0.859

3 Granule outlines

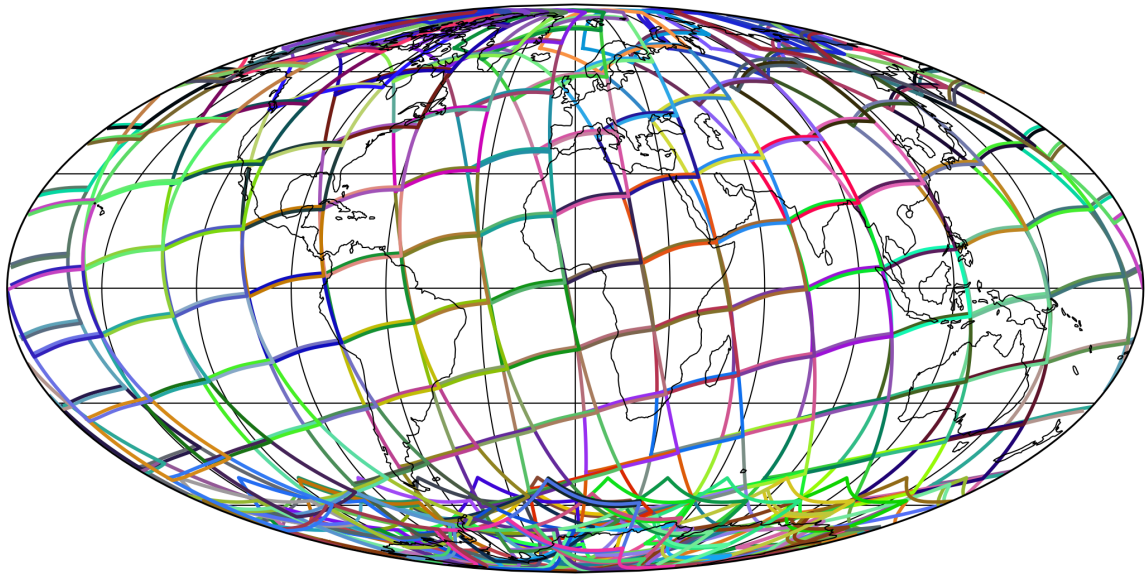


Figure 1: Outline of the granules.

4 Input data monitoring

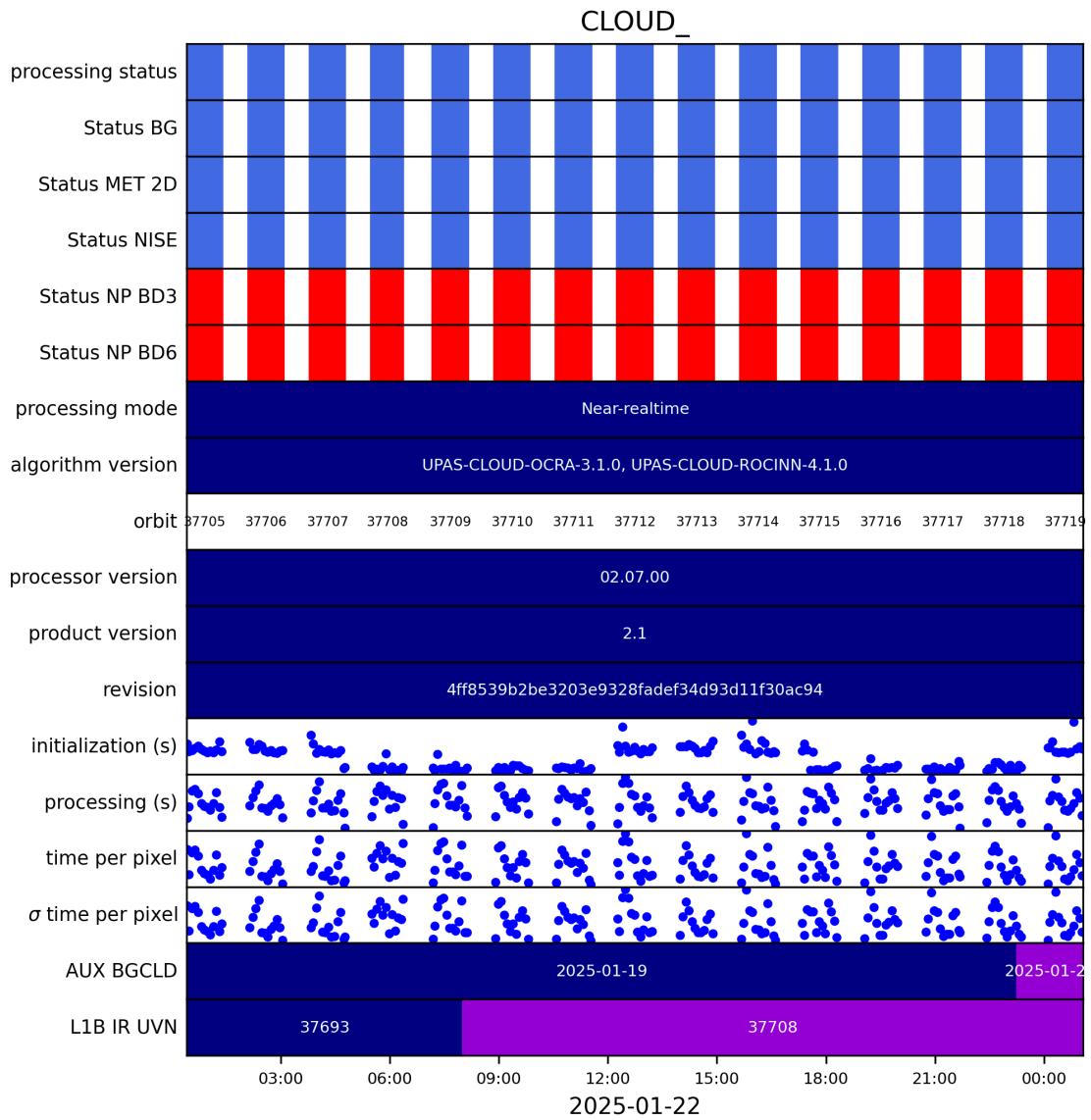


Figure 2: Input data per granule

5 Warnings and errors

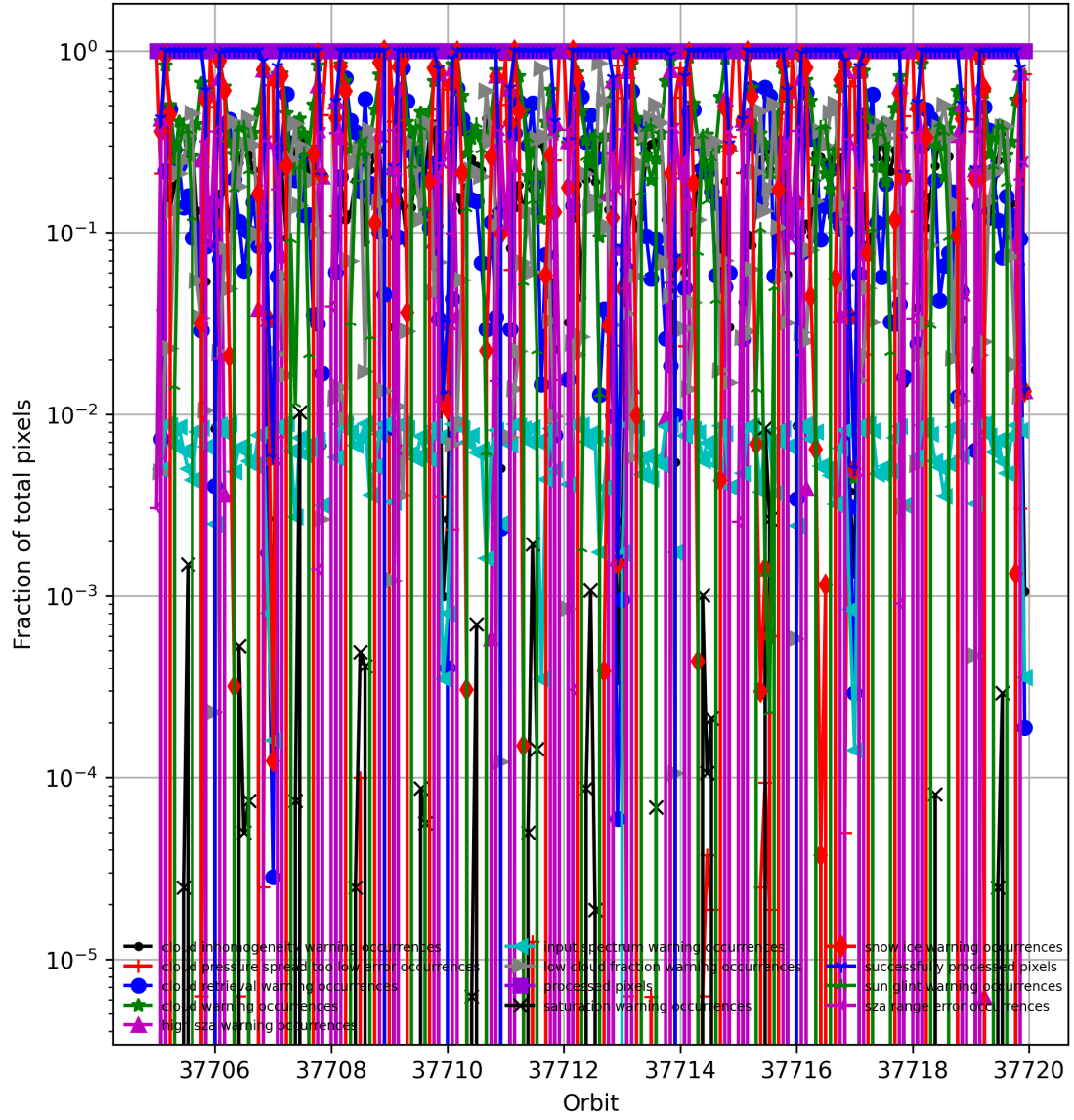


Figure 3: Fraction of pixels with specific warnings and errors during processing

6 World maps

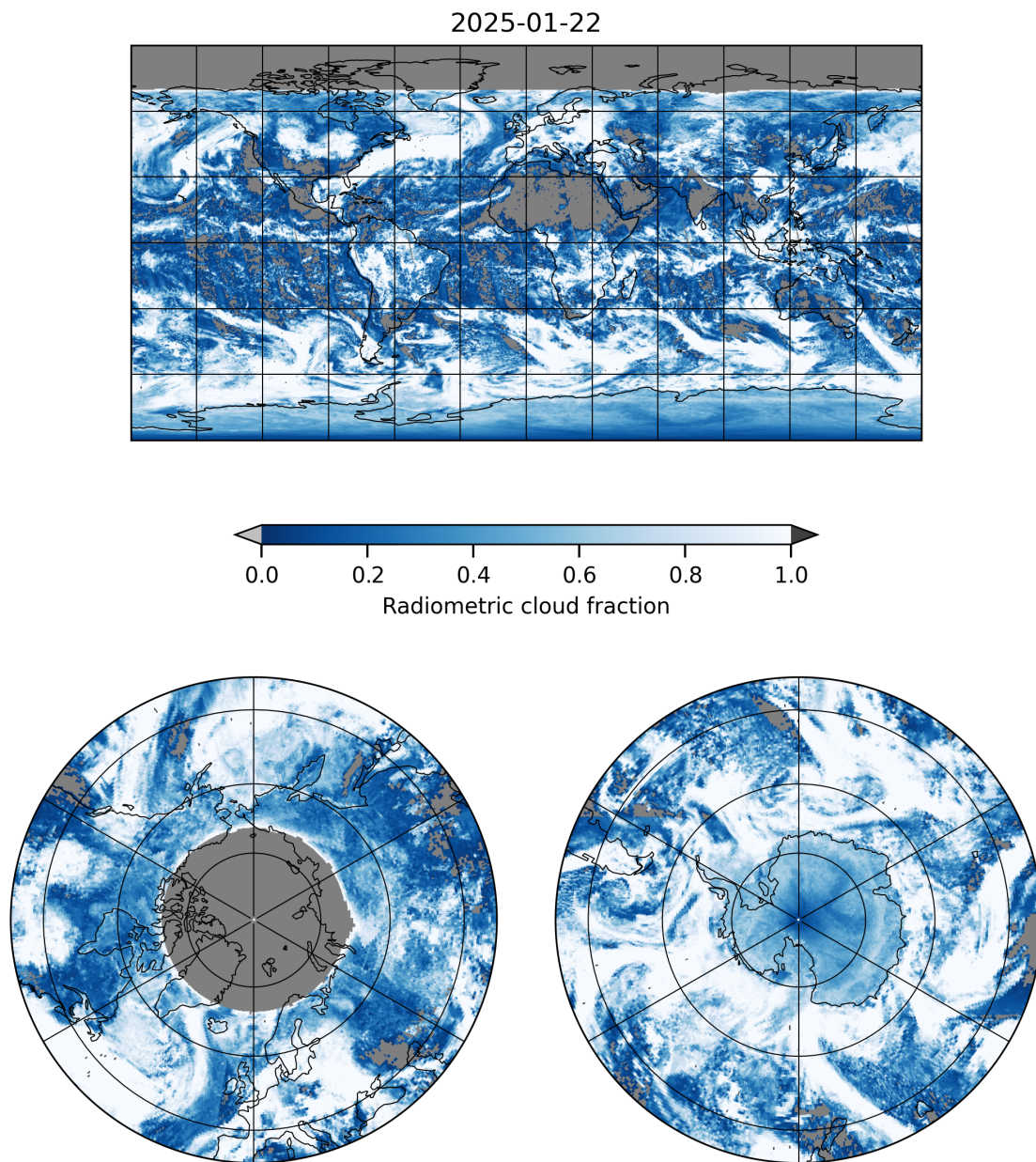


Figure 4: Map of “Radiometric cloud fraction” for 2025-01-22 to 2025-01-23

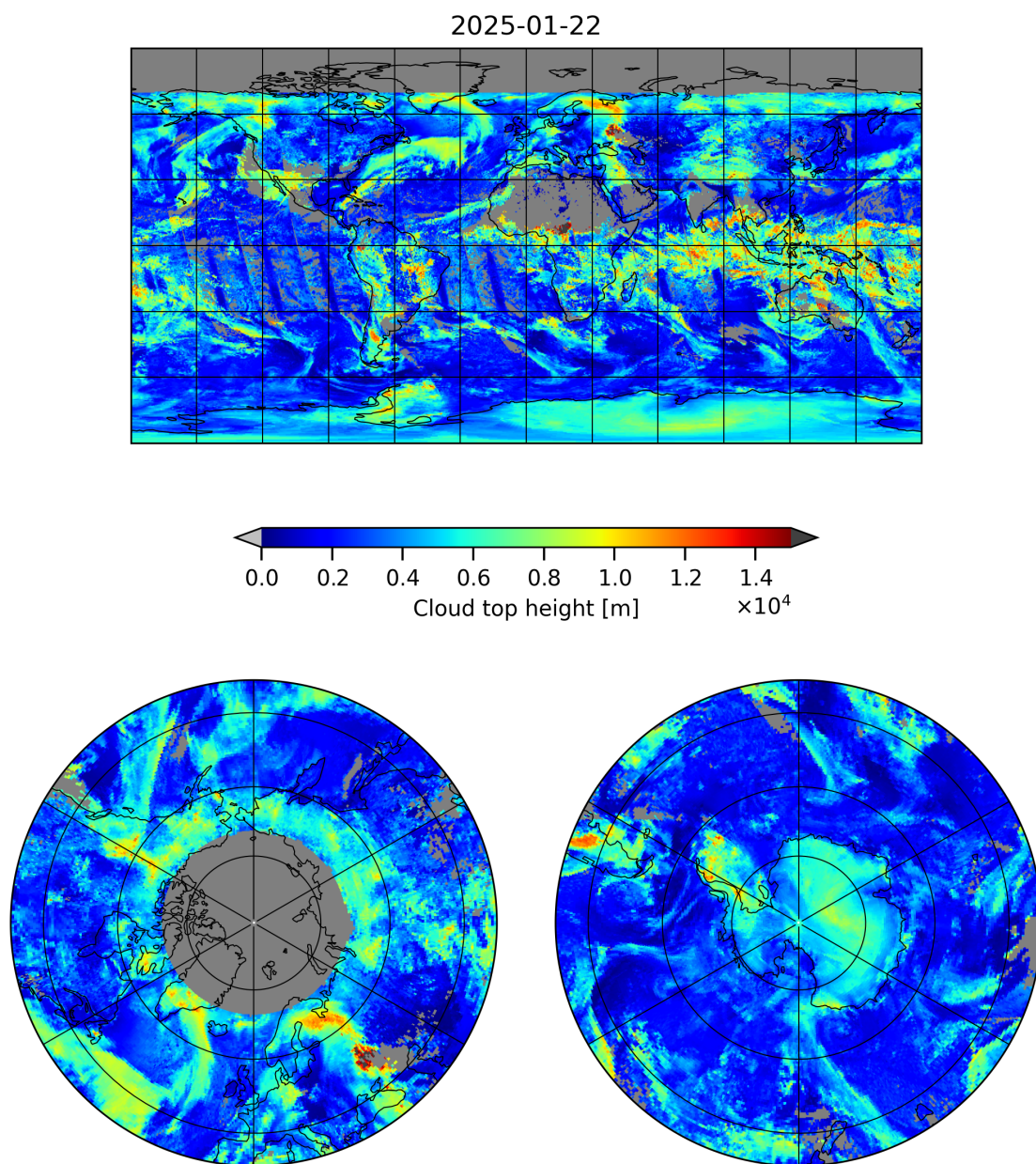


Figure 5: Map of “Cloud top height” for 2025-01-22 to 2025-01-23

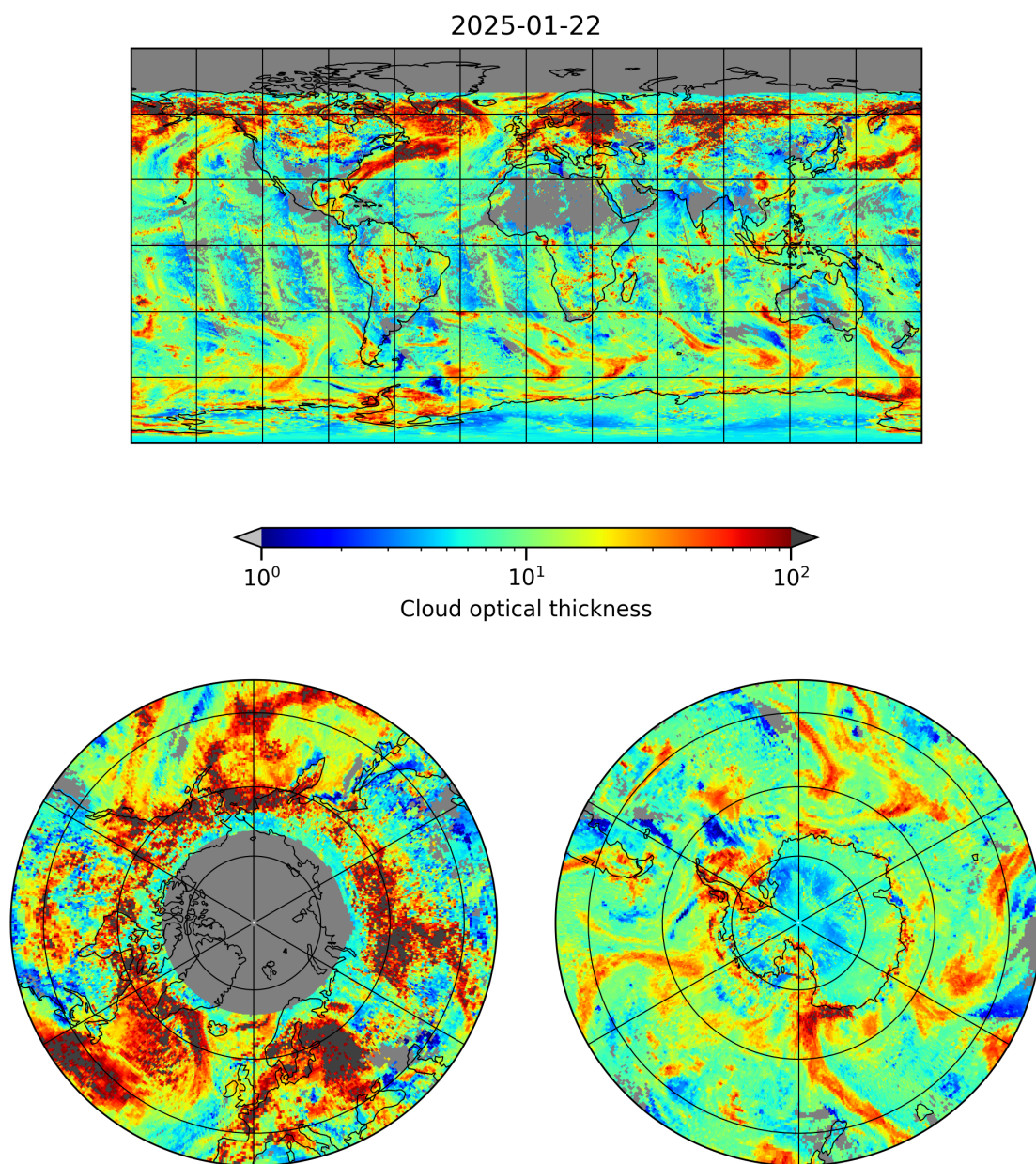


Figure 6: Map of “Cloud optical thickness” for 2025-01-22 to 2025-01-23

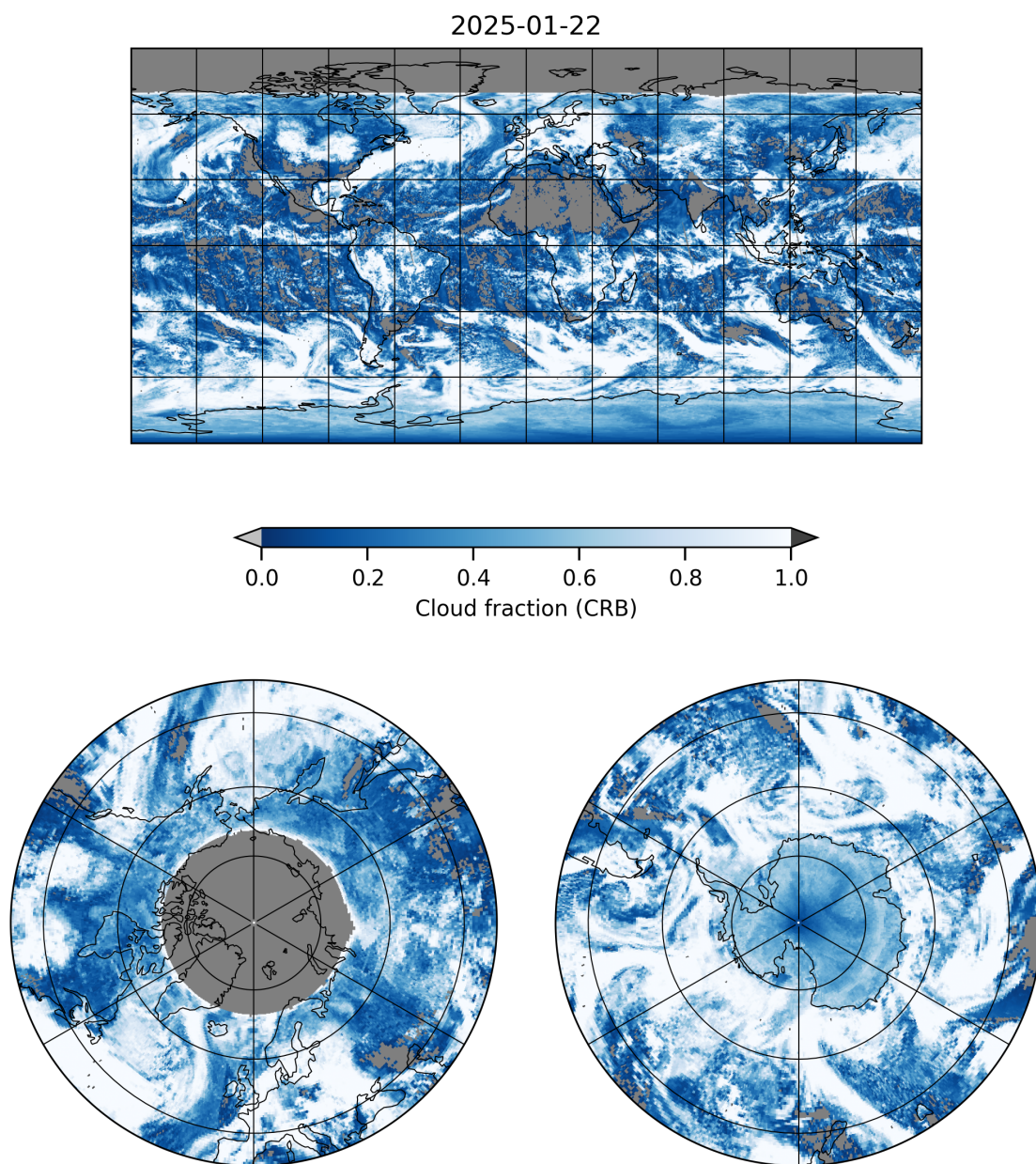


Figure 7: Map of “Cloud fraction (CRB)” for 2025-01-22 to 2025-01-23

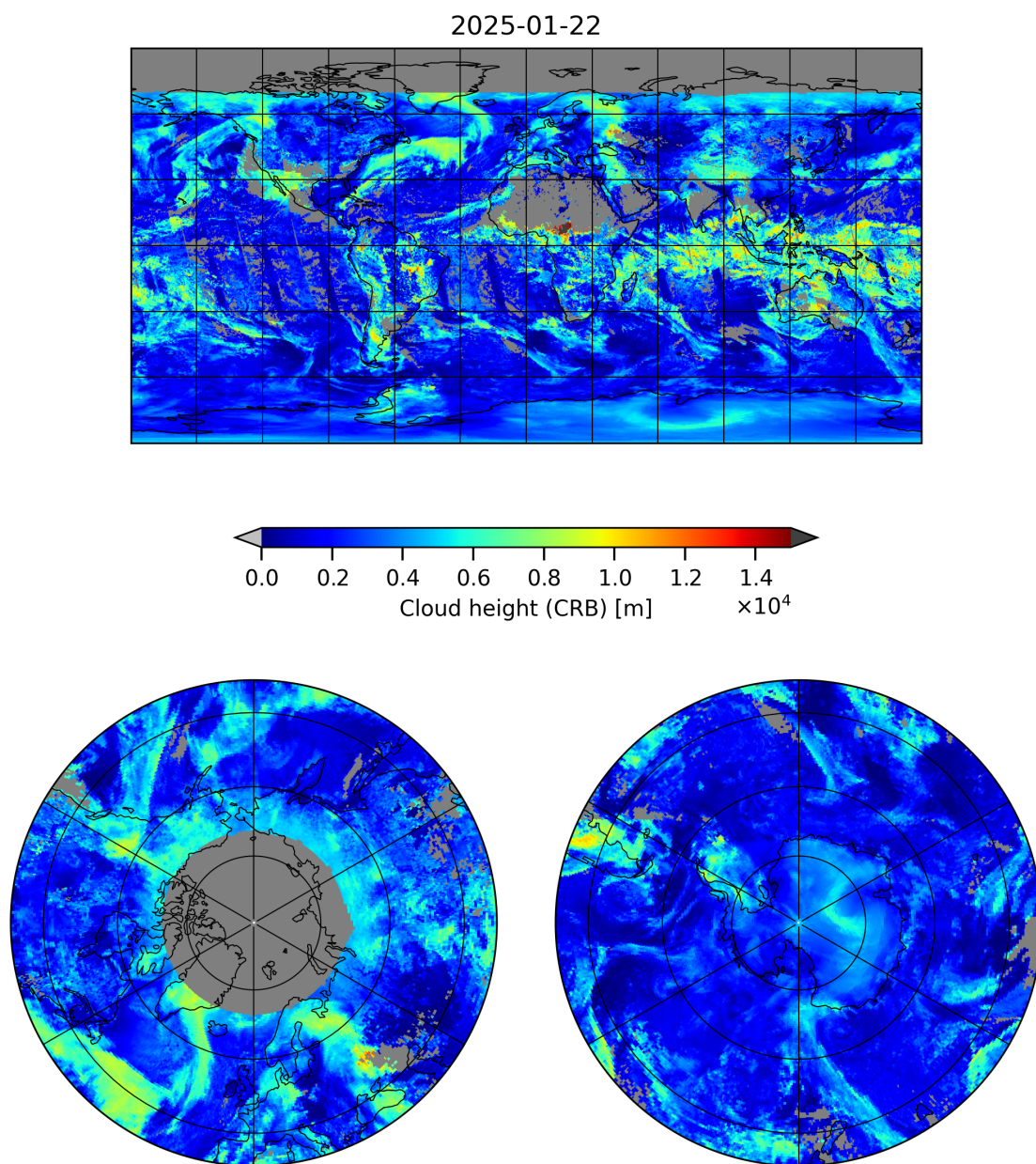


Figure 8: Map of “Cloud height (CRB)” for 2025-01-22 to 2025-01-23

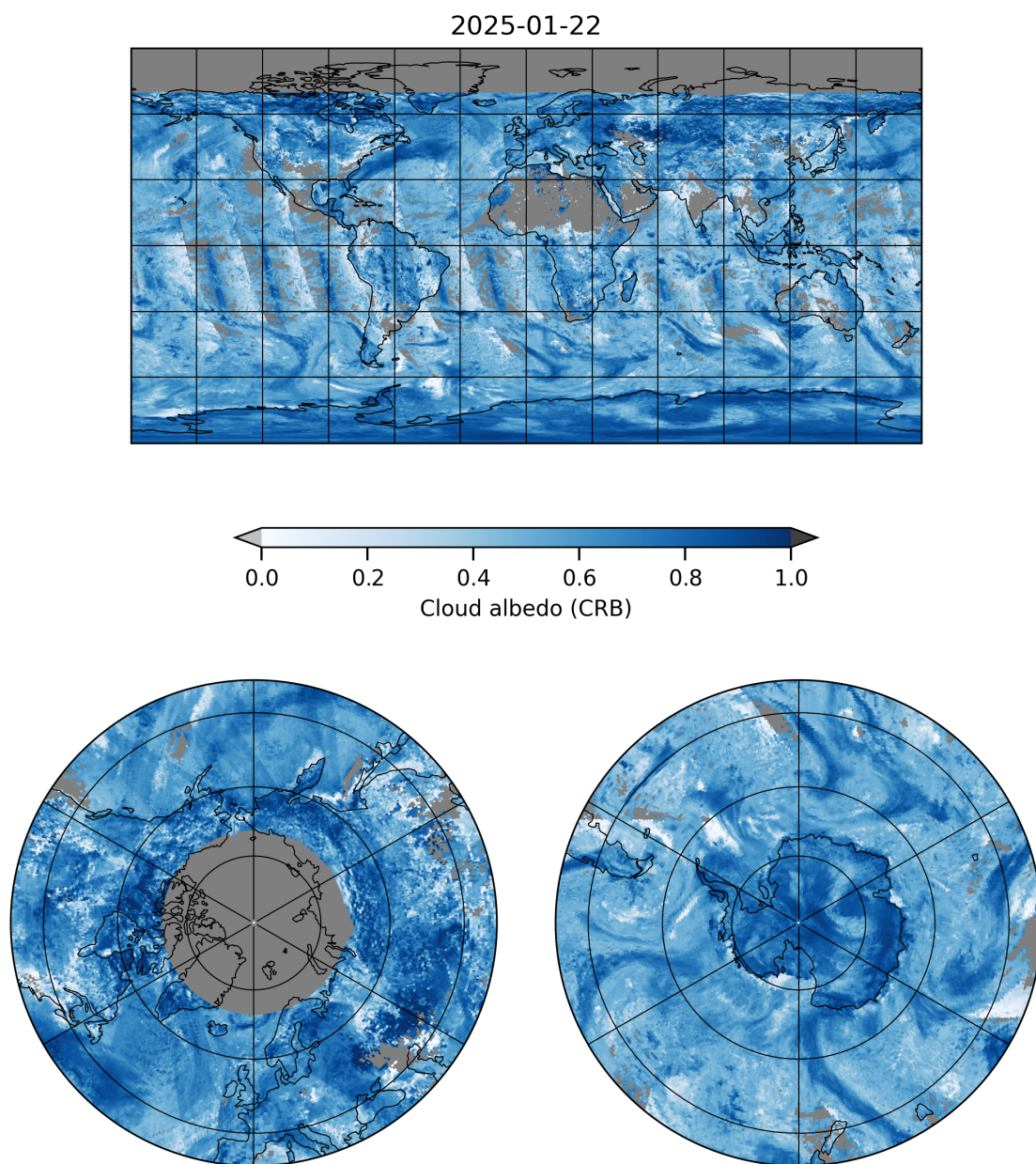


Figure 9: Map of “Cloud albedo (CRB)” for 2025-01-22 to 2025-01-23

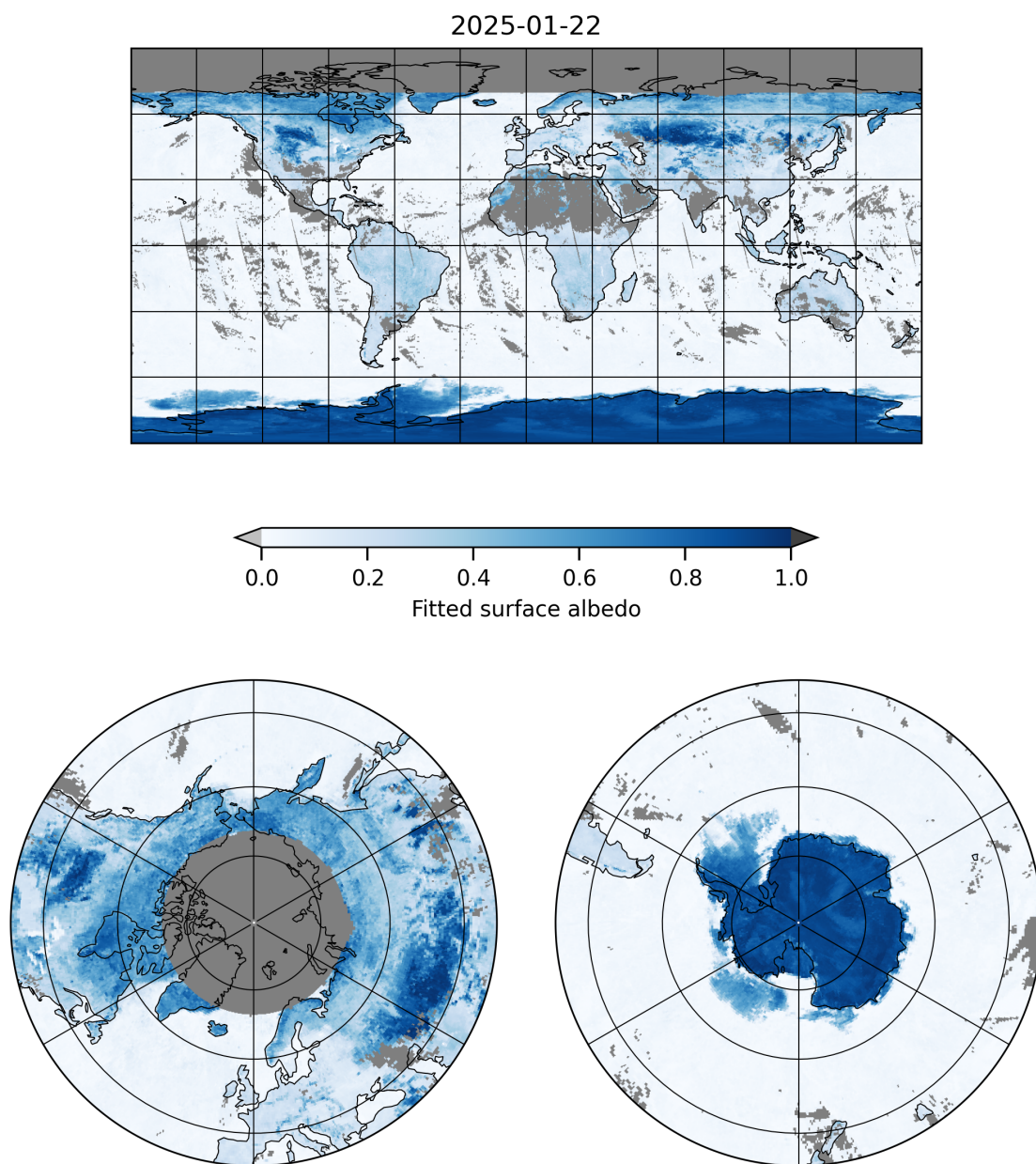


Figure 10: Map of “Fitted surface albedo” for 2025-01-22 to 2025-01-23

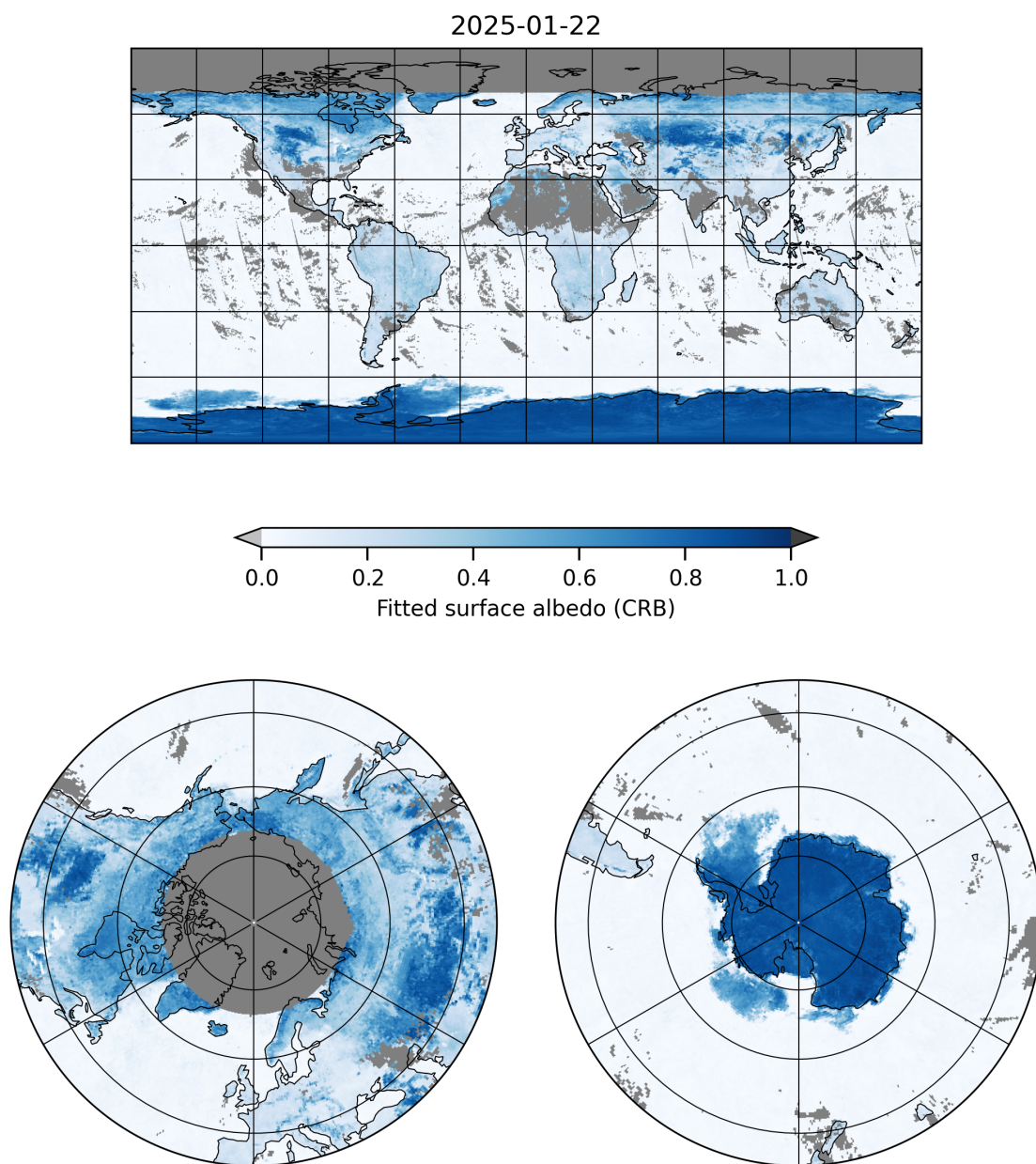


Figure 11: Map of “Fitted surface albedo (CRB)” for 2025-01-22 to 2025-01-23

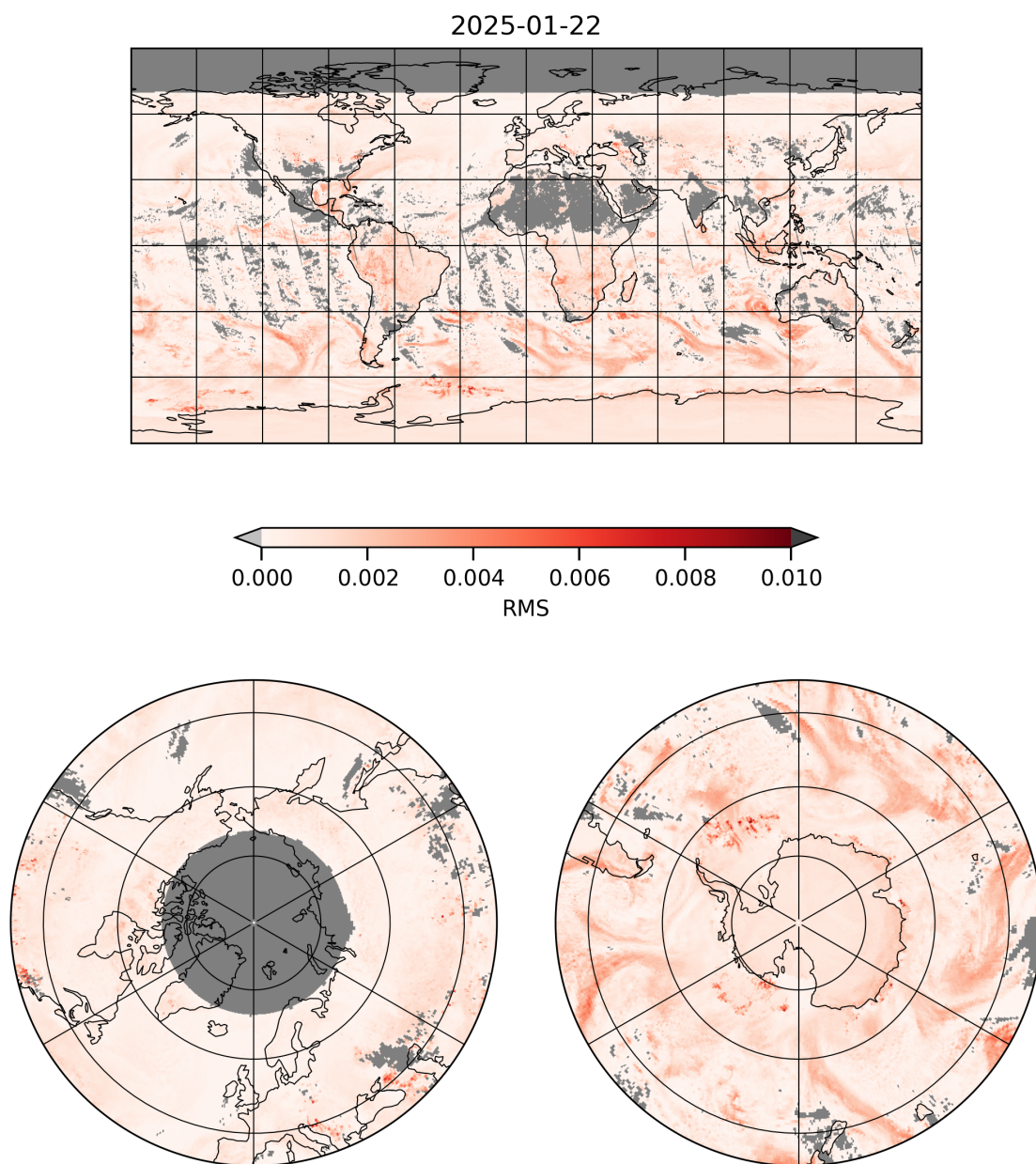


Figure 12: Map of “RMS” for 2025-01-22 to 2025-01-23

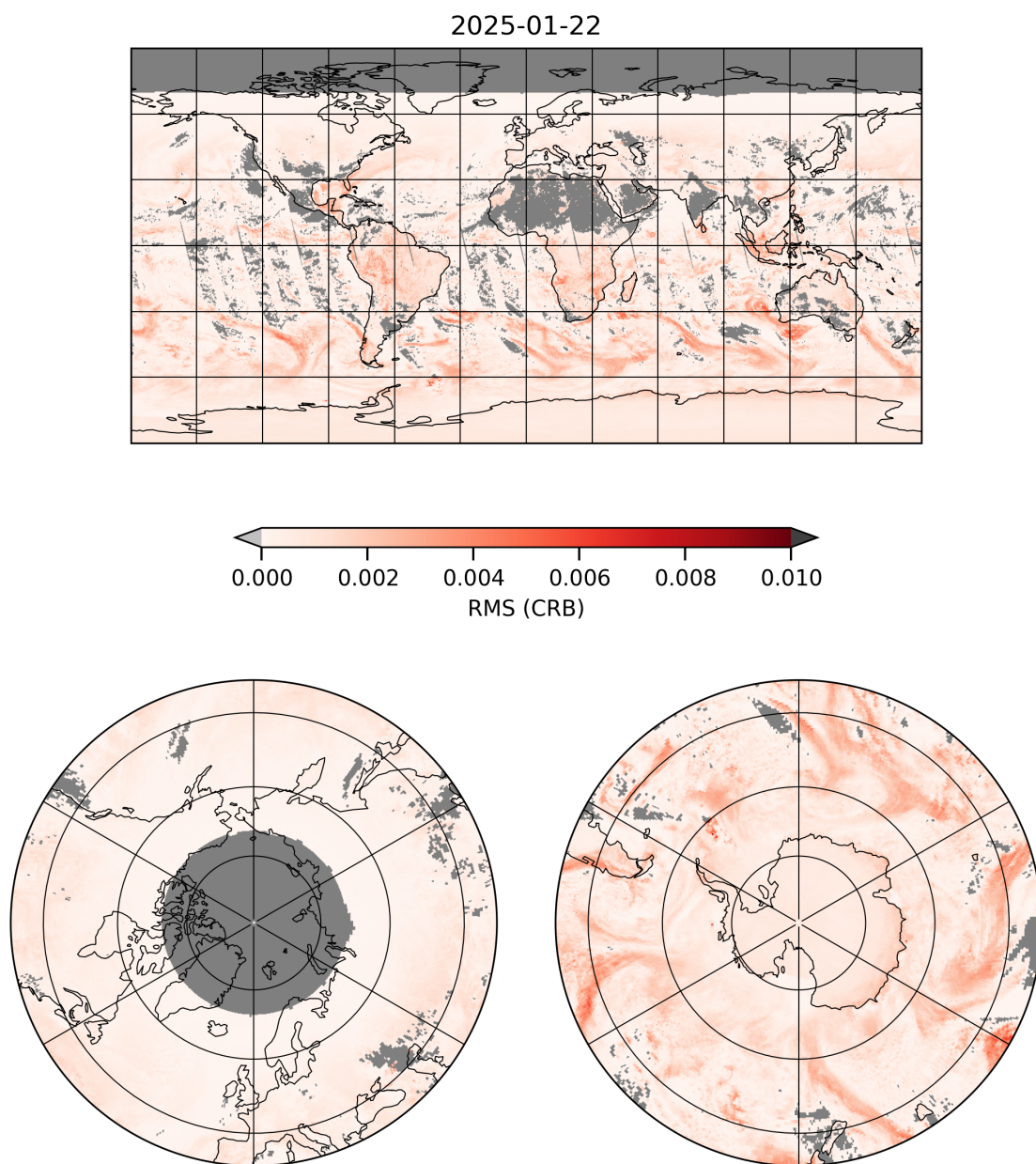


Figure 13: Map of “RMS (CRB)” for 2025-01-22 to 2025-01-23

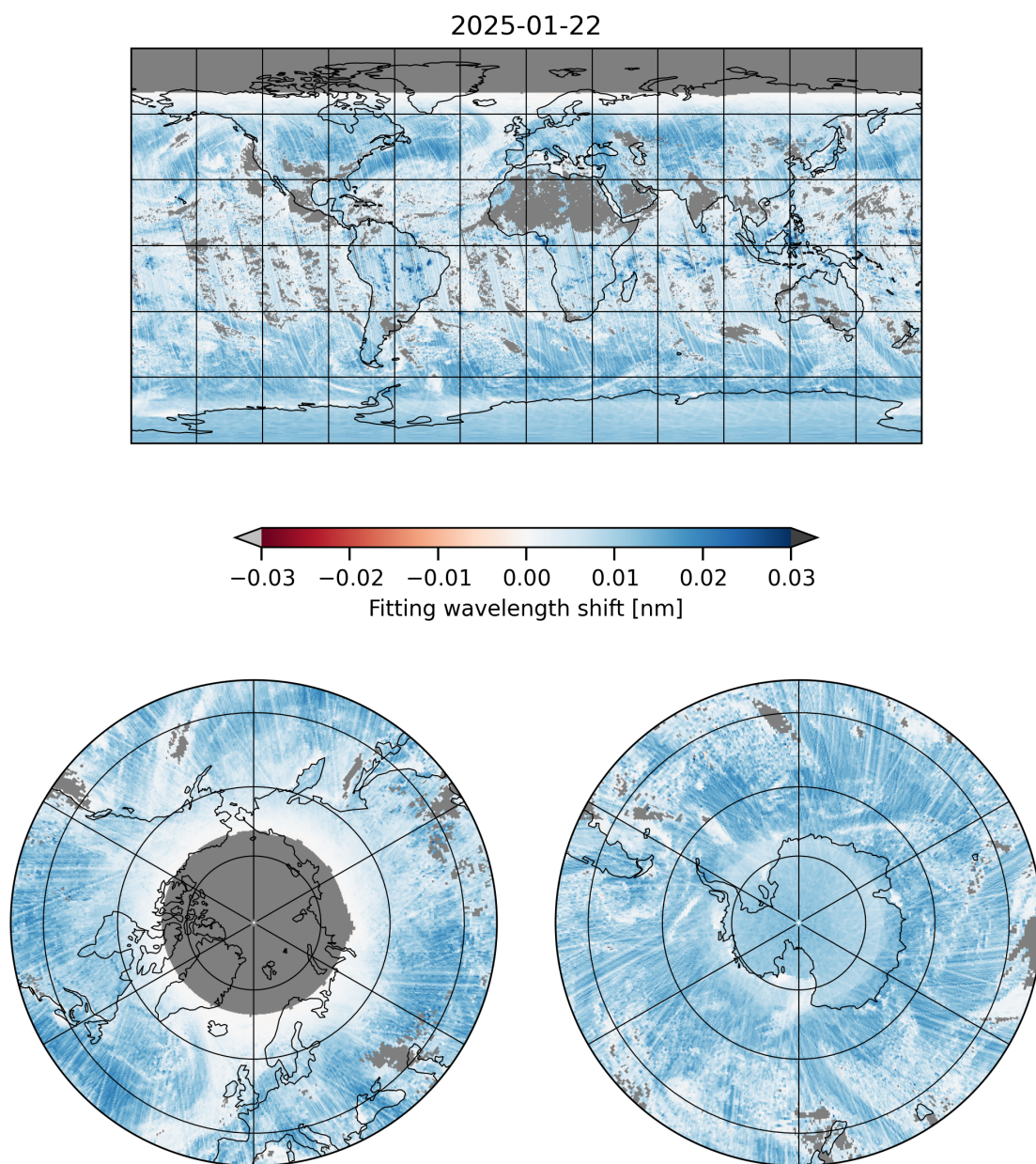


Figure 14: Map of “Fitting wavelength shift” for 2025-01-22 to 2025-01-23

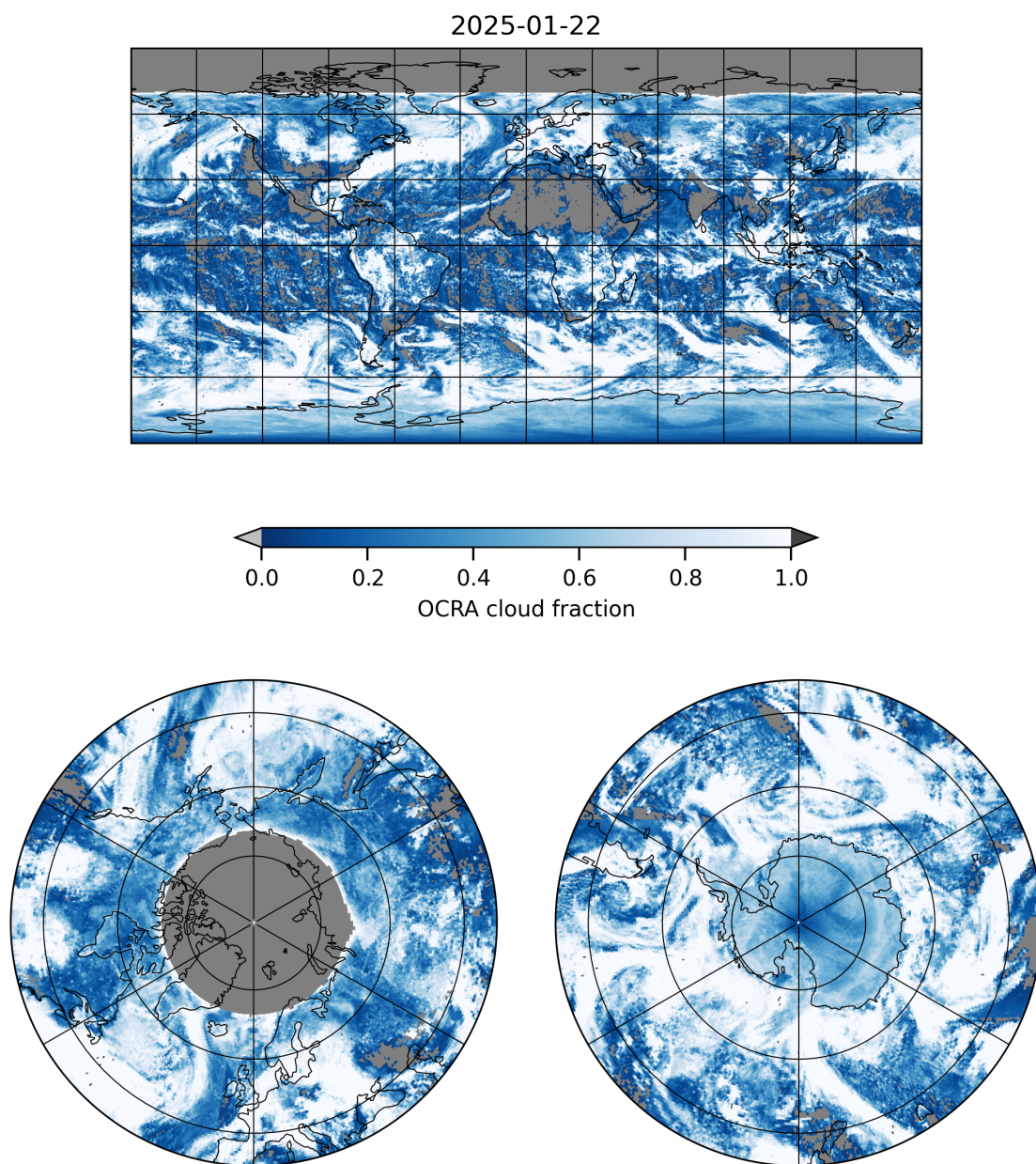


Figure 15: Map of “OCRA cloud fraction” for 2025-01-22 to 2025-01-23

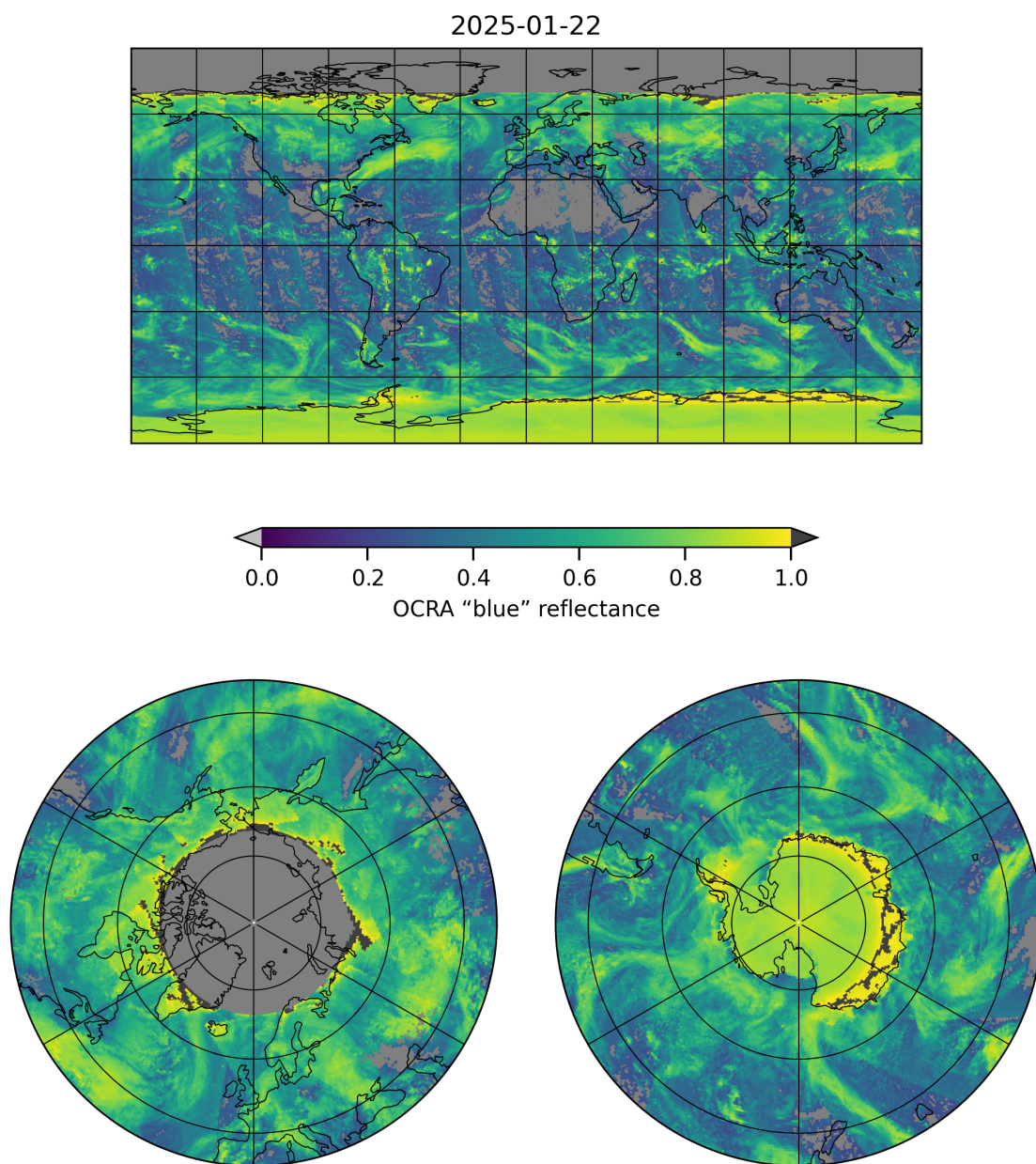


Figure 16: Map of "OCRA "blue" reflectance" for 2025-01-22 to 2025-01-23

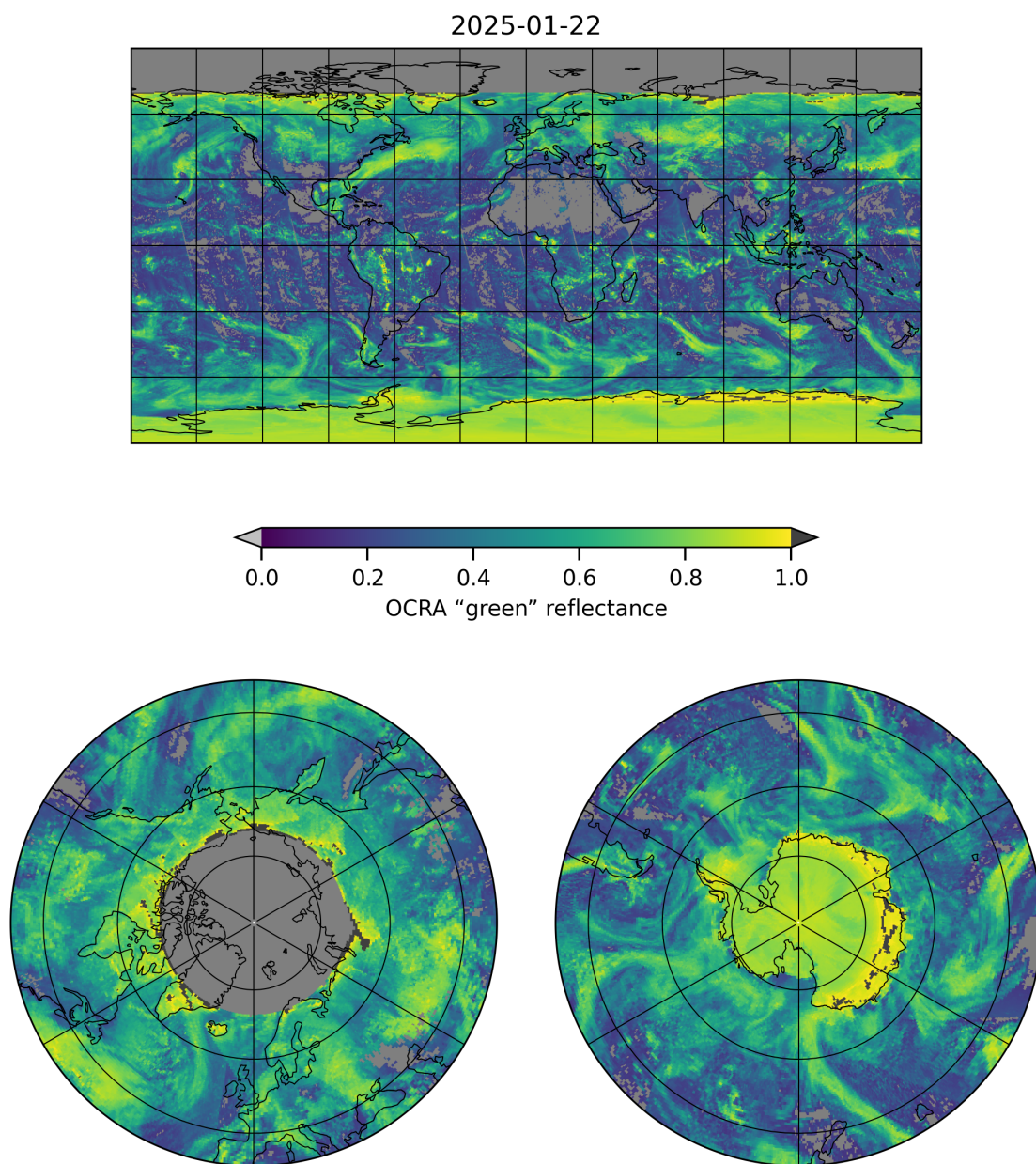


Figure 17: Map of "OCRA "green" reflectance" for 2025-01-22 to 2025-01-23

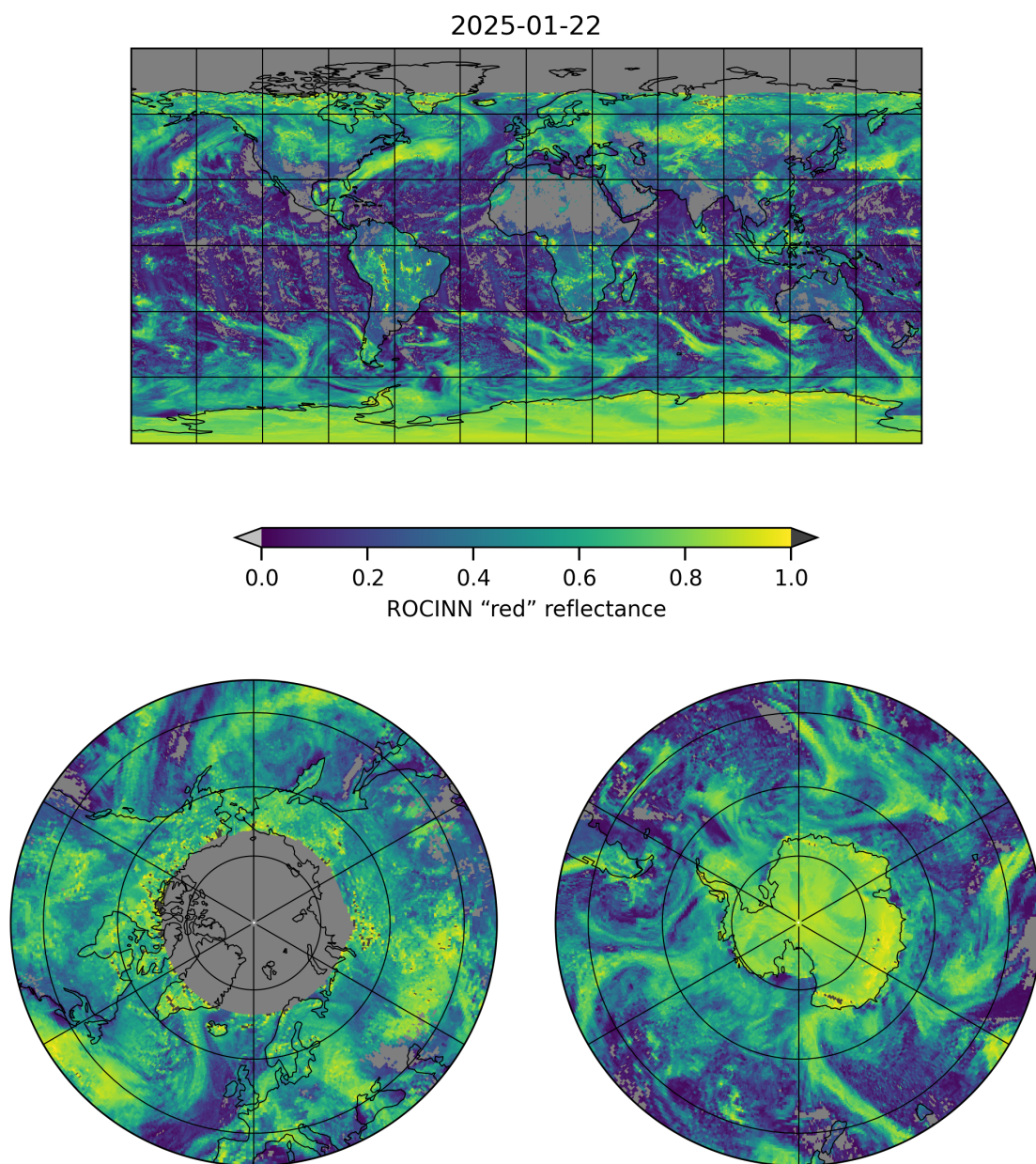


Figure 18: Map of "ROCINN "red" reflectance" for 2025-01-22 to 2025-01-23

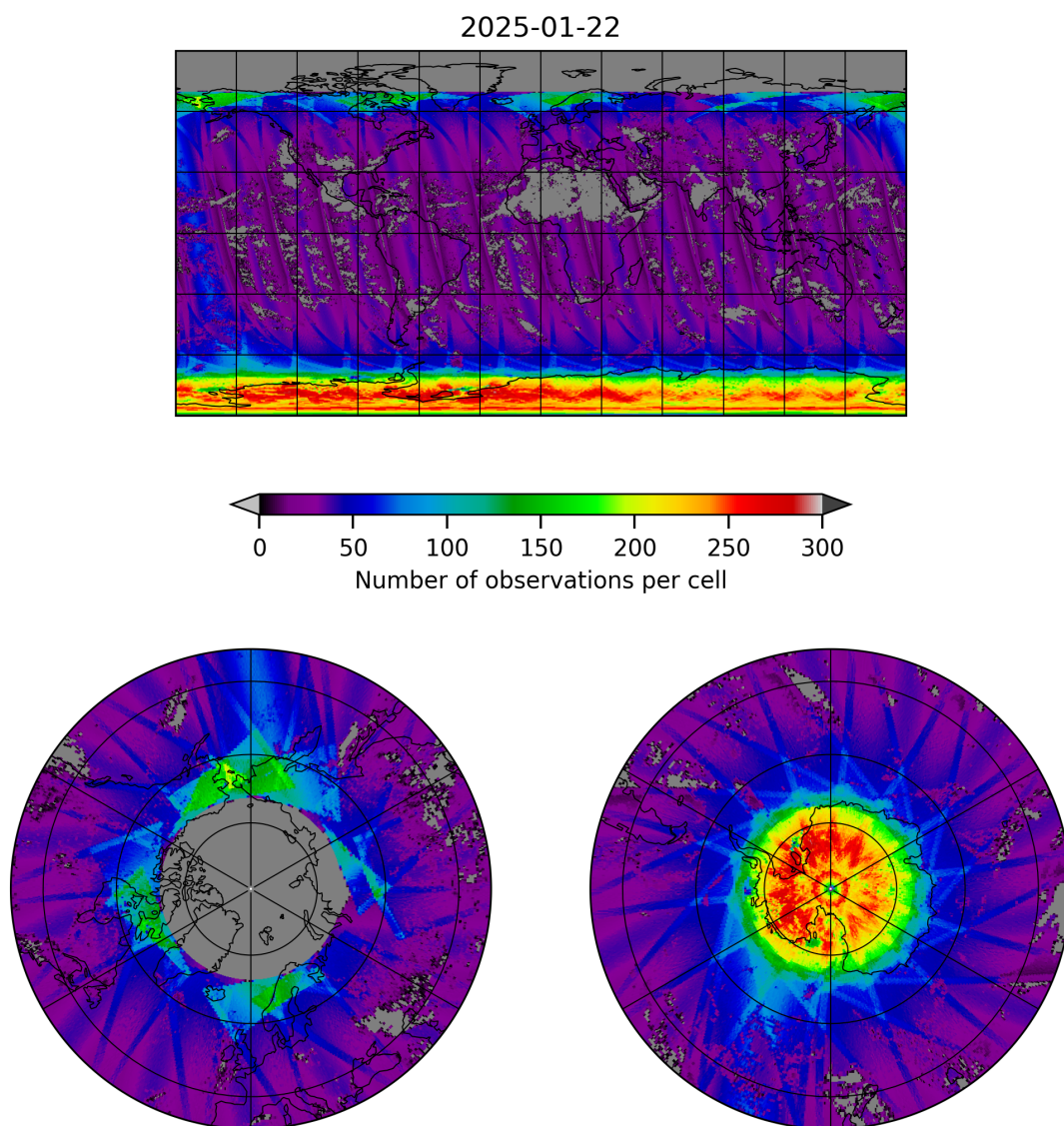


Figure 19: Map of the number of observations for 2025-01-22 to 2025-01-23

7 Zonal average

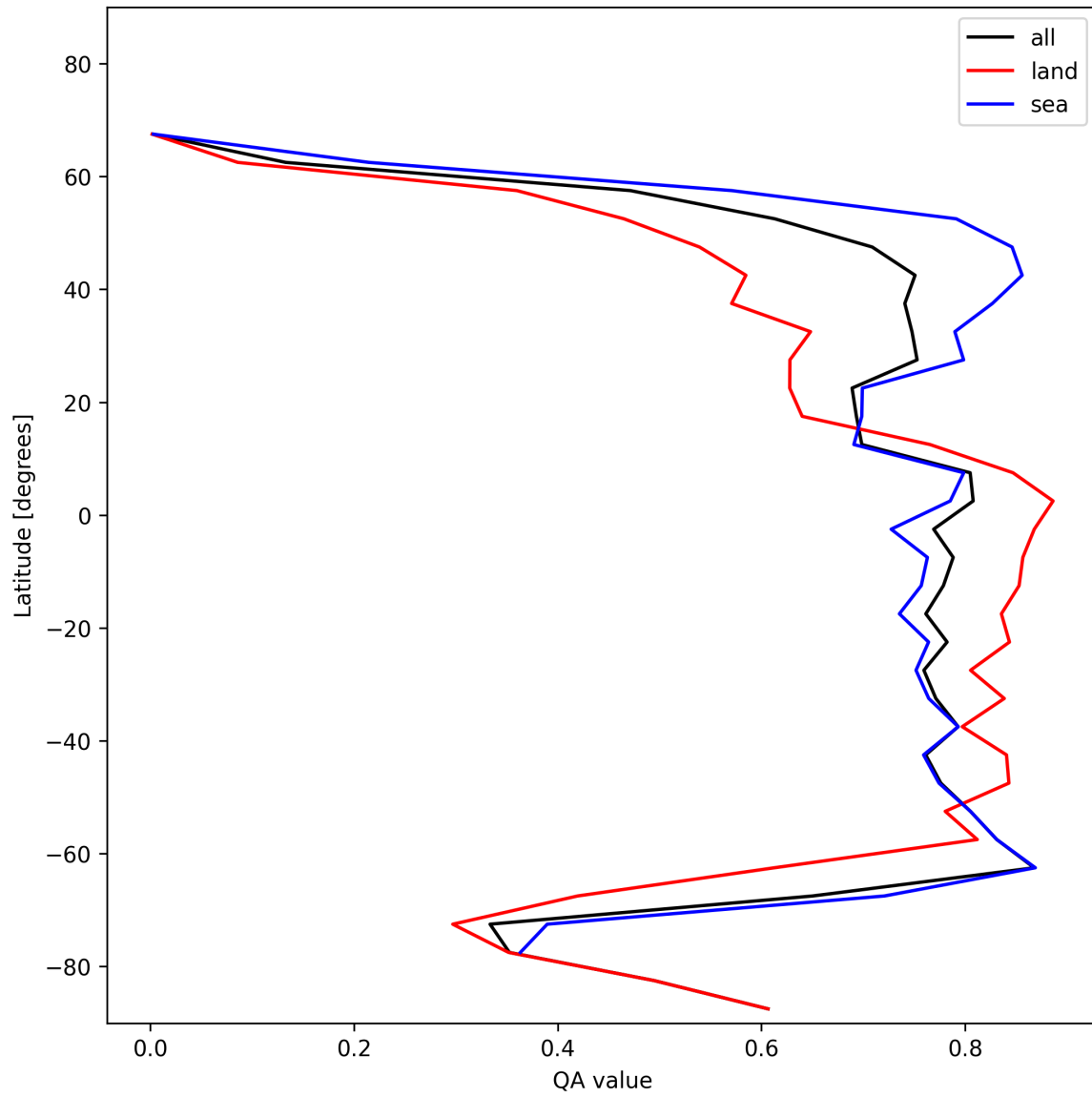


Figure 20: Zonal average of “QA value” for 2025-01-22 to 2025-01-23.

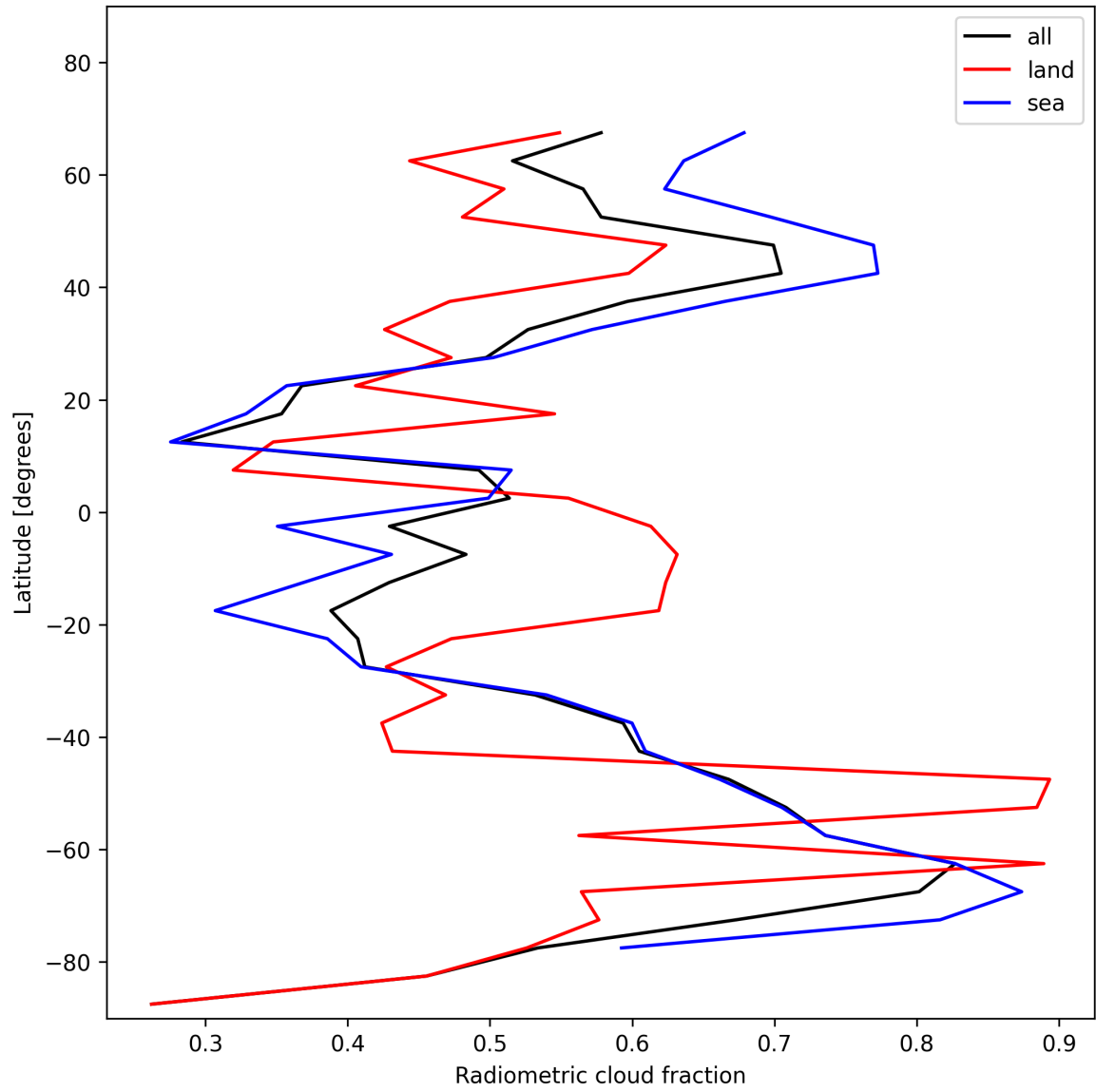


Figure 21: Zonal average of “Radiometric cloud fraction” for 2025-01-22 to 2025-01-23.

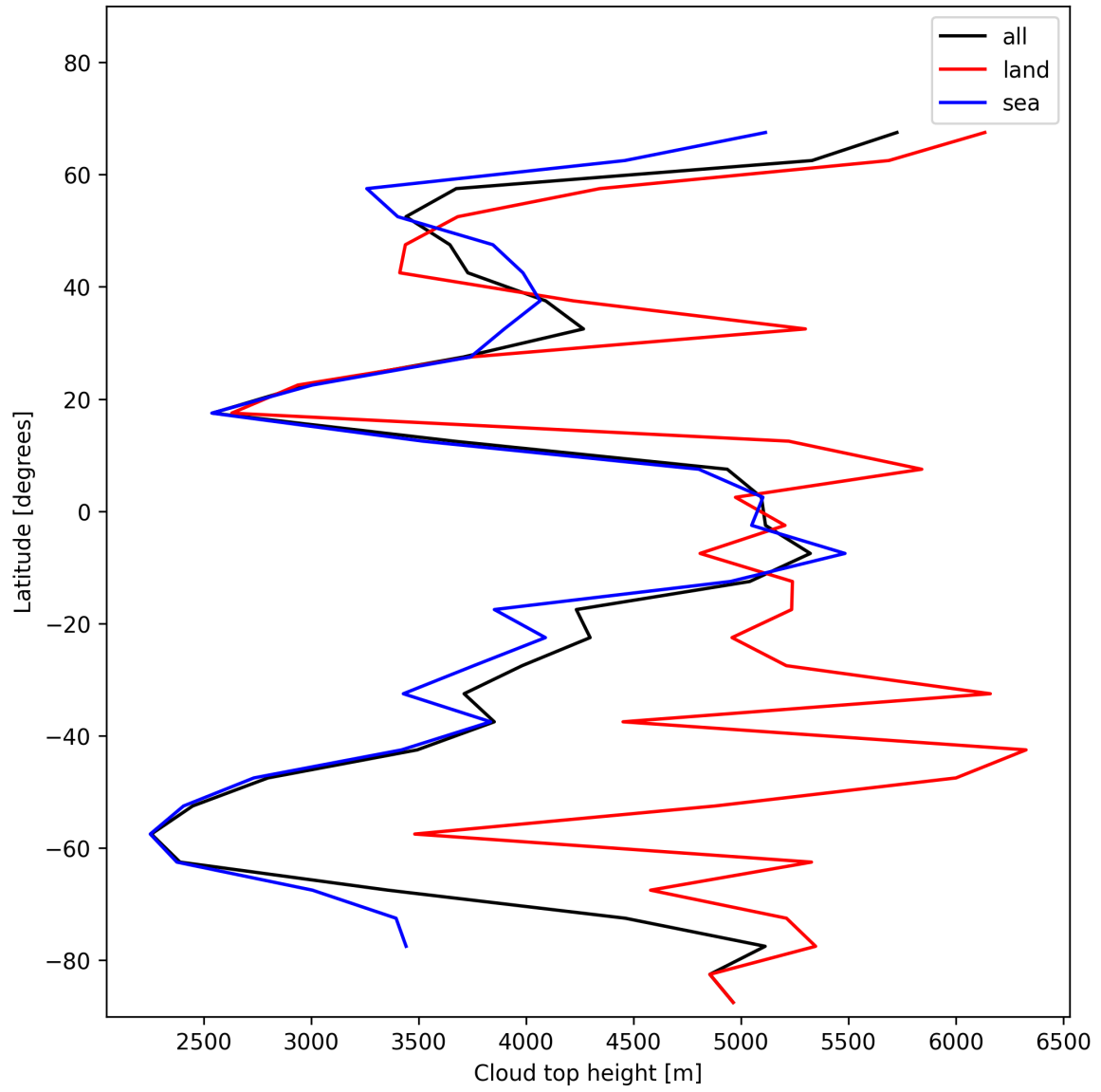


Figure 22: Zonal average of “Cloud top height” for 2025-01-22 to 2025-01-23.

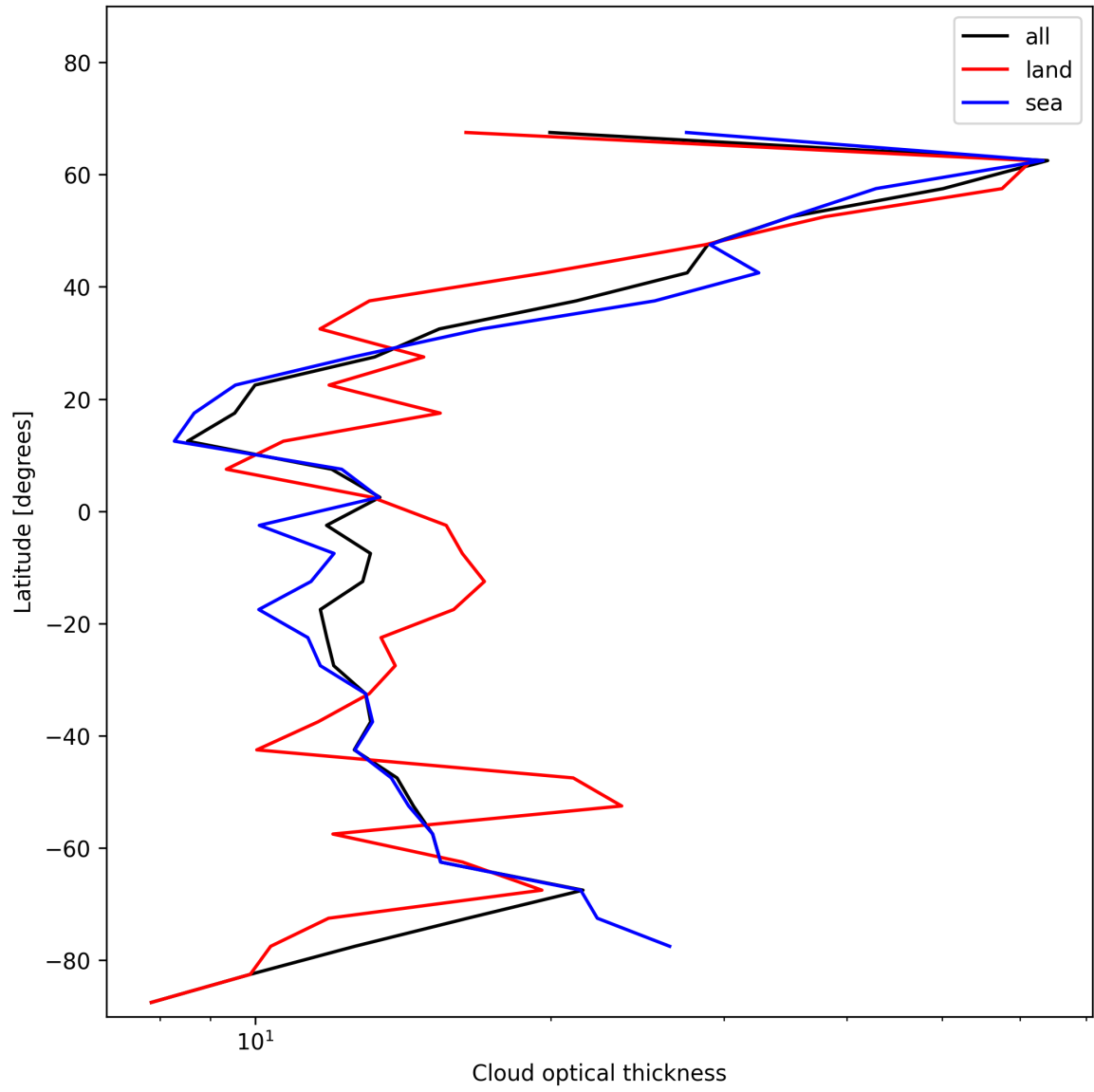


Figure 23: Zonal average of “Cloud optical thickness” for 2025-01-22 to 2025-01-23.

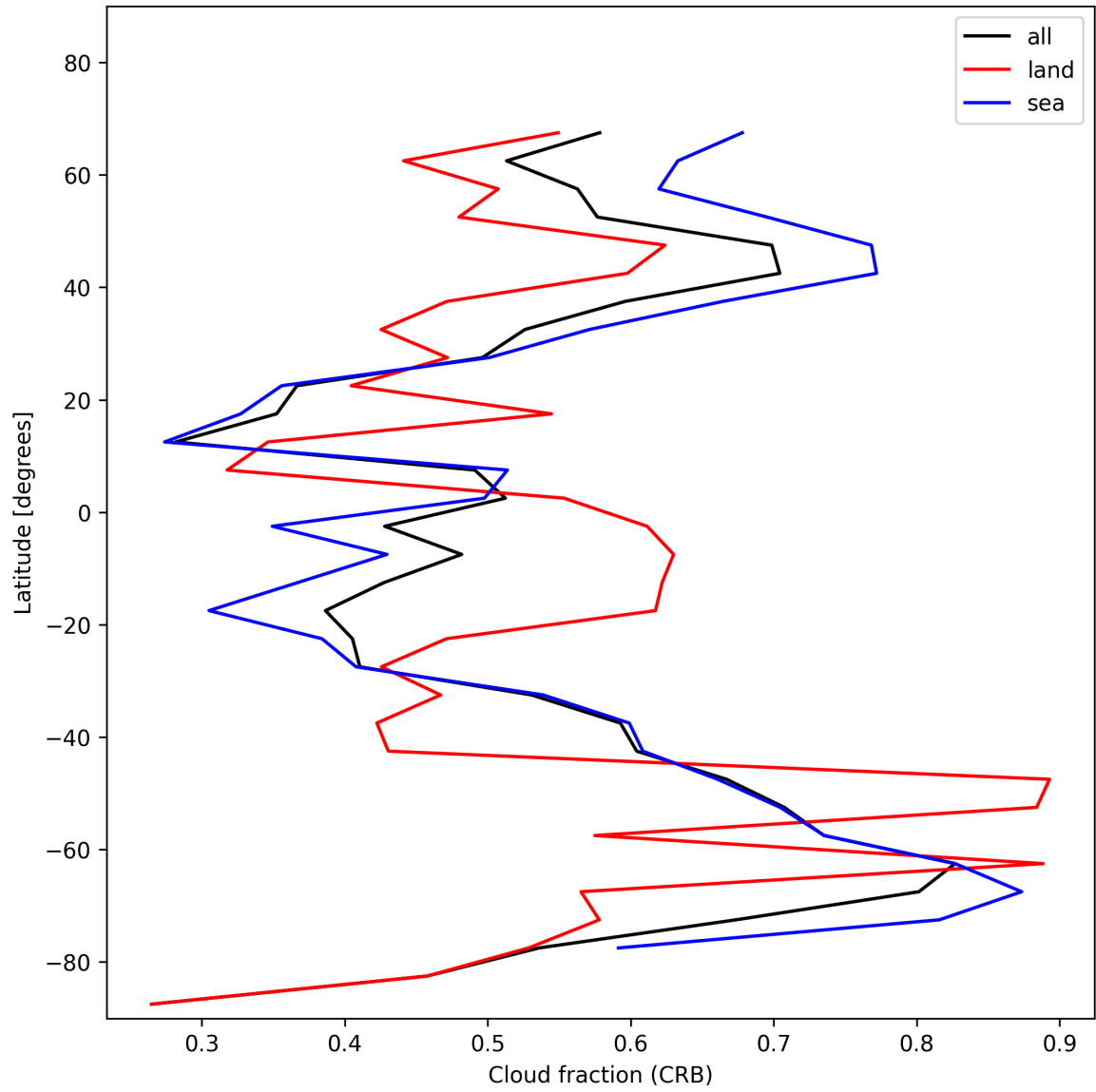


Figure 24: Zonal average of “Cloud fraction (CRB)” for 2025-01-22 to 2025-01-23.

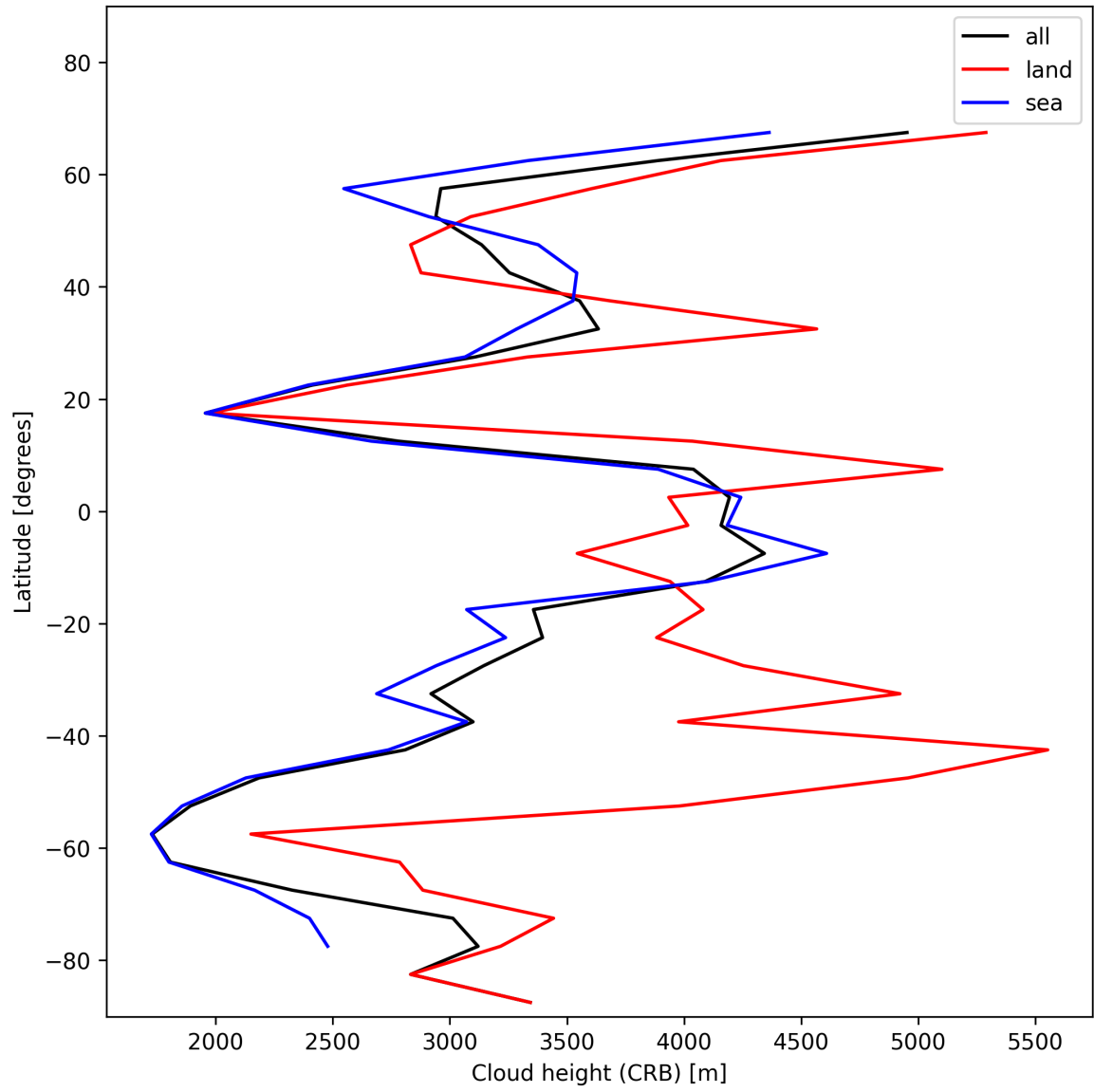


Figure 25: Zonal average of “Cloud height (CRB)” for 2025-01-22 to 2025-01-23.

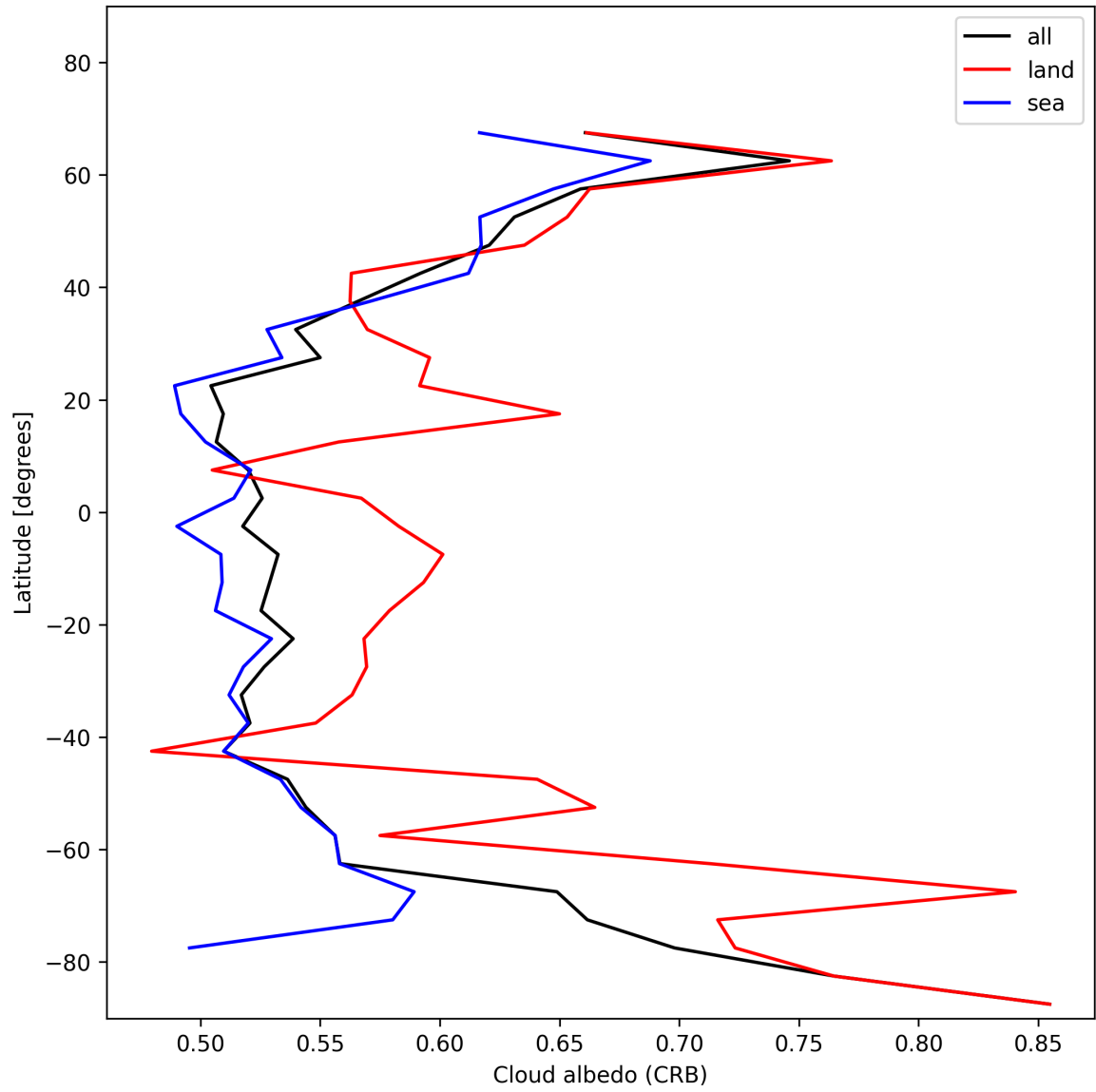


Figure 26: Zonal average of “Cloud albedo (CRB)” for 2025-01-22 to 2025-01-23.

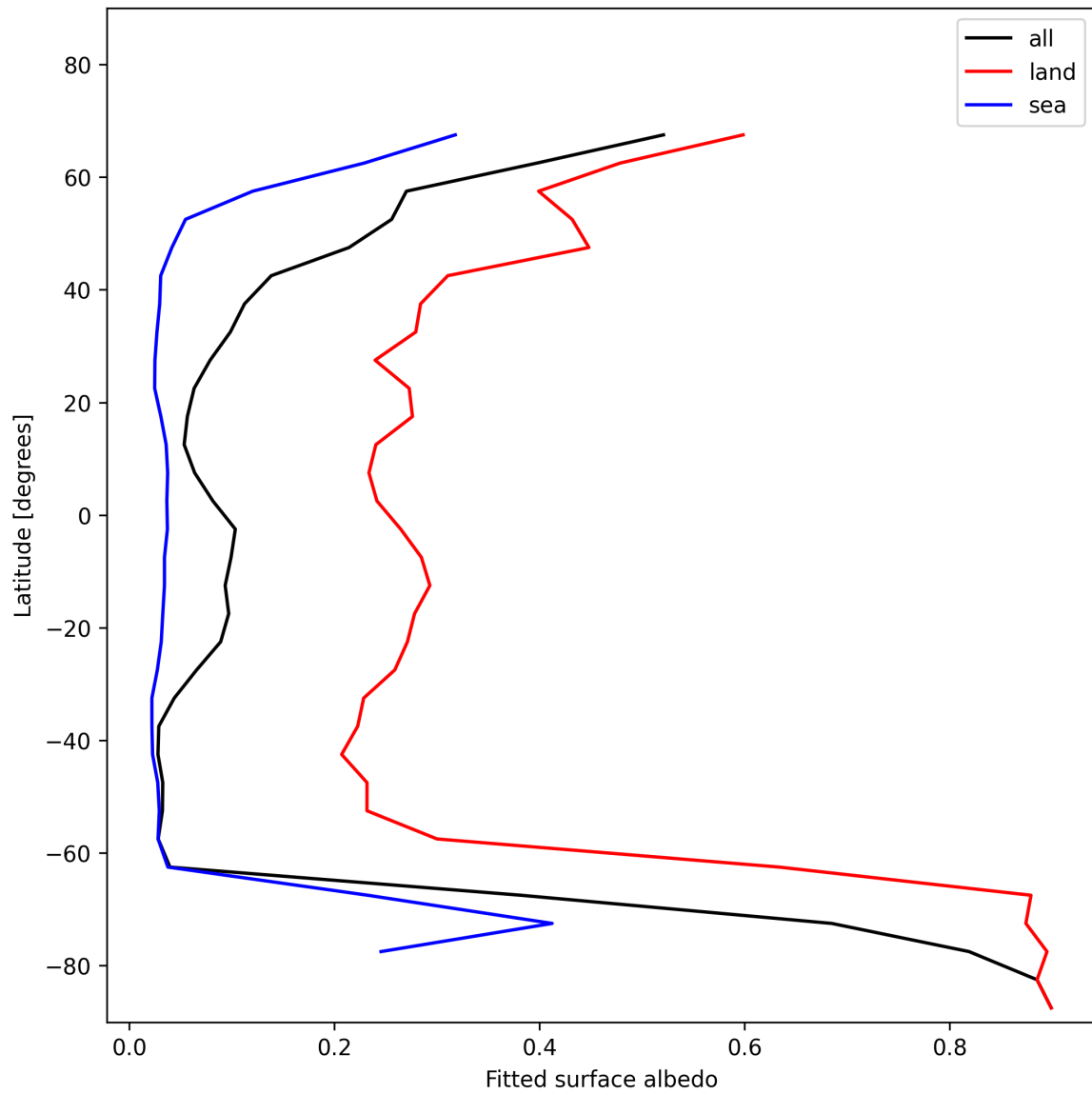


Figure 27: Zonal average of “Fitted surface albedo” for 2025-01-22 to 2025-01-23.

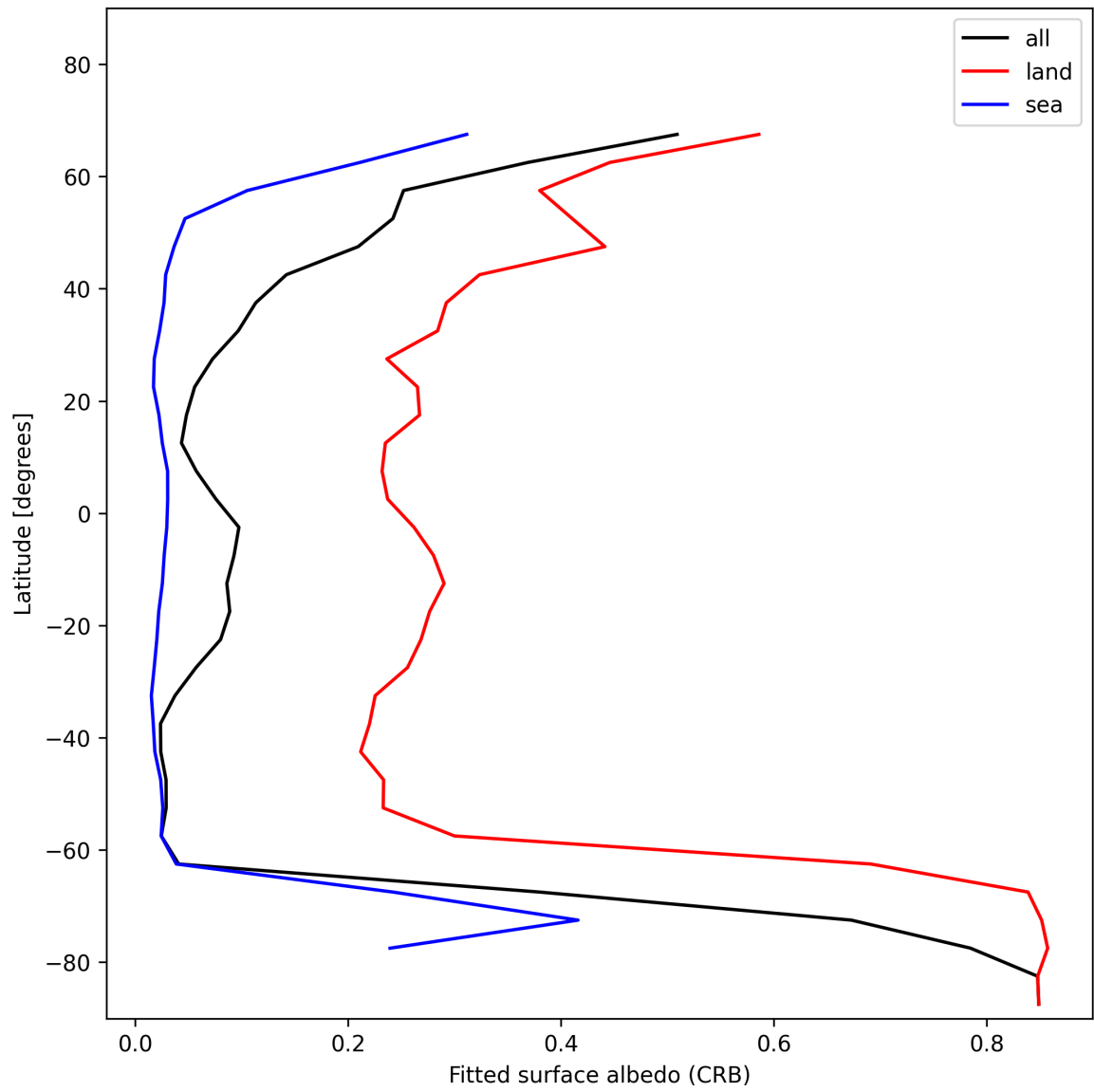


Figure 28: Zonal average of “Fitted surface albedo (CRB)” for 2025-01-22 to 2025-01-23.

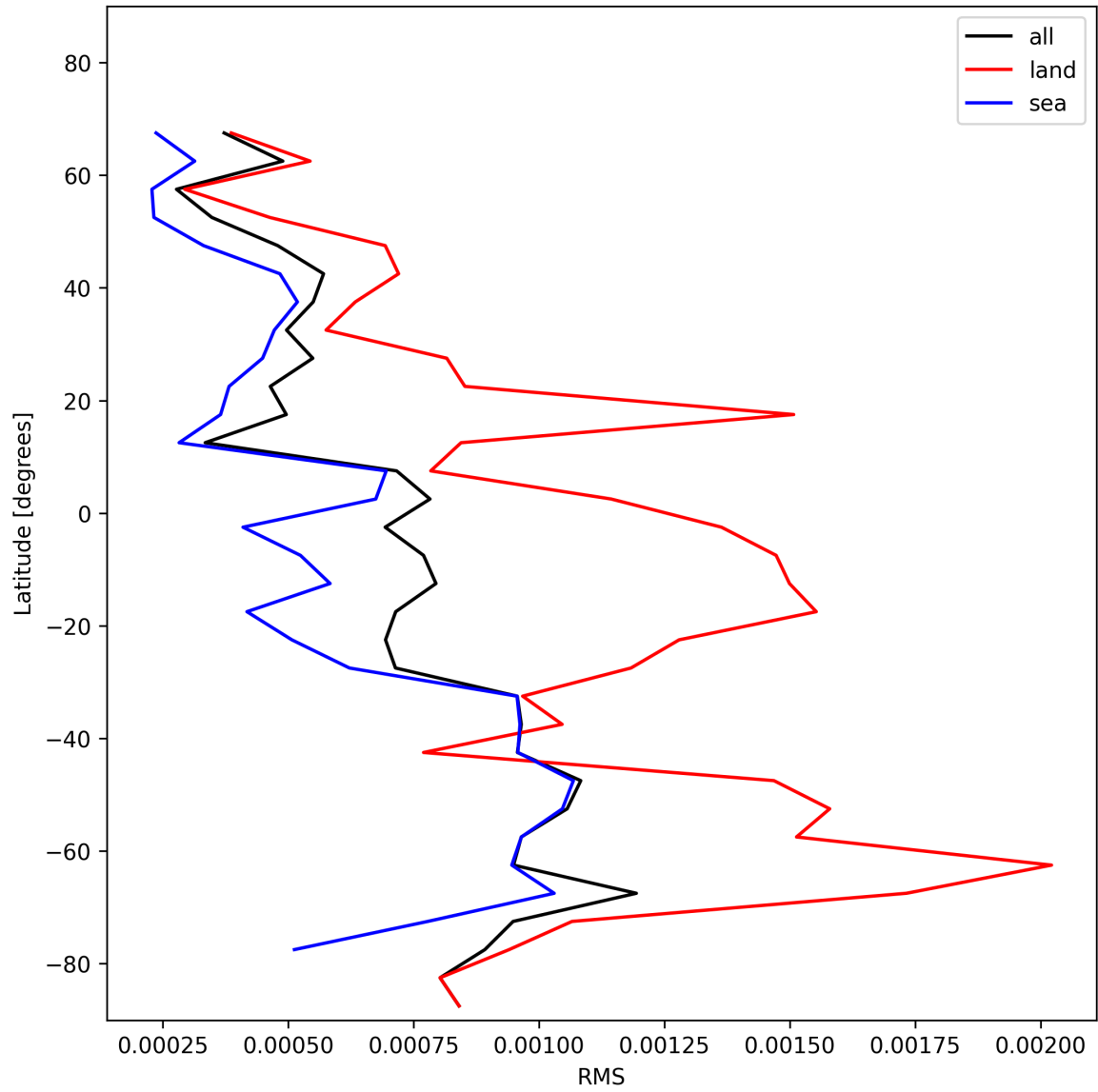


Figure 29: Zonal average of “RMS” for 2025-01-22 to 2025-01-23.

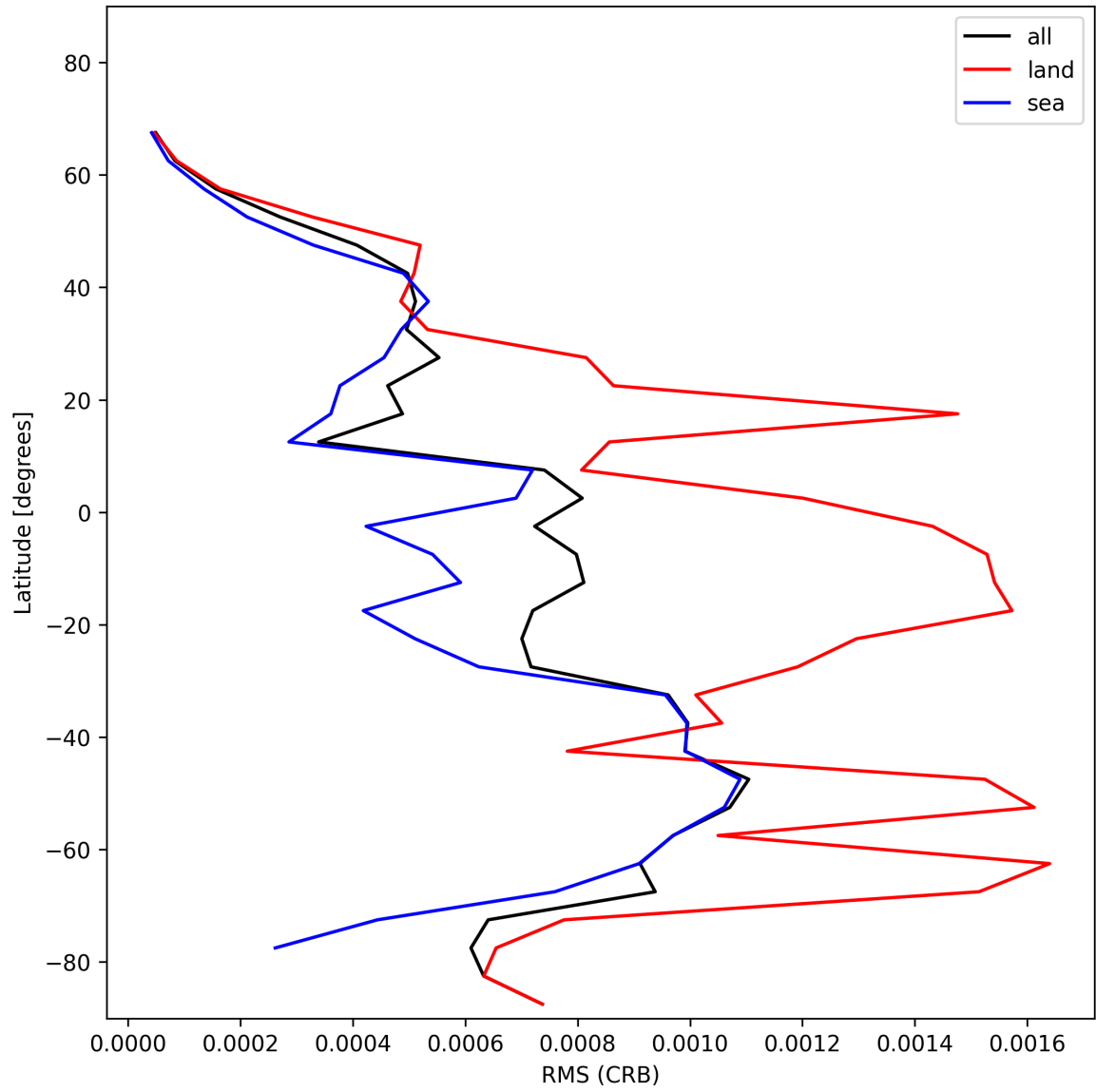


Figure 30: Zonal average of “RMS (CRB)” for 2025-01-22 to 2025-01-23.

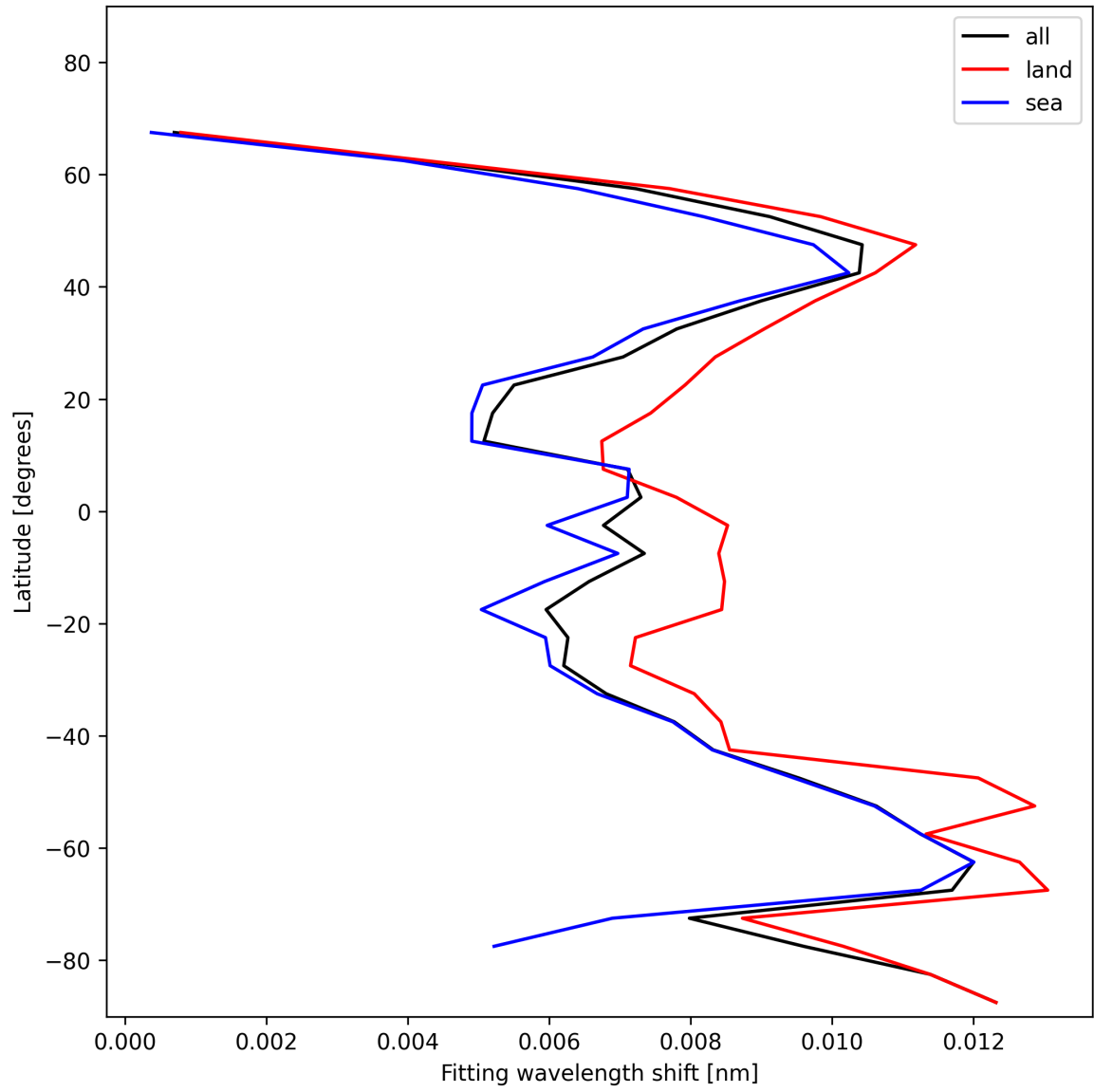


Figure 31: Zonal average of “Fitting wavelength shift” for 2025-01-22 to 2025-01-23.

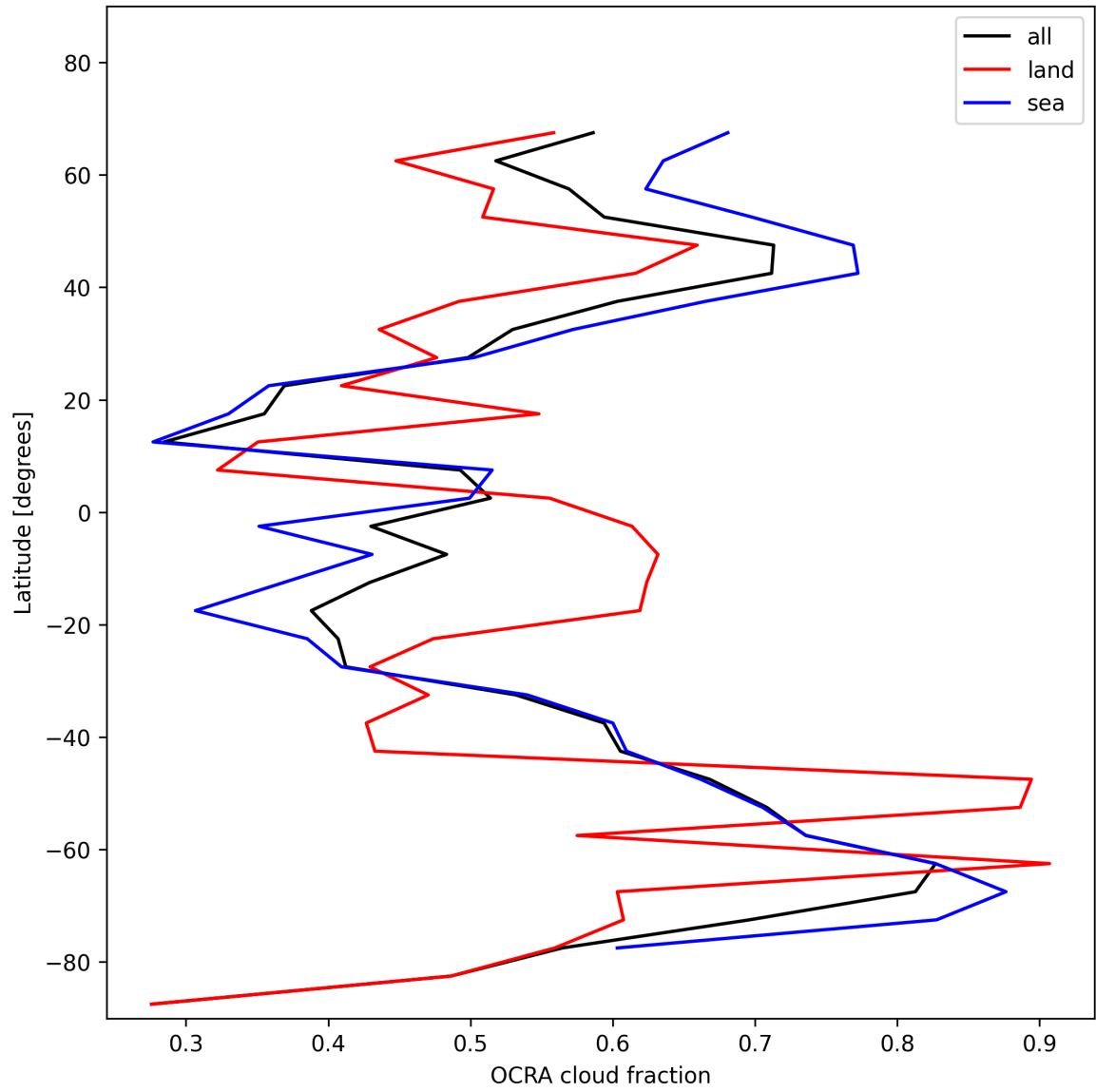


Figure 32: Zonal average of “OCRA cloud fraction” for 2025-01-22 to 2025-01-23.

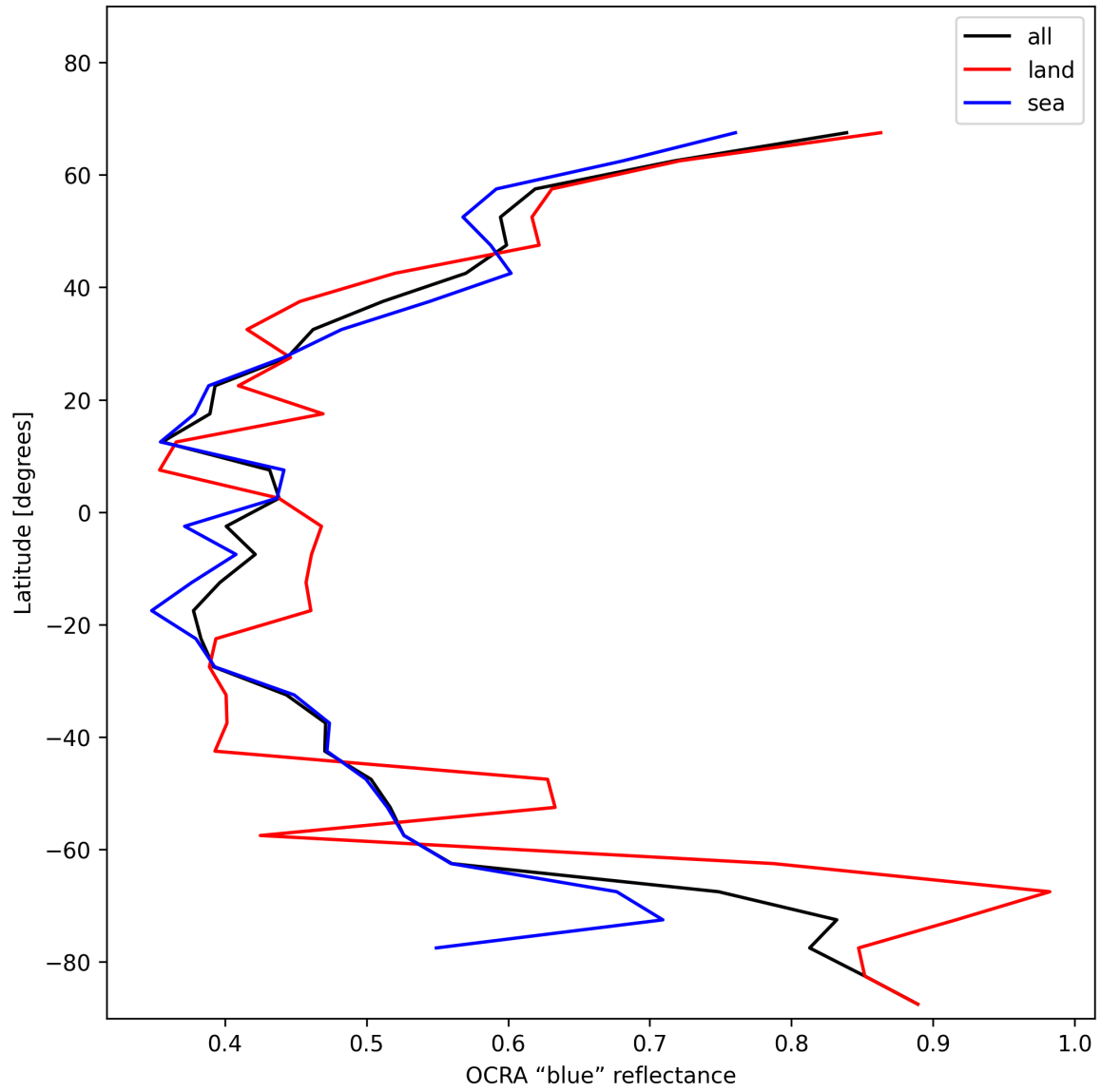


Figure 33: Zonal average of “OCRA “blue” reflectance” for 2025-01-22 to 2025-01-23.

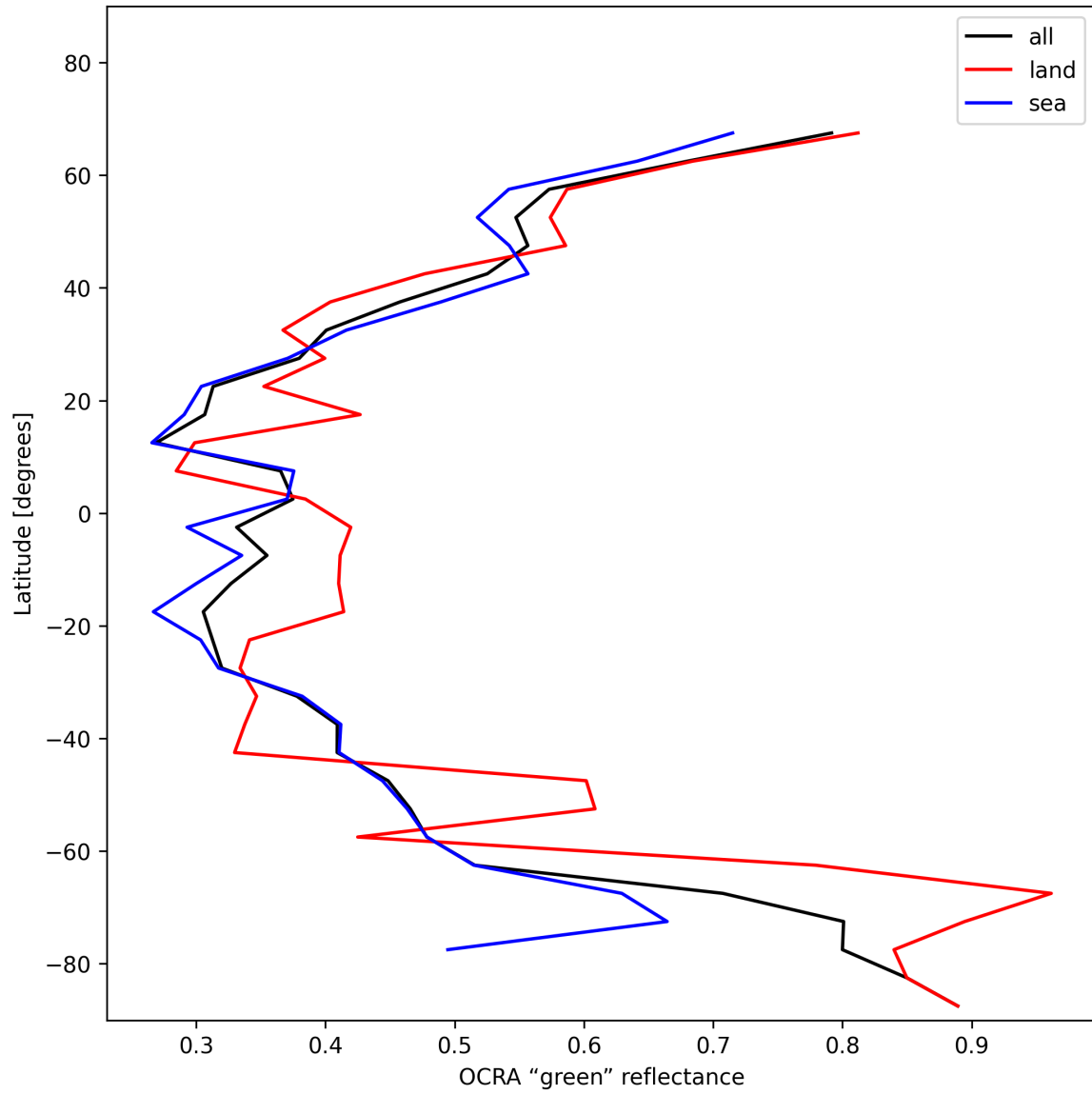


Figure 34: Zonal average of “OCRA “green” reflectance” for 2025-01-22 to 2025-01-23.

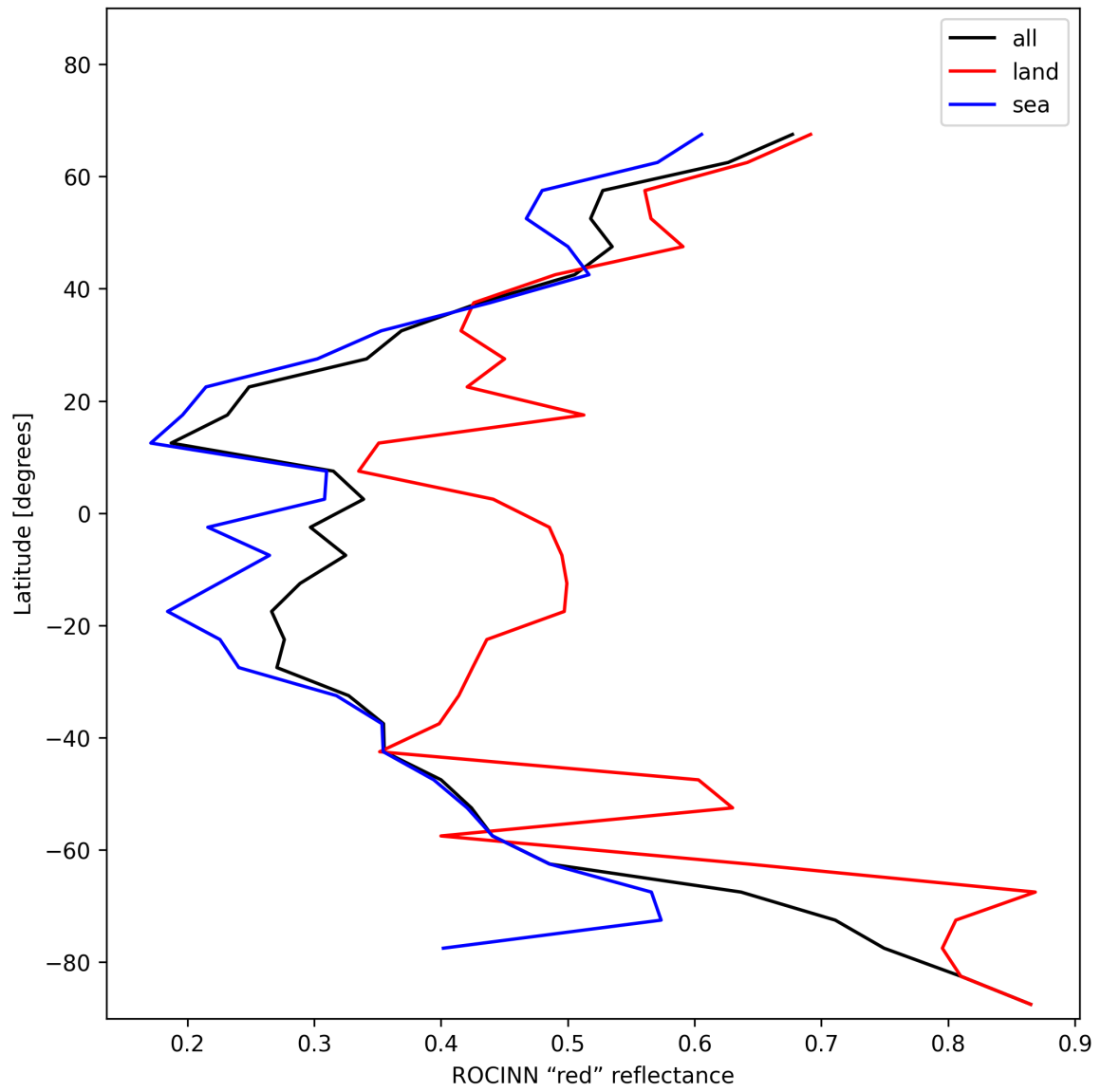


Figure 35: Zonal average of “ROCINN “red” reflectance” for 2025-01-22 to 2025-01-23.

8 Histograms

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

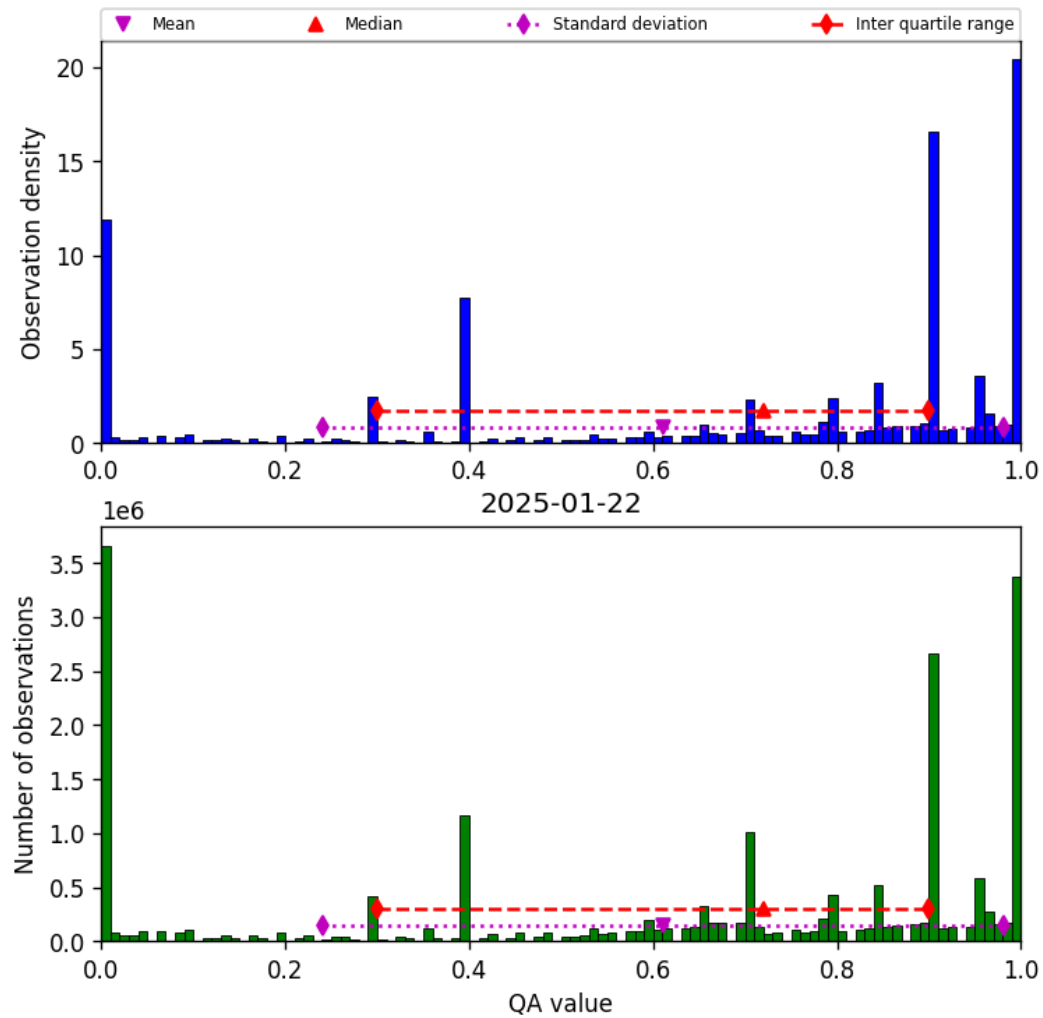


Figure 36: Histogram of “QA value” for 2025-01-22 to 2025-01-23

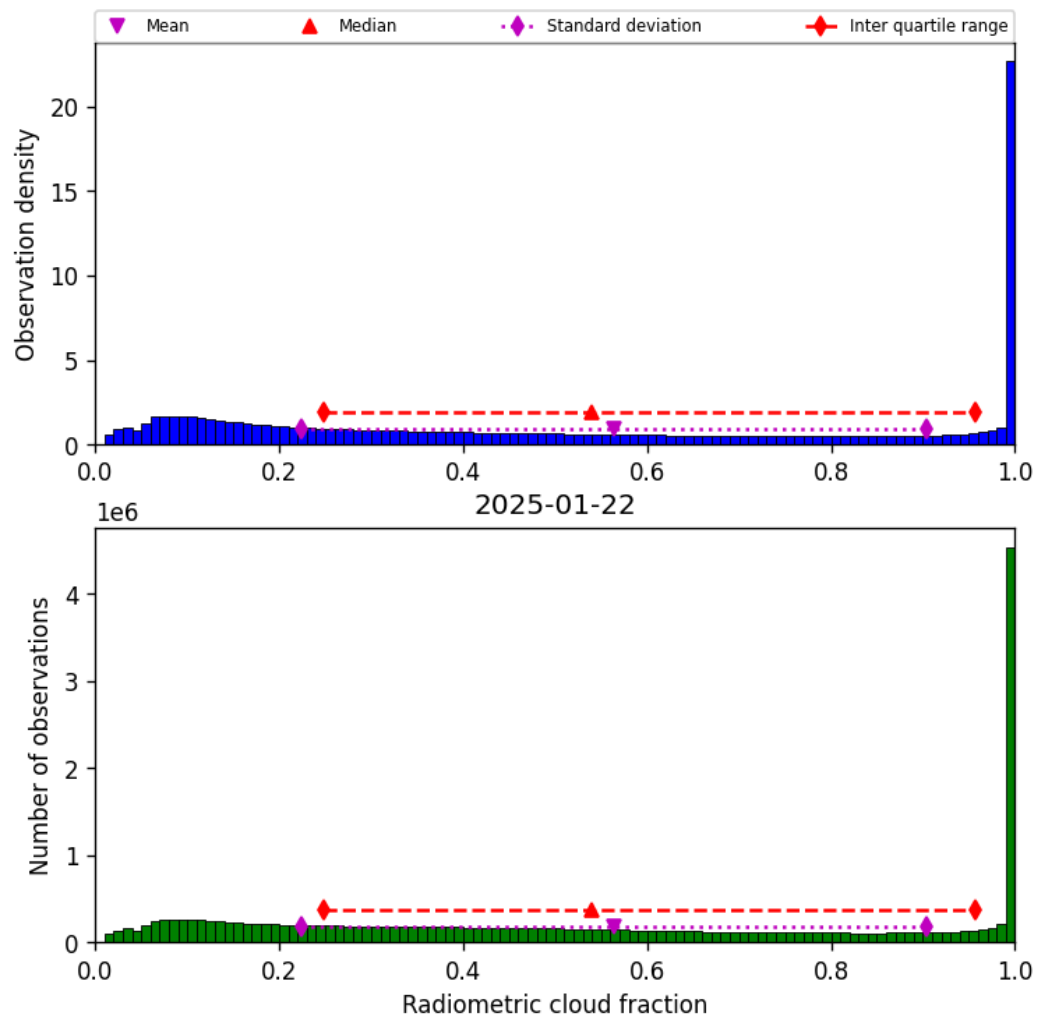


Figure 37: Histogram of “Radiometric cloud fraction” for 2025-01-22 to 2025-01-23

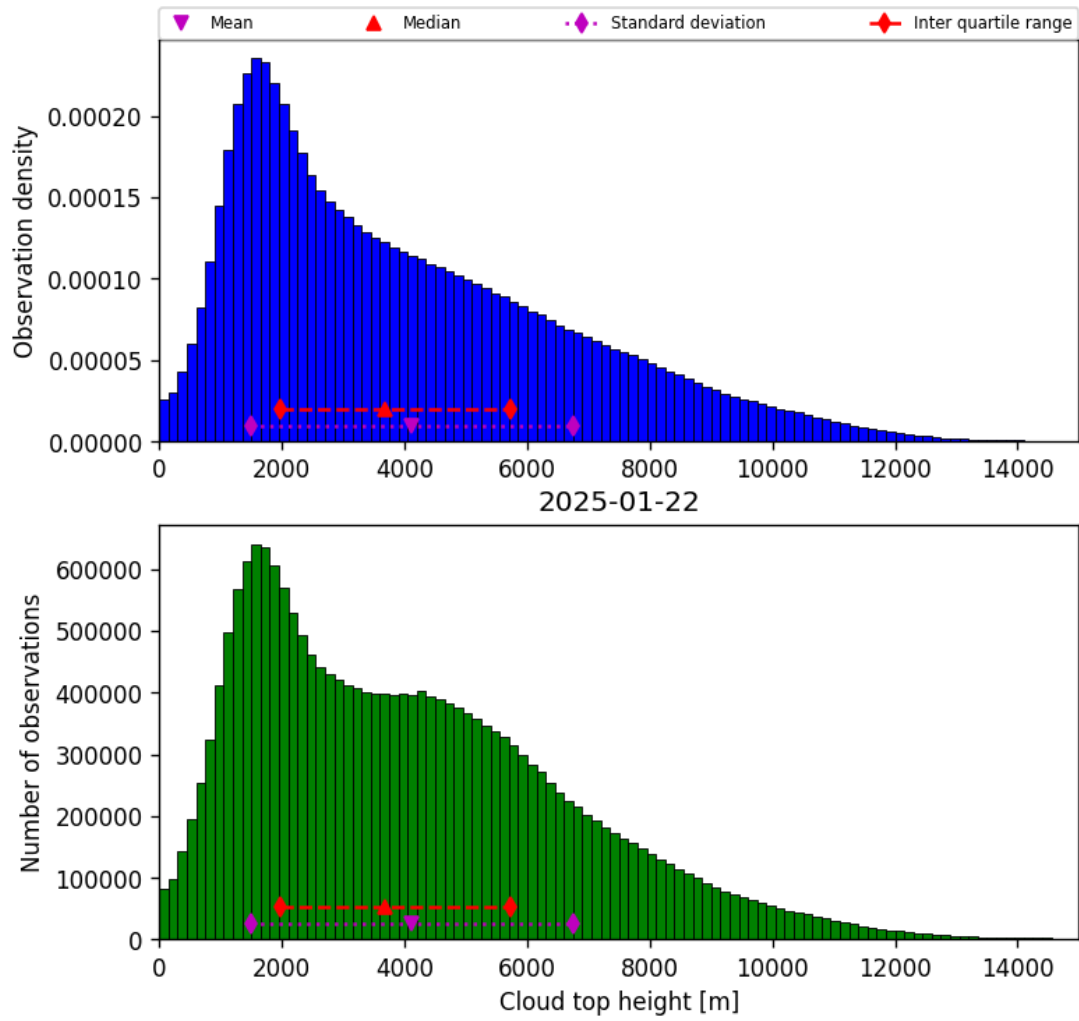


Figure 38: Histogram of “Cloud top height” for 2025-01-22 to 2025-01-23

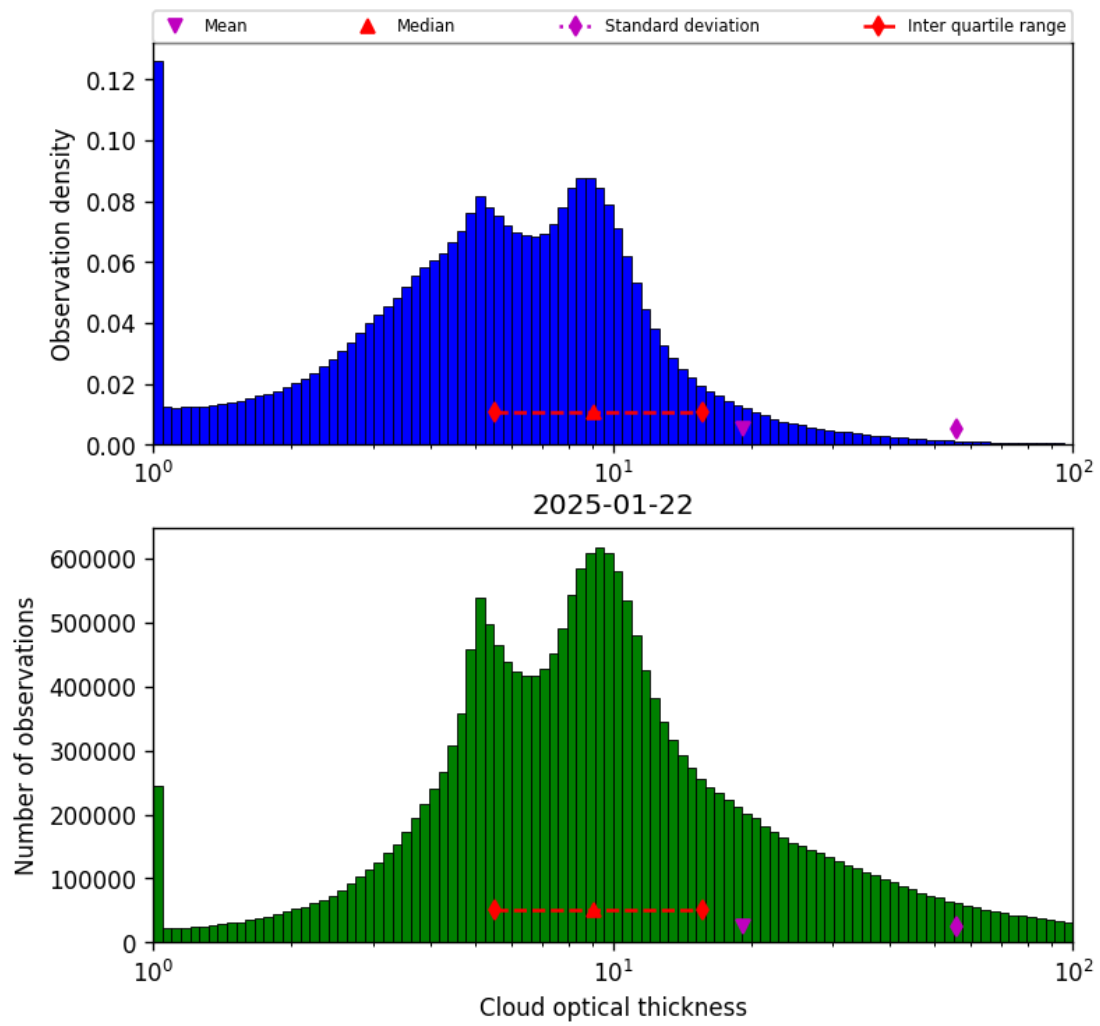


Figure 39: Histogram of “Cloud optical thickness” for 2025-01-22 to 2025-01-23

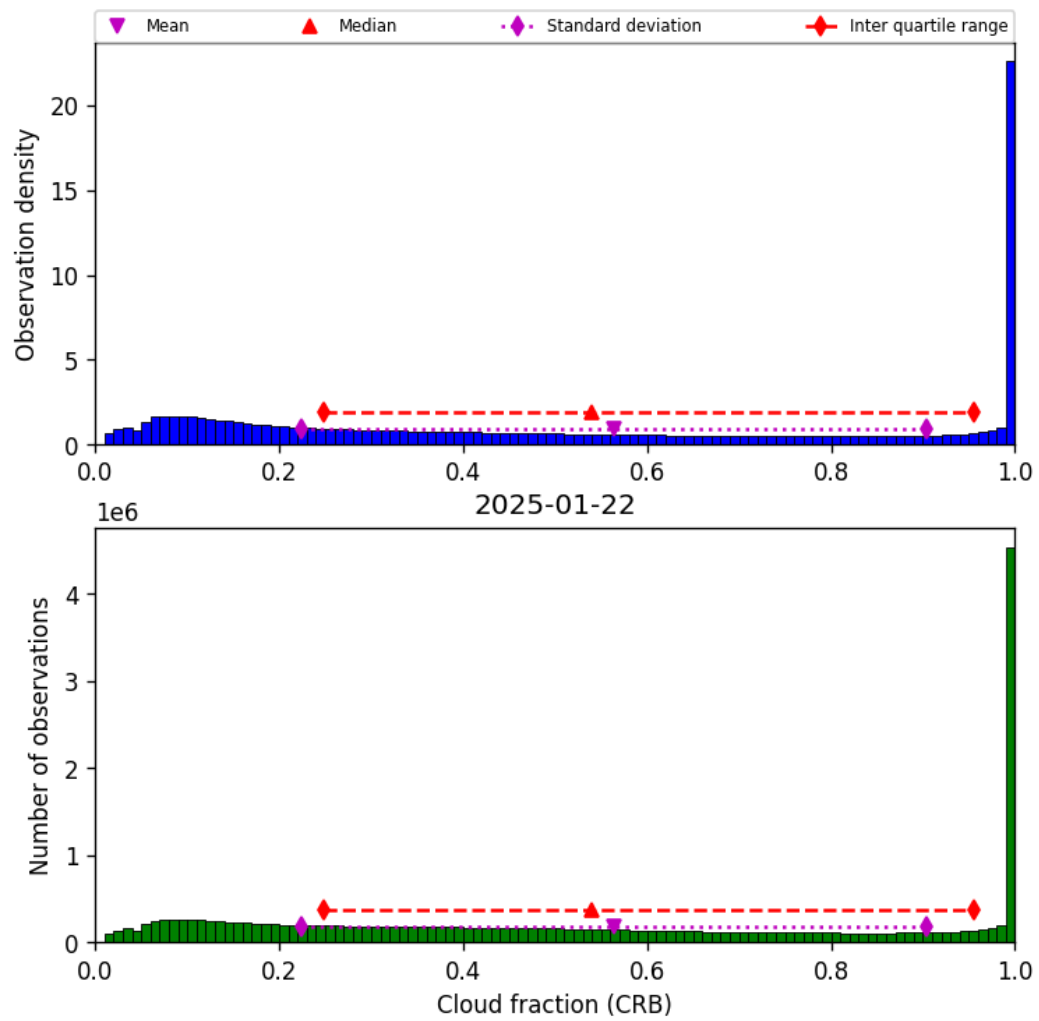


Figure 40: Histogram of “Cloud fraction (CRB)” for 2025-01-22 to 2025-01-23

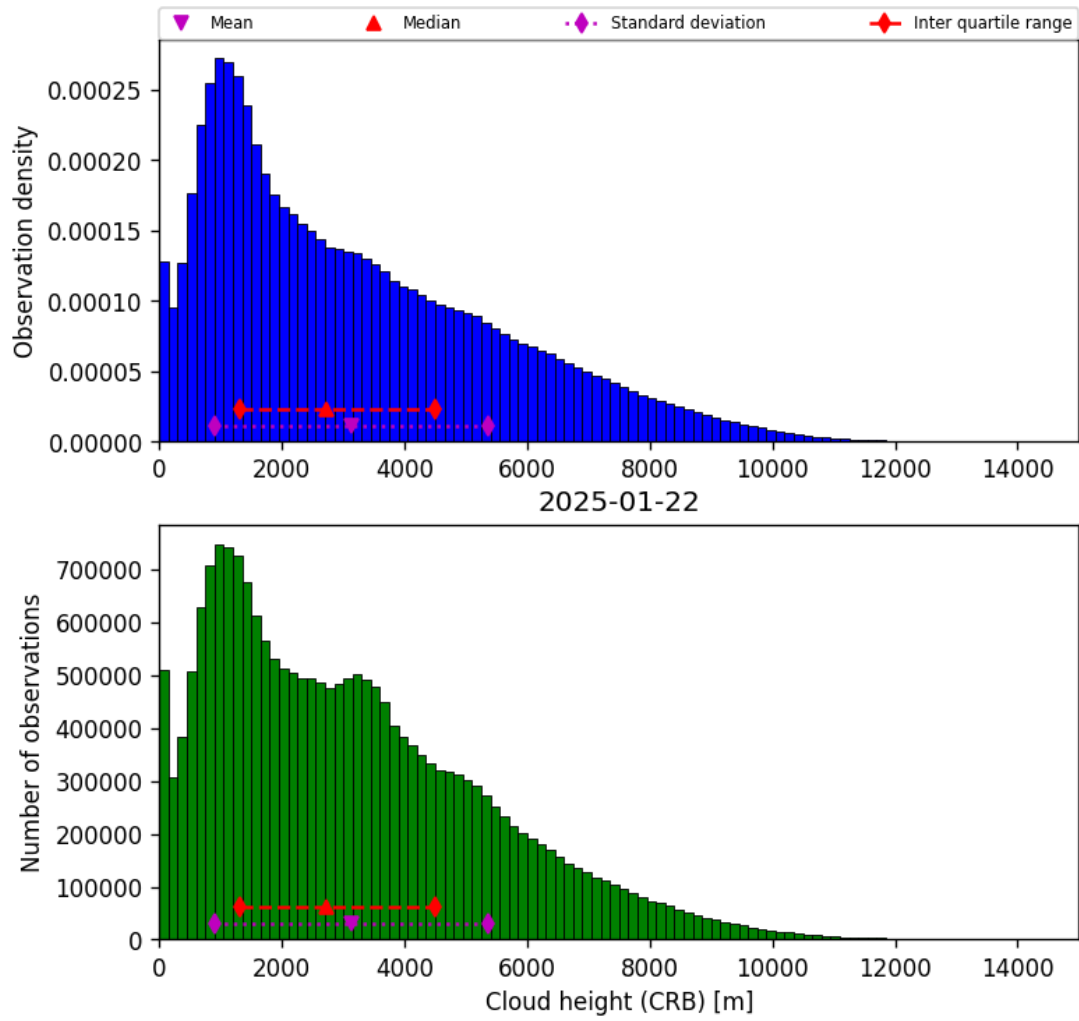


Figure 41: Histogram of “Cloud height (CRB)” for 2025-01-22 to 2025-01-23

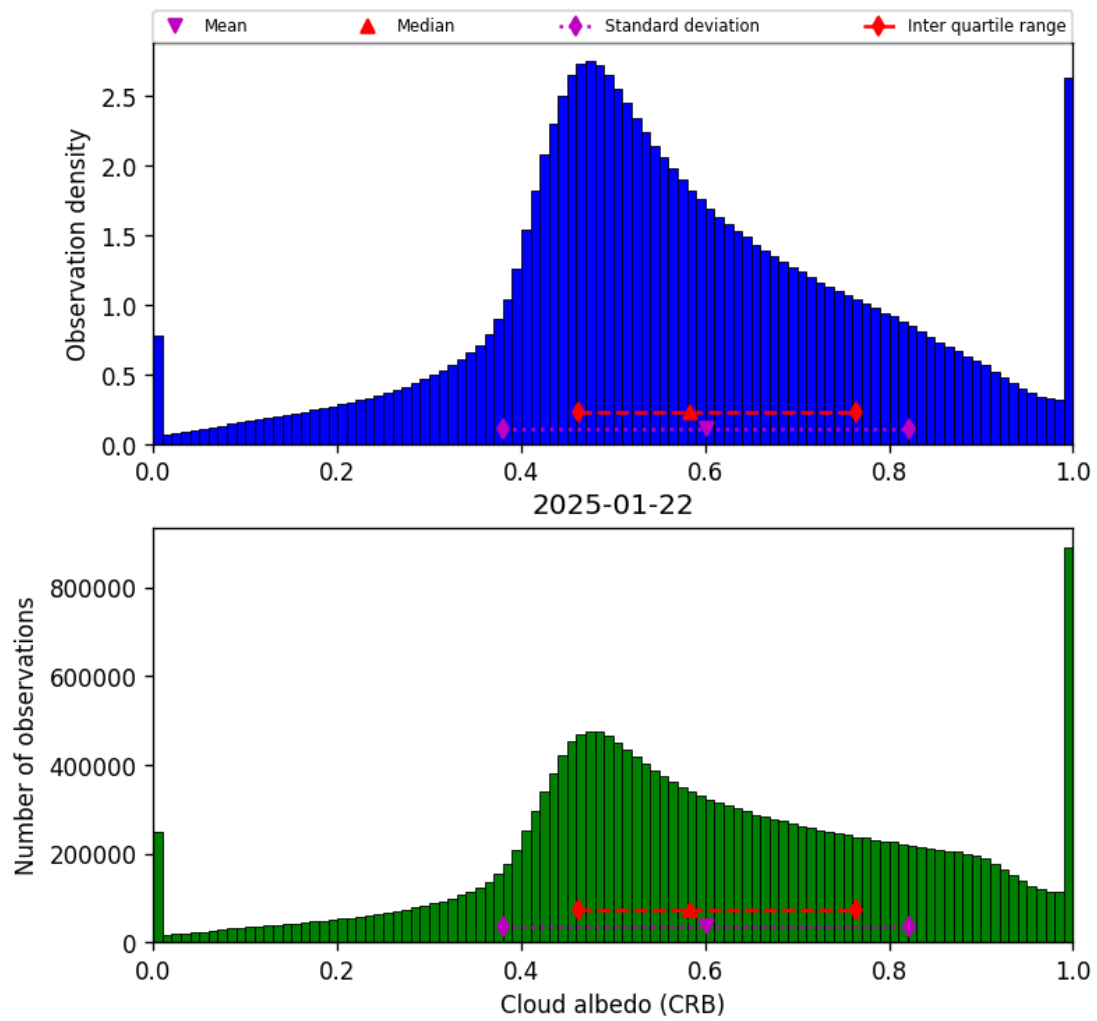


Figure 42: Histogram of “Cloud albedo (CRB)” for 2025-01-22 to 2025-01-23

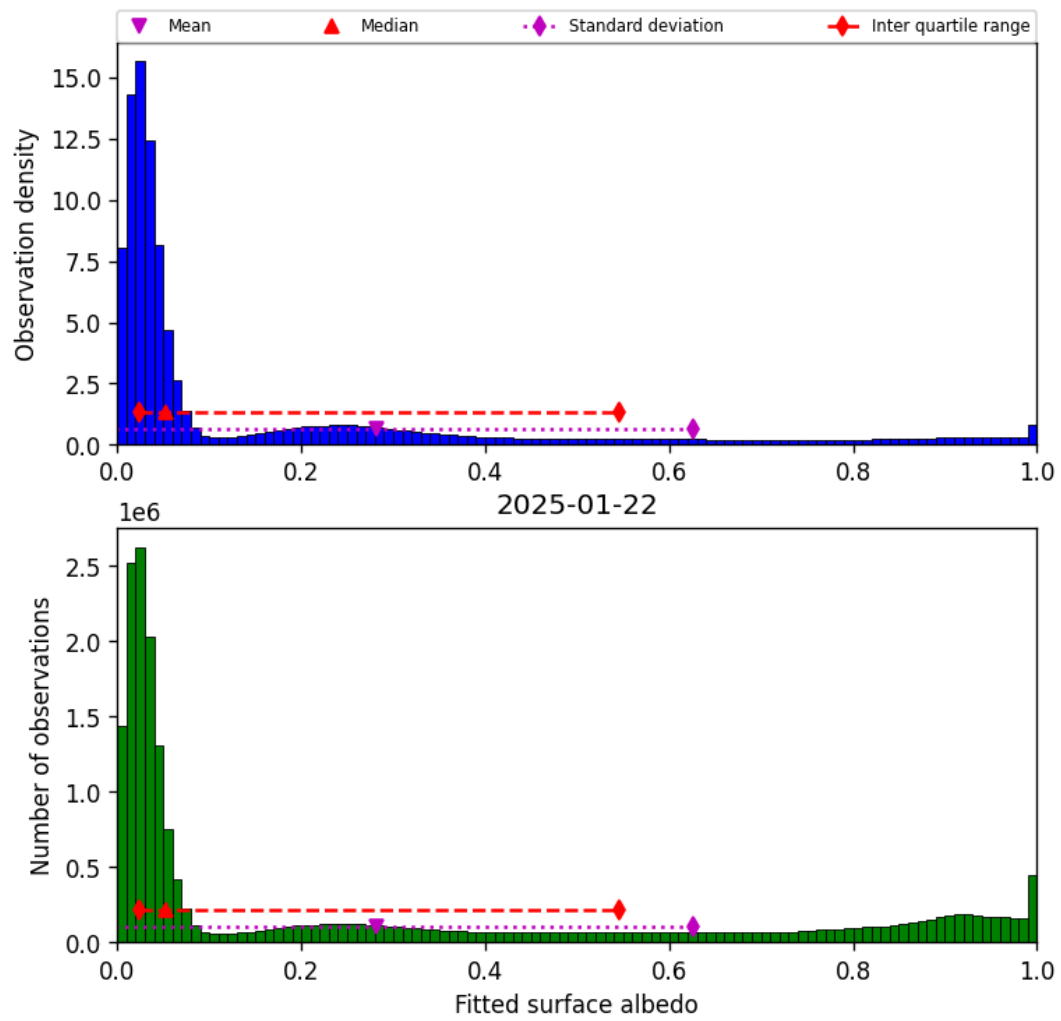


Figure 43: Histogram of “Fitted surface albedo” for 2025-01-22 to 2025-01-23

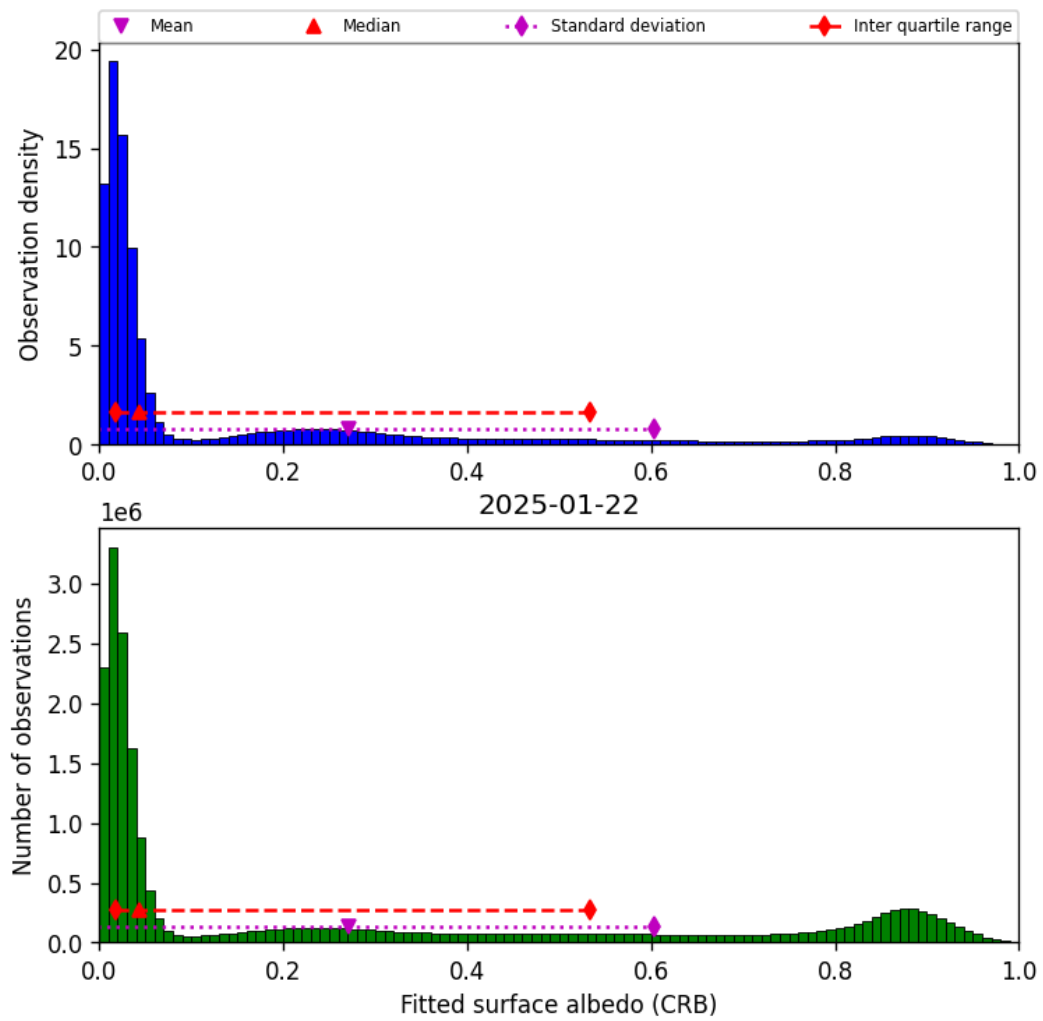


Figure 44: Histogram of “Fitted surface albedo (CRB)” for 2025-01-22 to 2025-01-23

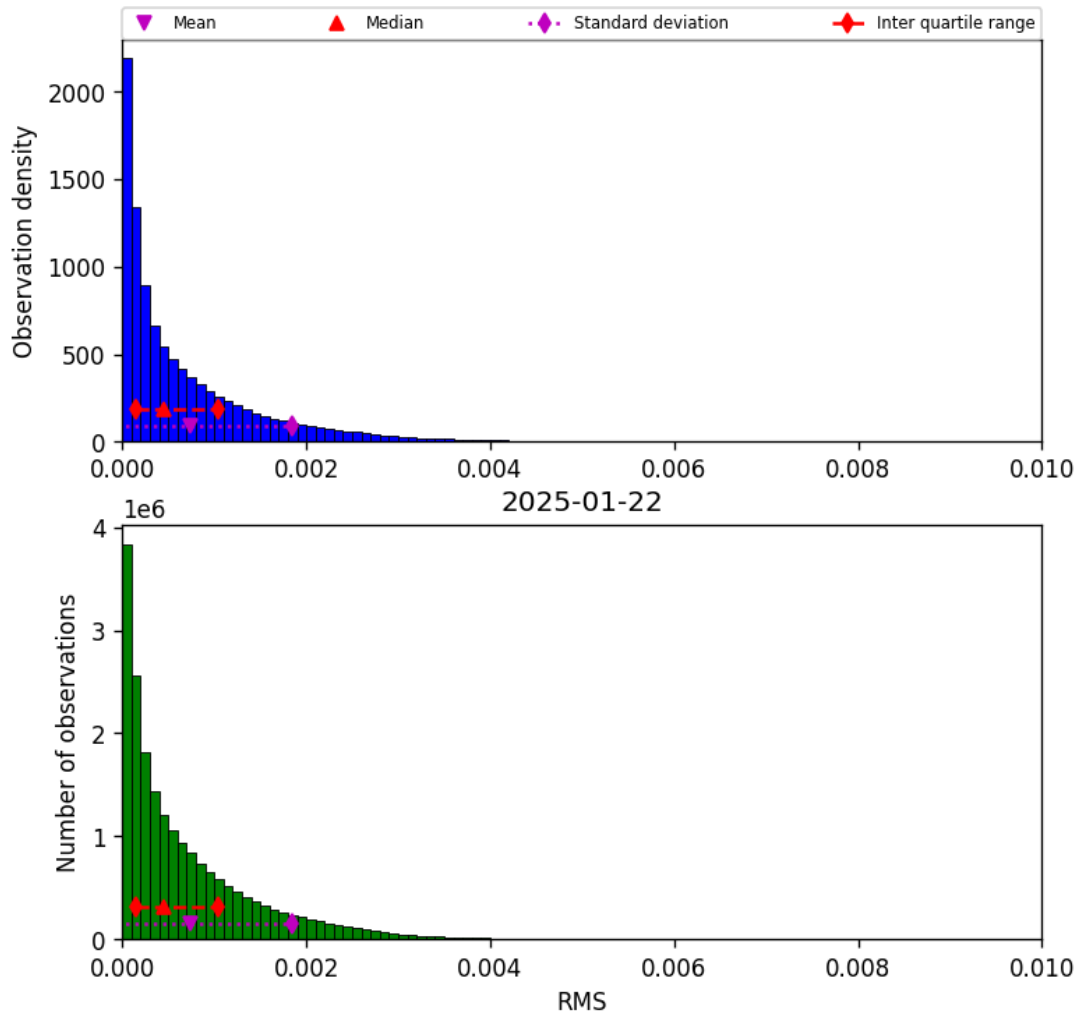


Figure 45: Histogram of “RMS” for 2025-01-22 to 2025-01-23

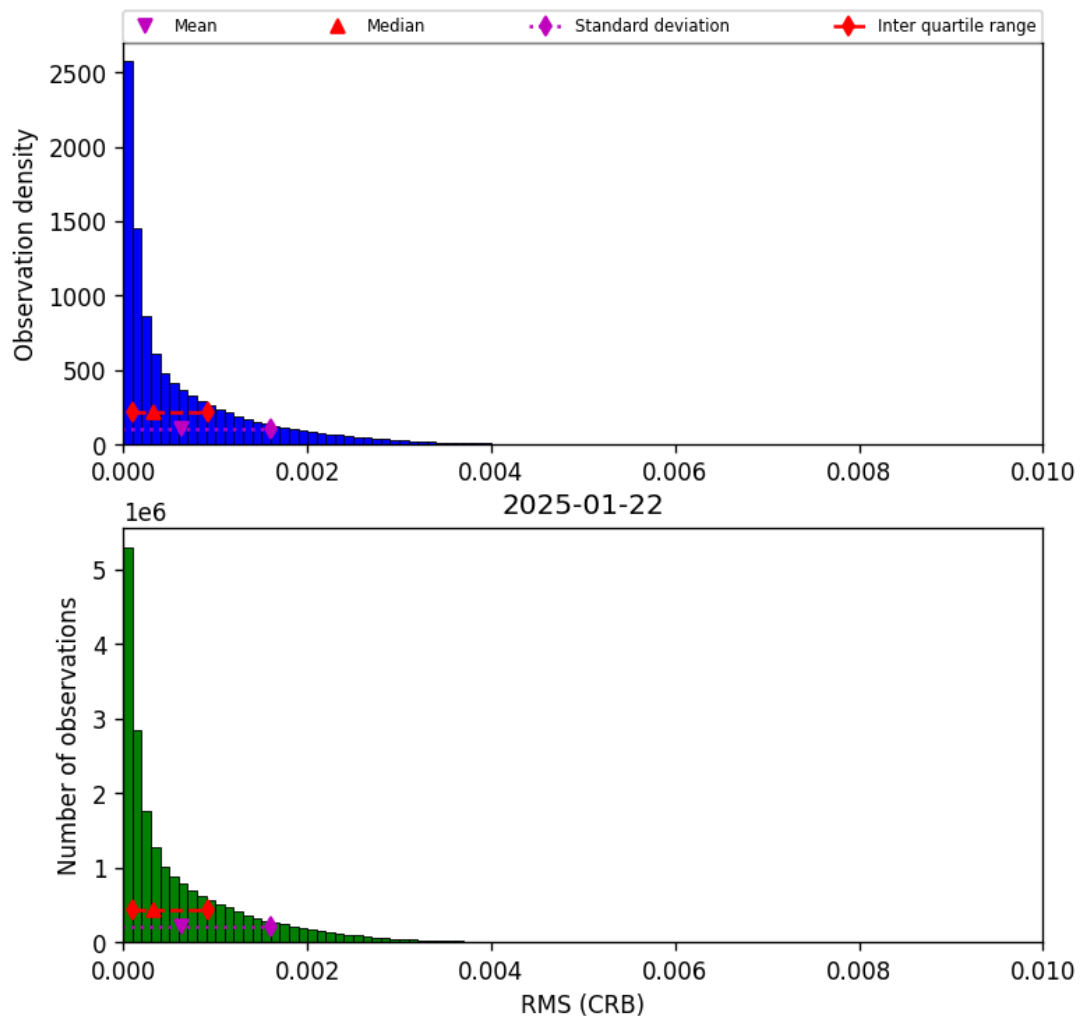


Figure 46: Histogram of “RMS (CRB)” for 2025-01-22 to 2025-01-23

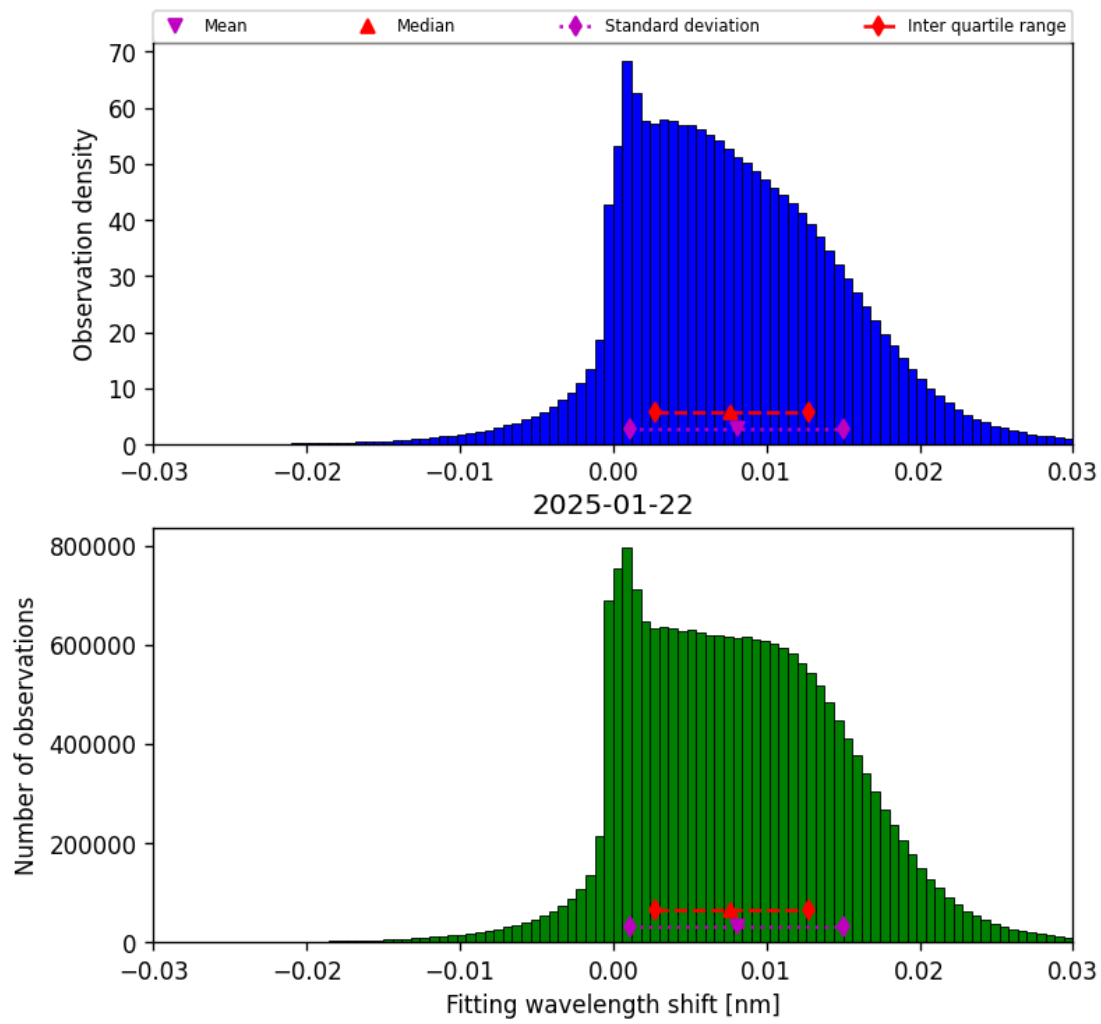


Figure 47: Histogram of “Fitting wavelength shift” for 2025-01-22 to 2025-01-23

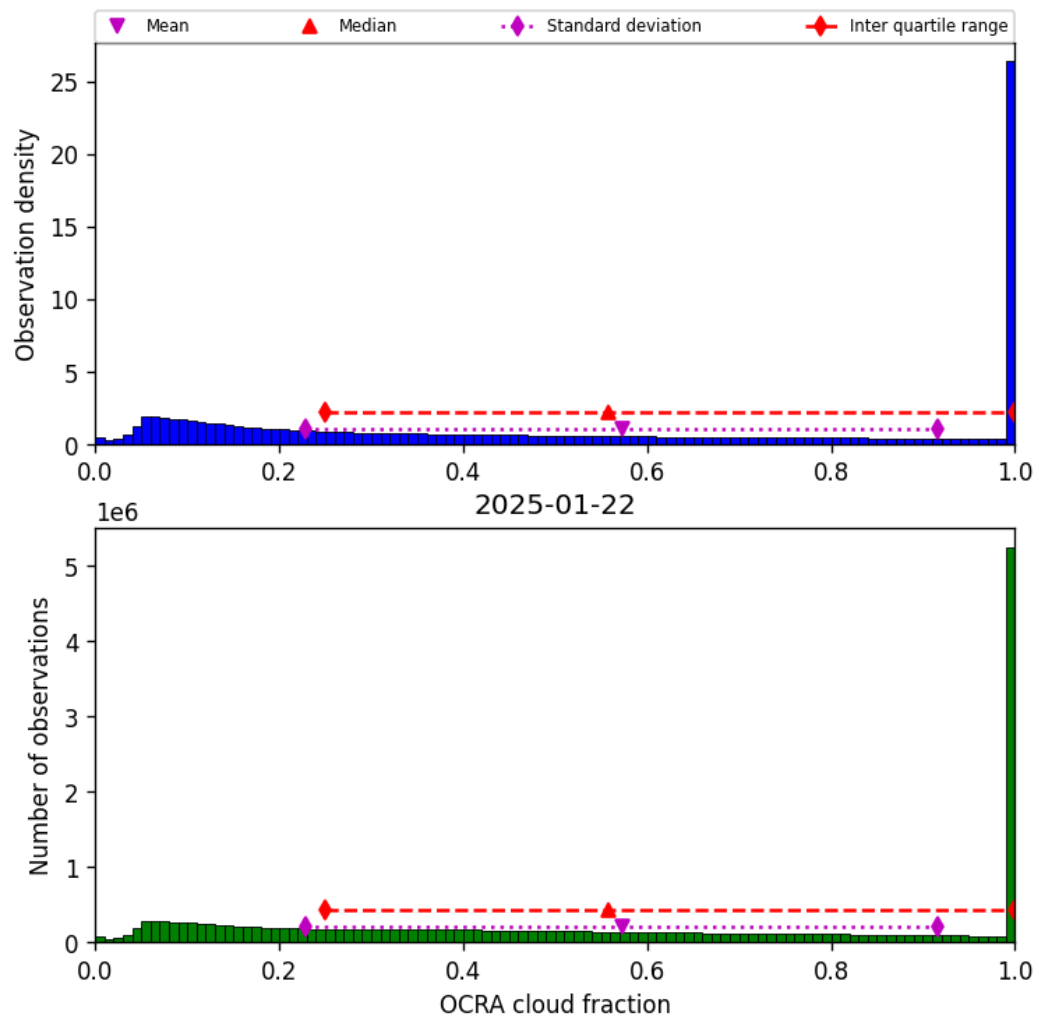


Figure 48: Histogram of “OCRA cloud fraction” for 2025-01-22 to 2025-01-23

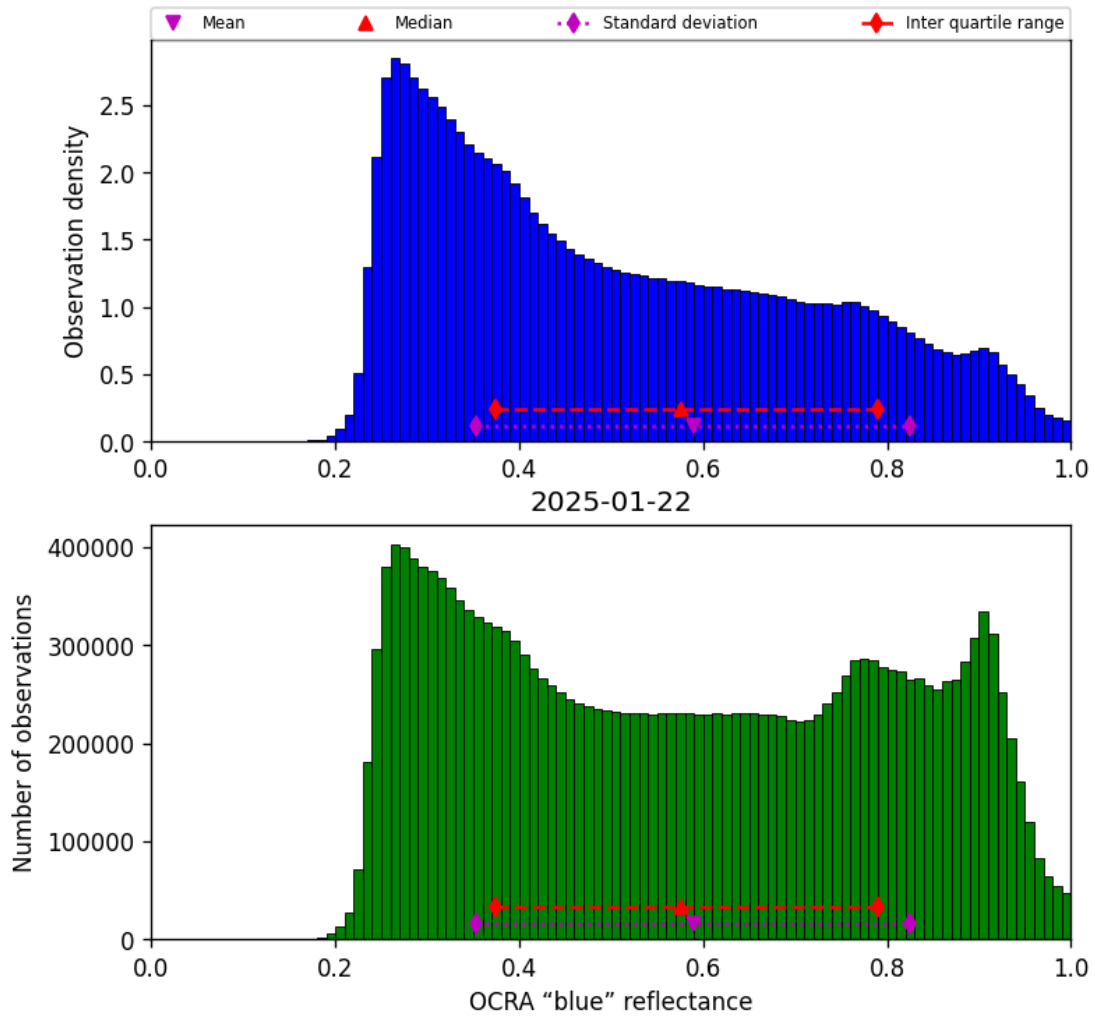


Figure 49: Histogram of “OCRA “blue” reflectance” for 2025-01-22 to 2025-01-23

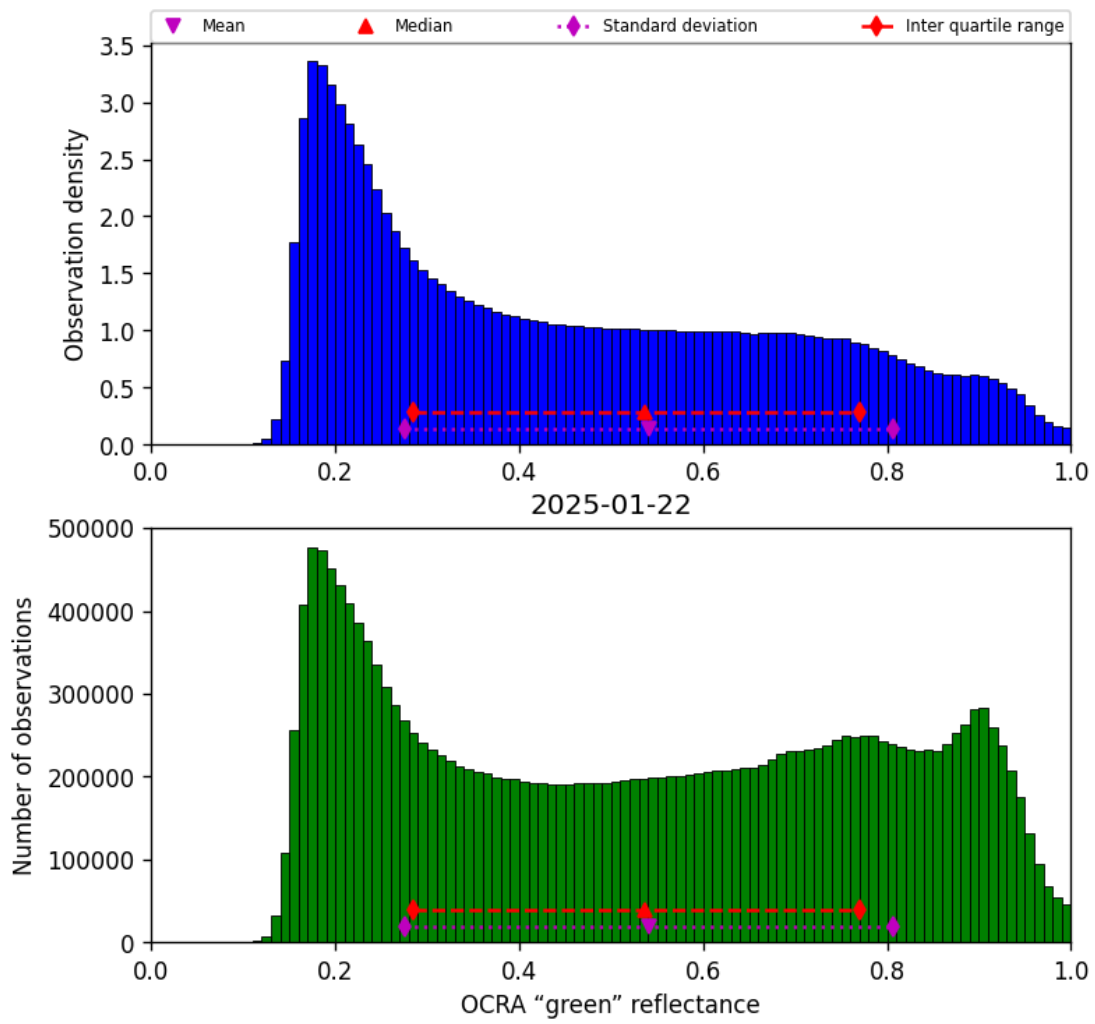


Figure 50: Histogram of “OCRA “green” reflectance” for 2025-01-22 to 2025-01-23

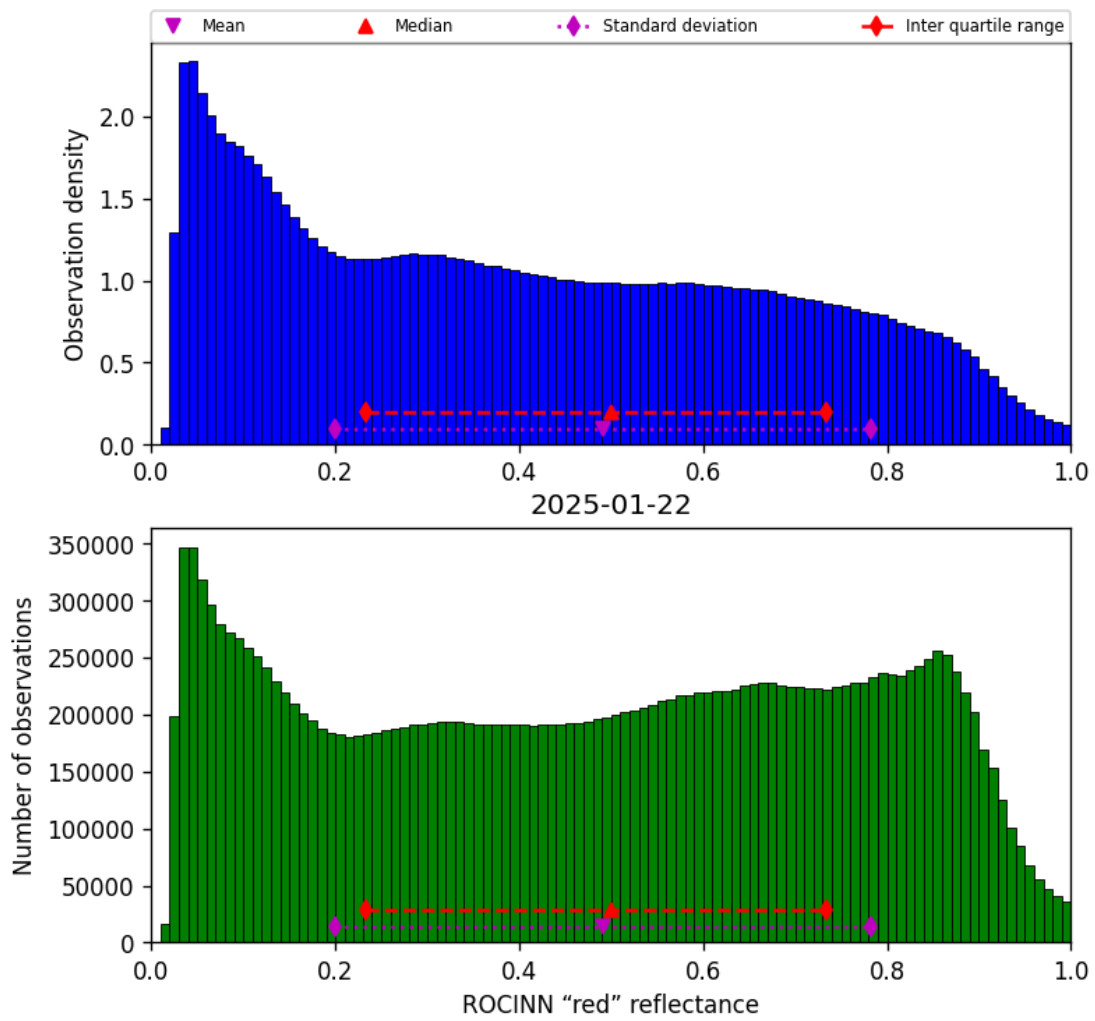


Figure 51: Histogram of “ROCINN “red” reflectance” for 2025-01-22 to 2025-01-23

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.

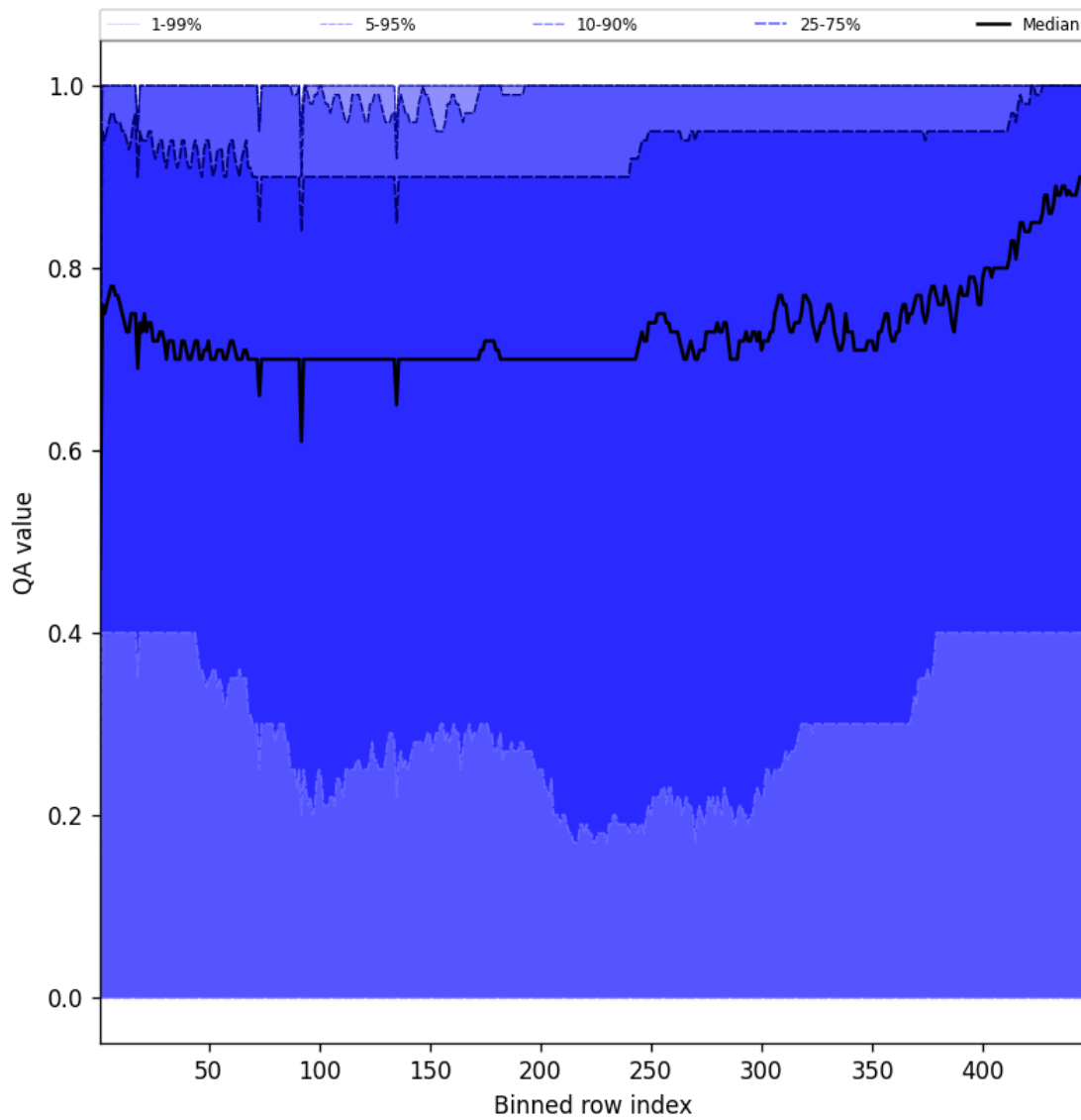


Figure 52: Along track statistics of “QA value” for 2025-01-22 to 2025-01-23

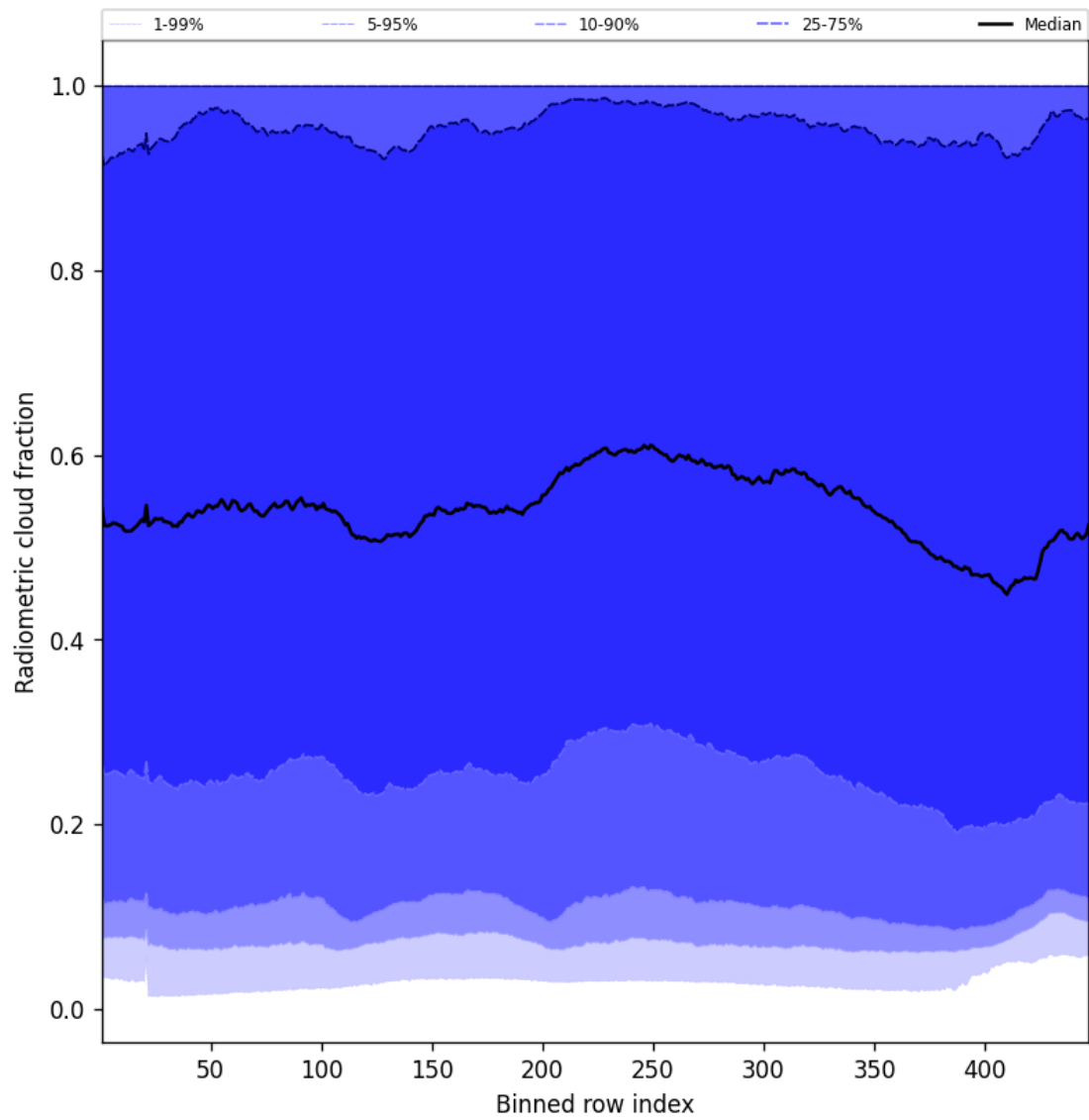


Figure 53: Along track statistics of “Radiometric cloud fraction” for 2025-01-22 to 2025-01-23

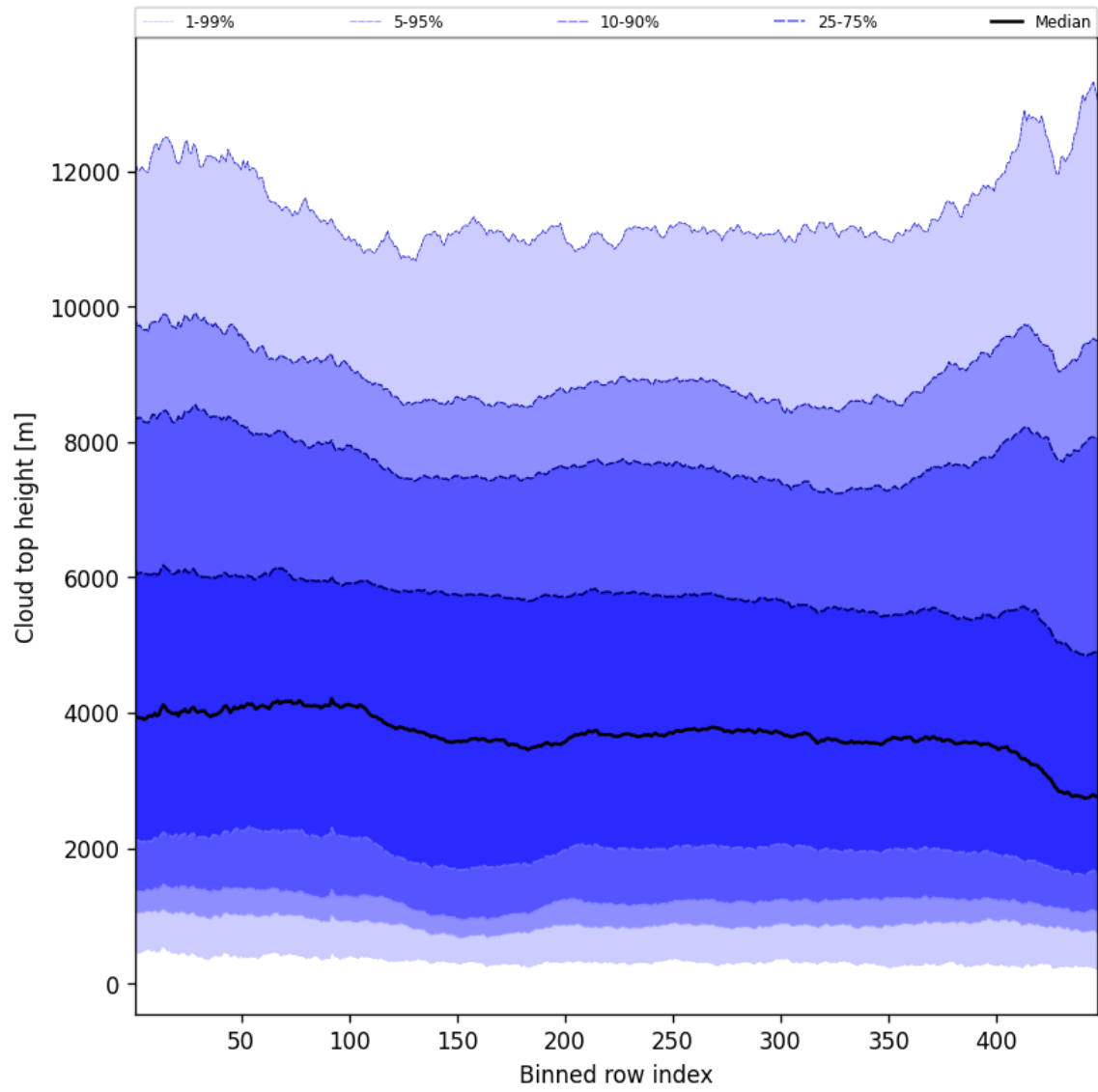


Figure 54: Along track statistics of “Cloud top height” for 2025-01-22 to 2025-01-23

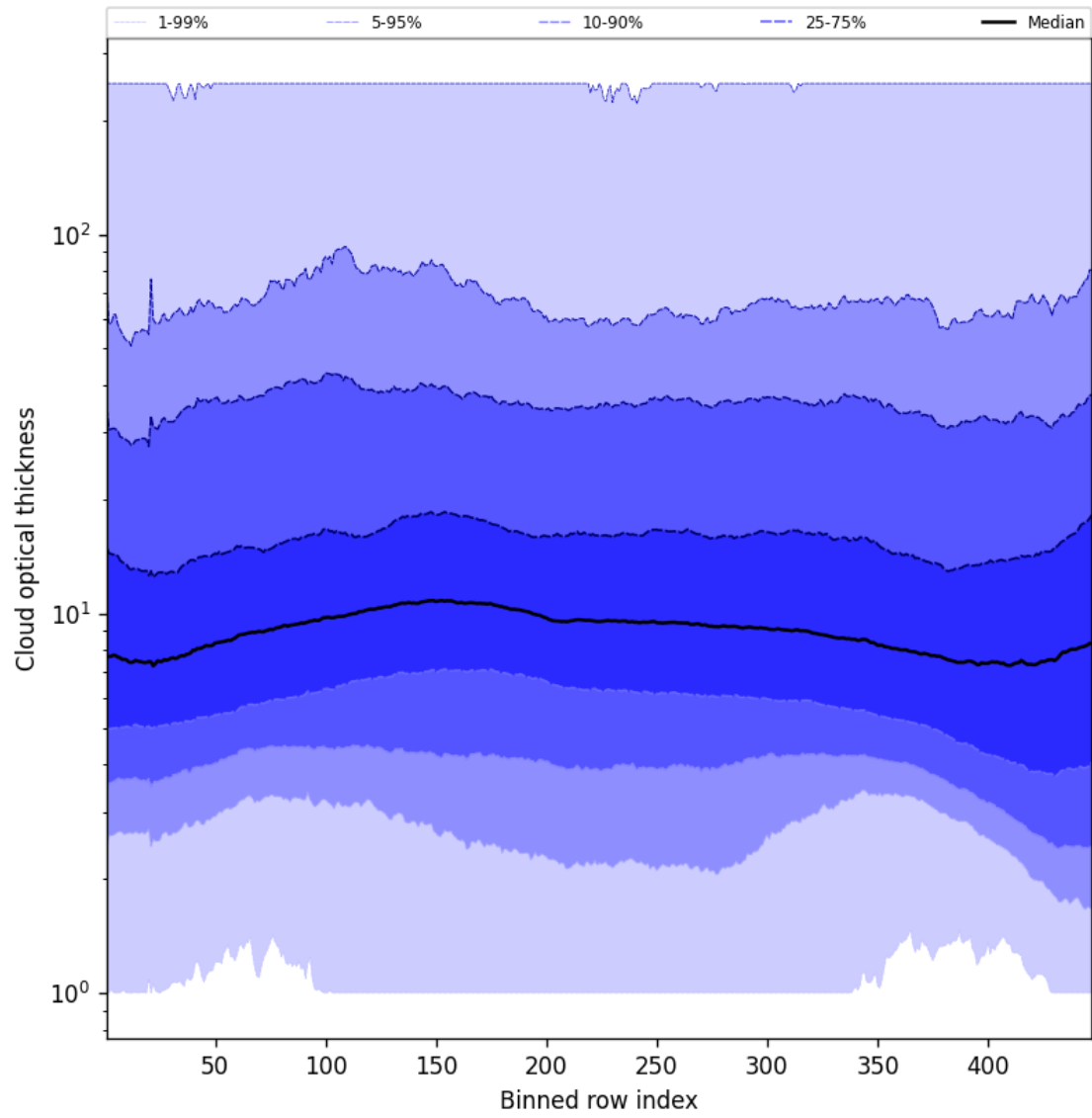


Figure 55: Along track statistics of “Cloud optical thickness” for 2025-01-22 to 2025-01-23

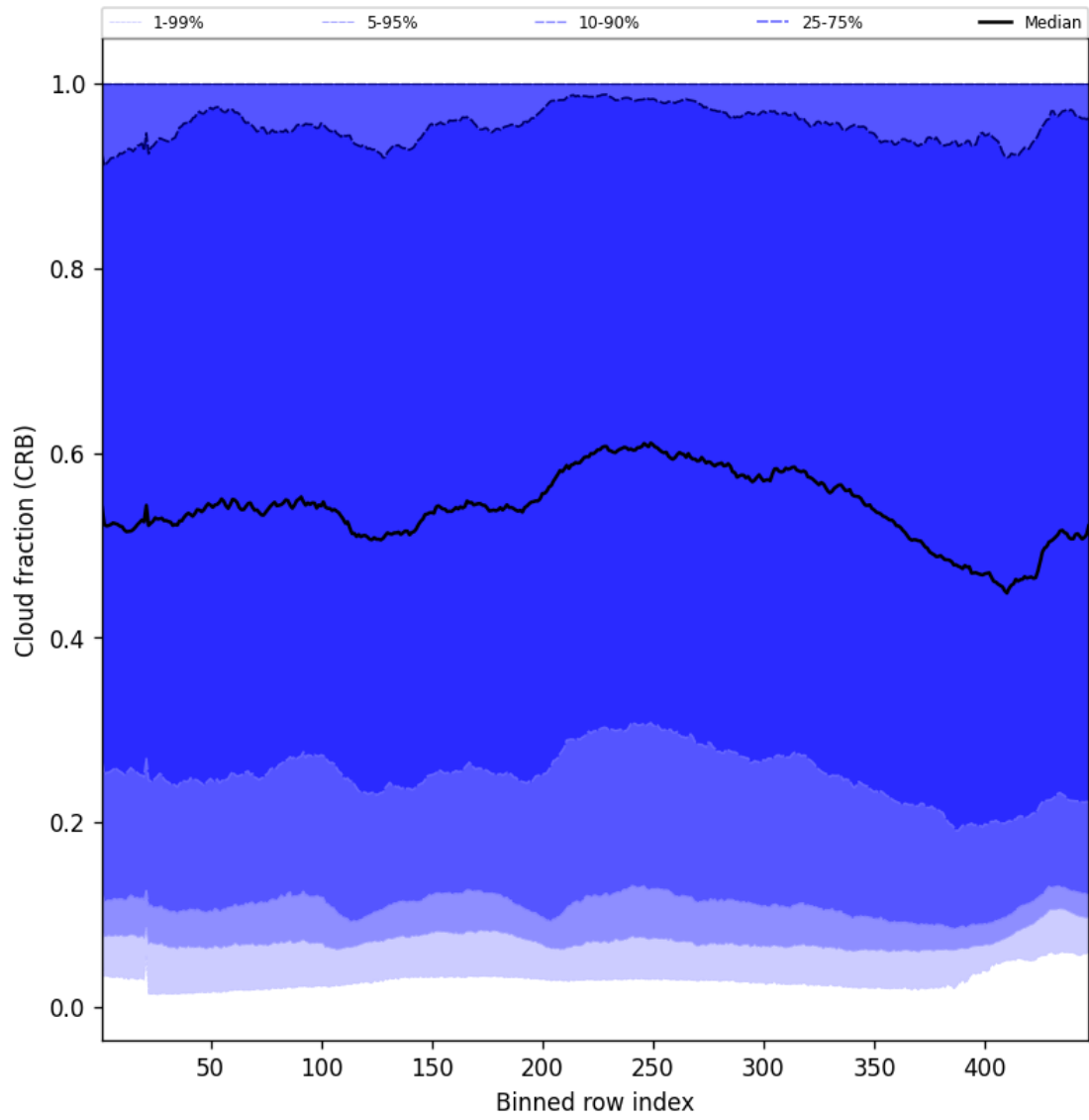


Figure 56: Along track statistics of “Cloud fraction (CRB)” for 2025-01-22 to 2025-01-23

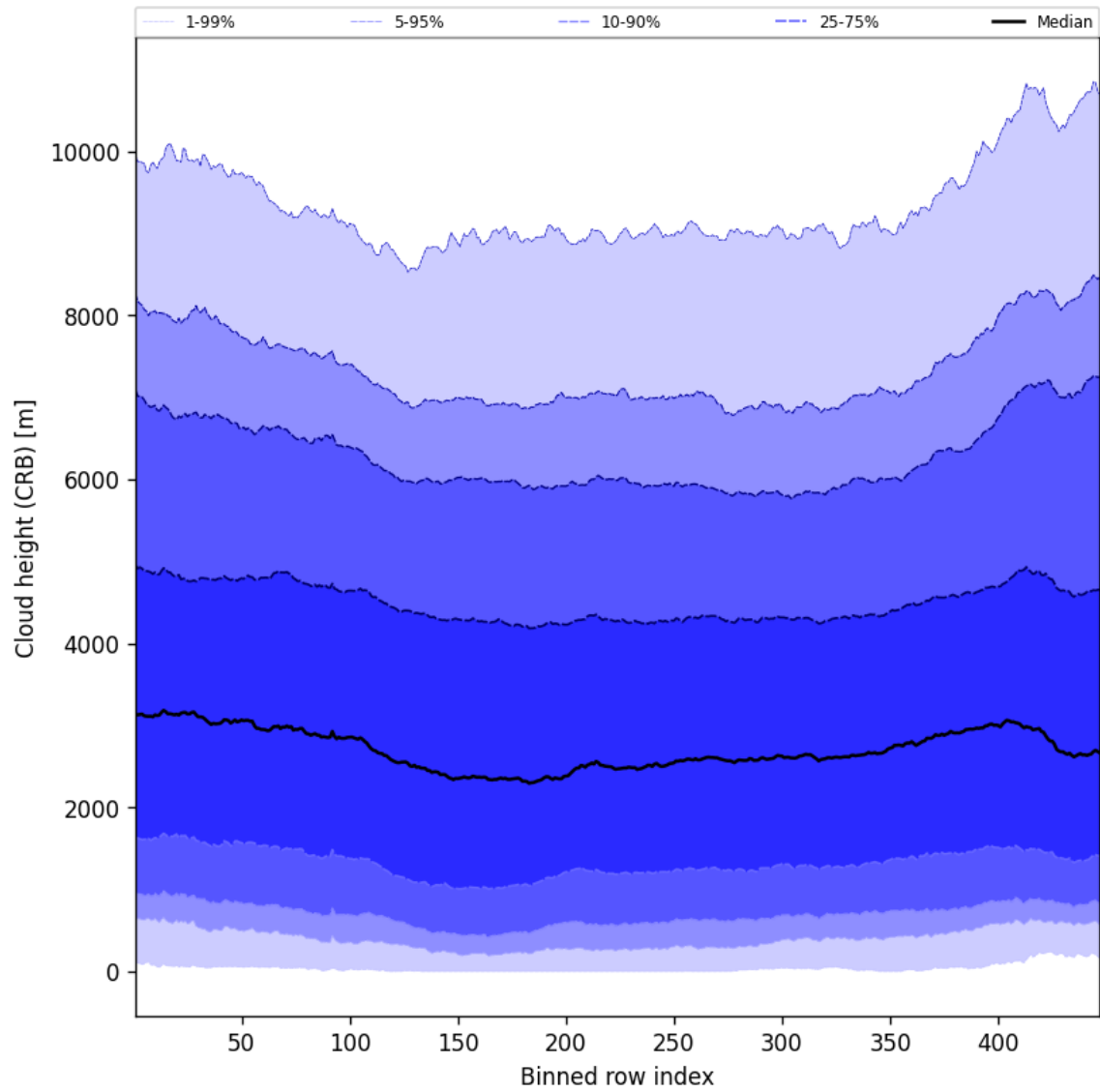


Figure 57: Along track statistics of “Cloud height (CRB)” for 2025-01-22 to 2025-01-23

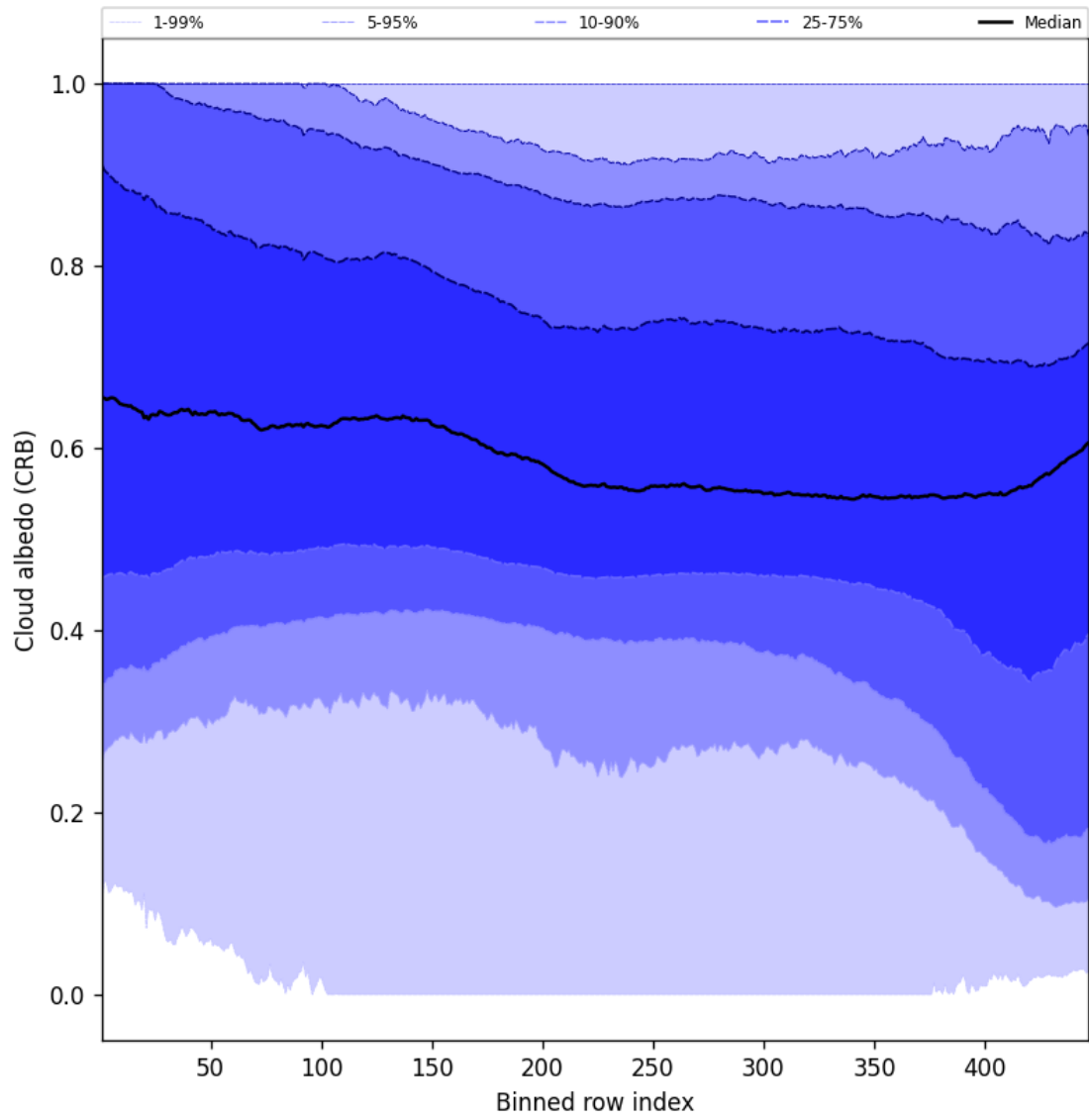


Figure 58: Along track statistics of “Cloud albedo (CRB)” for 2025-01-22 to 2025-01-23

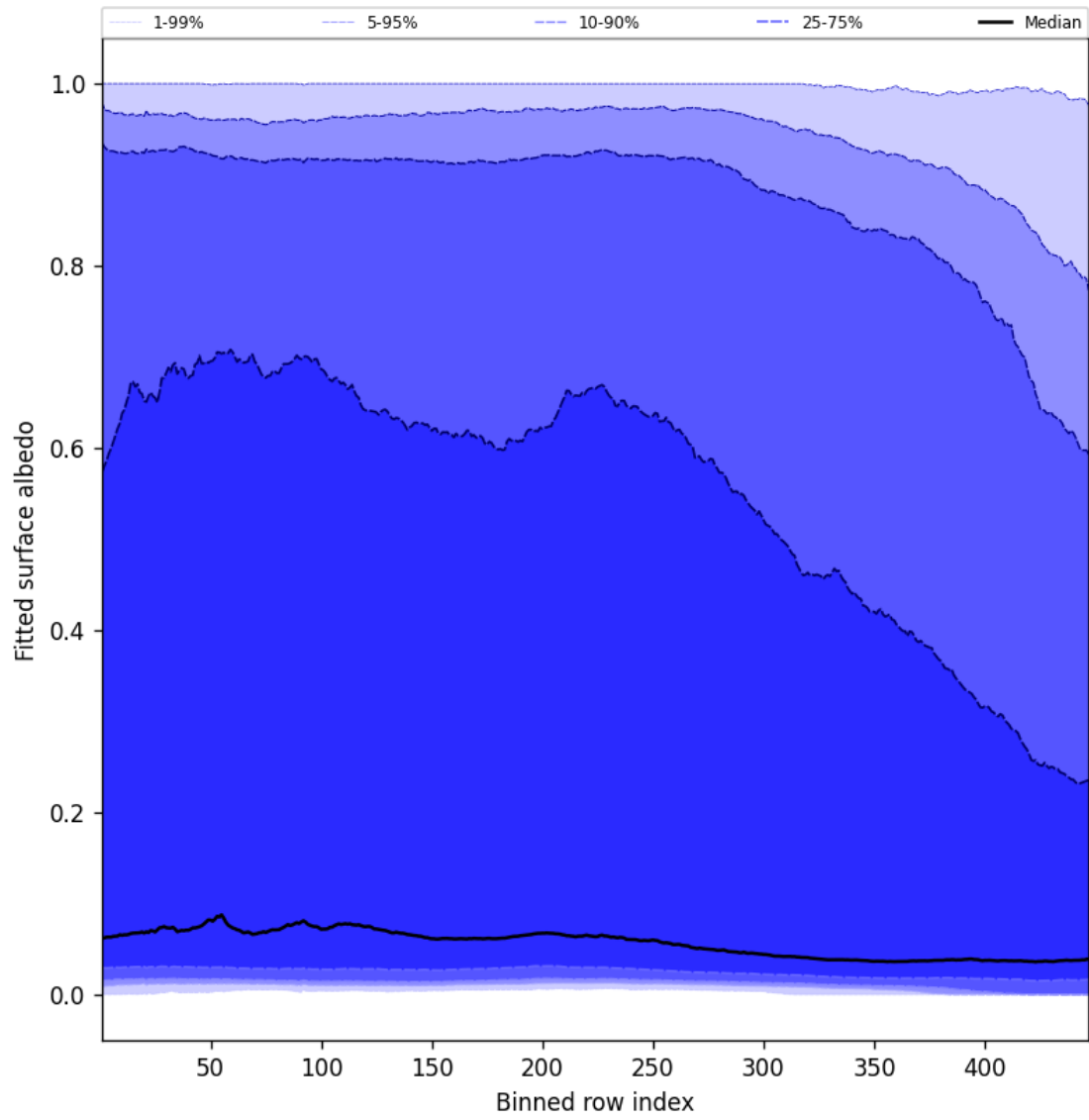


Figure 59: Along track statistics of “Fitted surface albedo” for 2025-01-22 to 2025-01-23

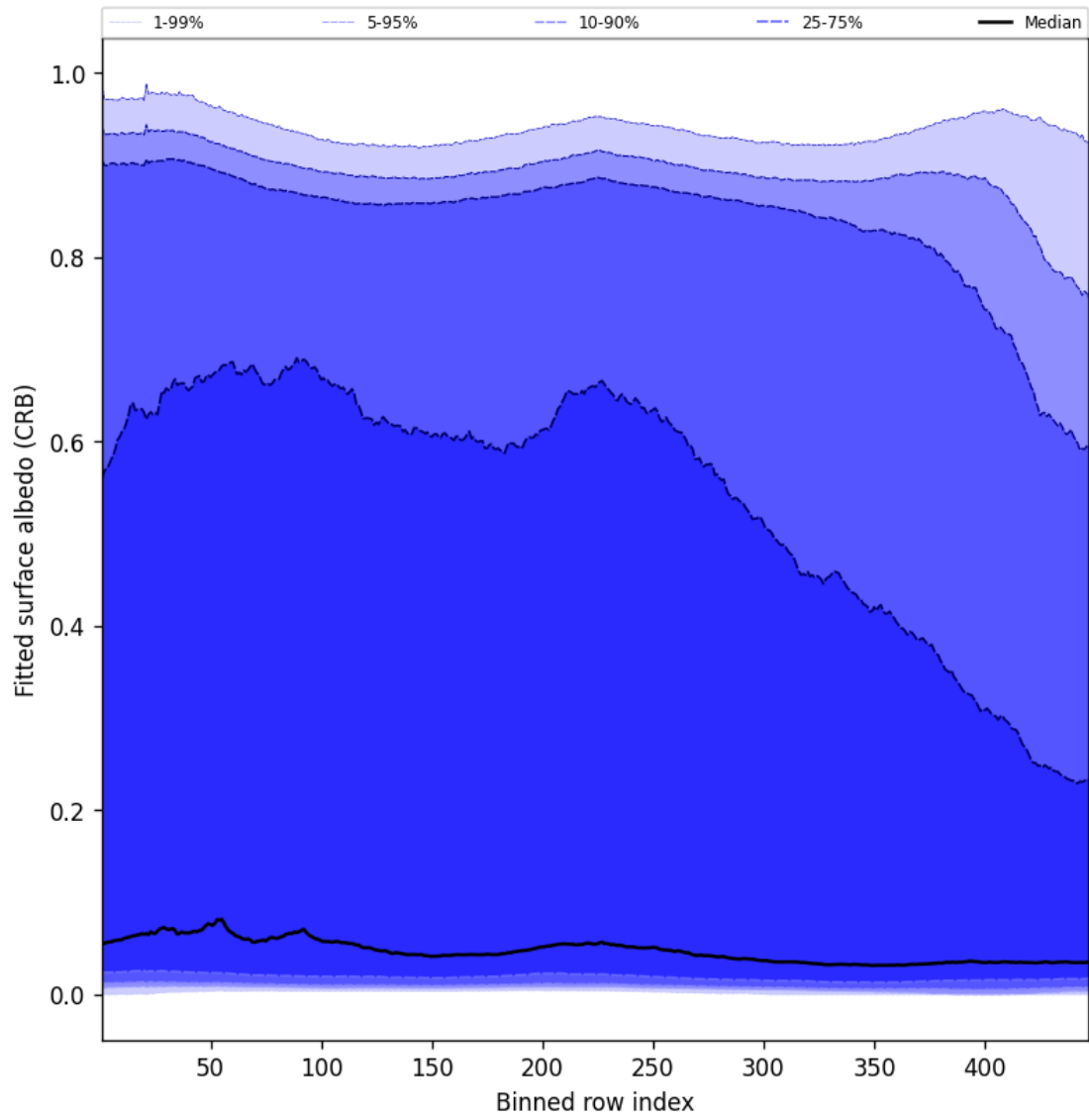


Figure 60: Along track statistics of “Fitted surface albedo (CRB)” for 2025-01-22 to 2025-01-23

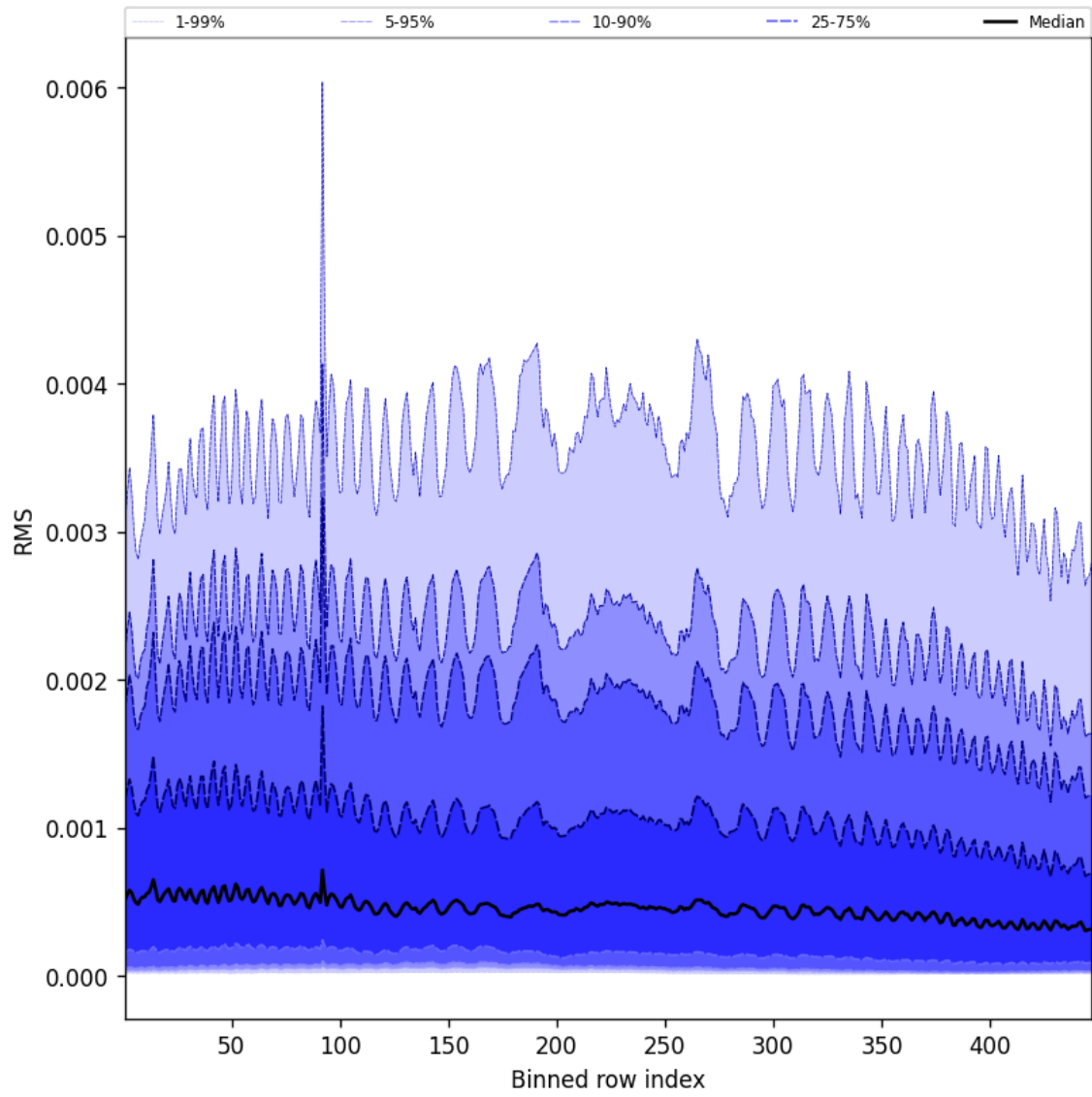


Figure 61: Along track statistics of “RMS” for 2025-01-22 to 2025-01-23

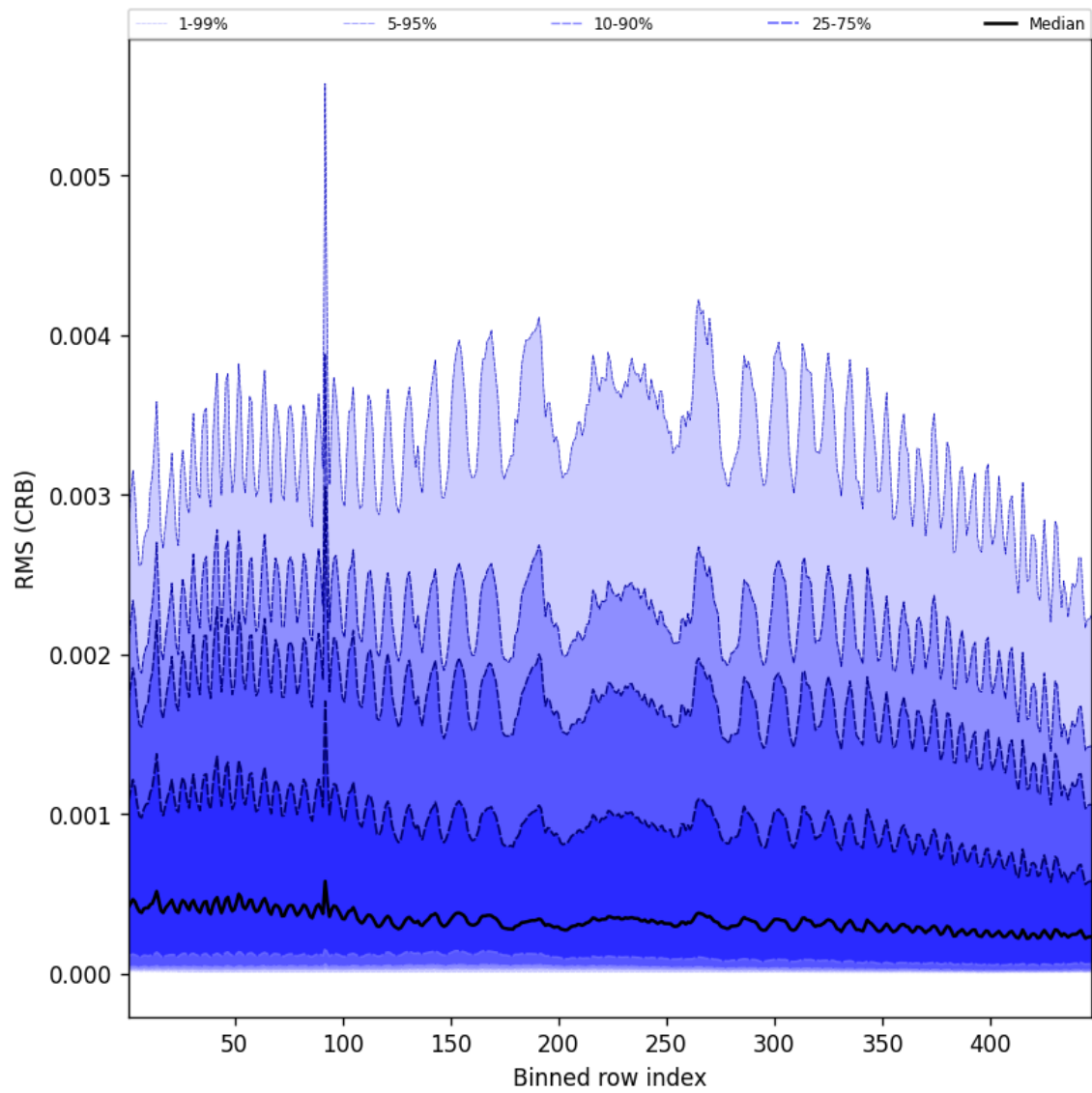


Figure 62: Along track statistics of “RMS (CRB)” for 2025-01-22 to 2025-01-23

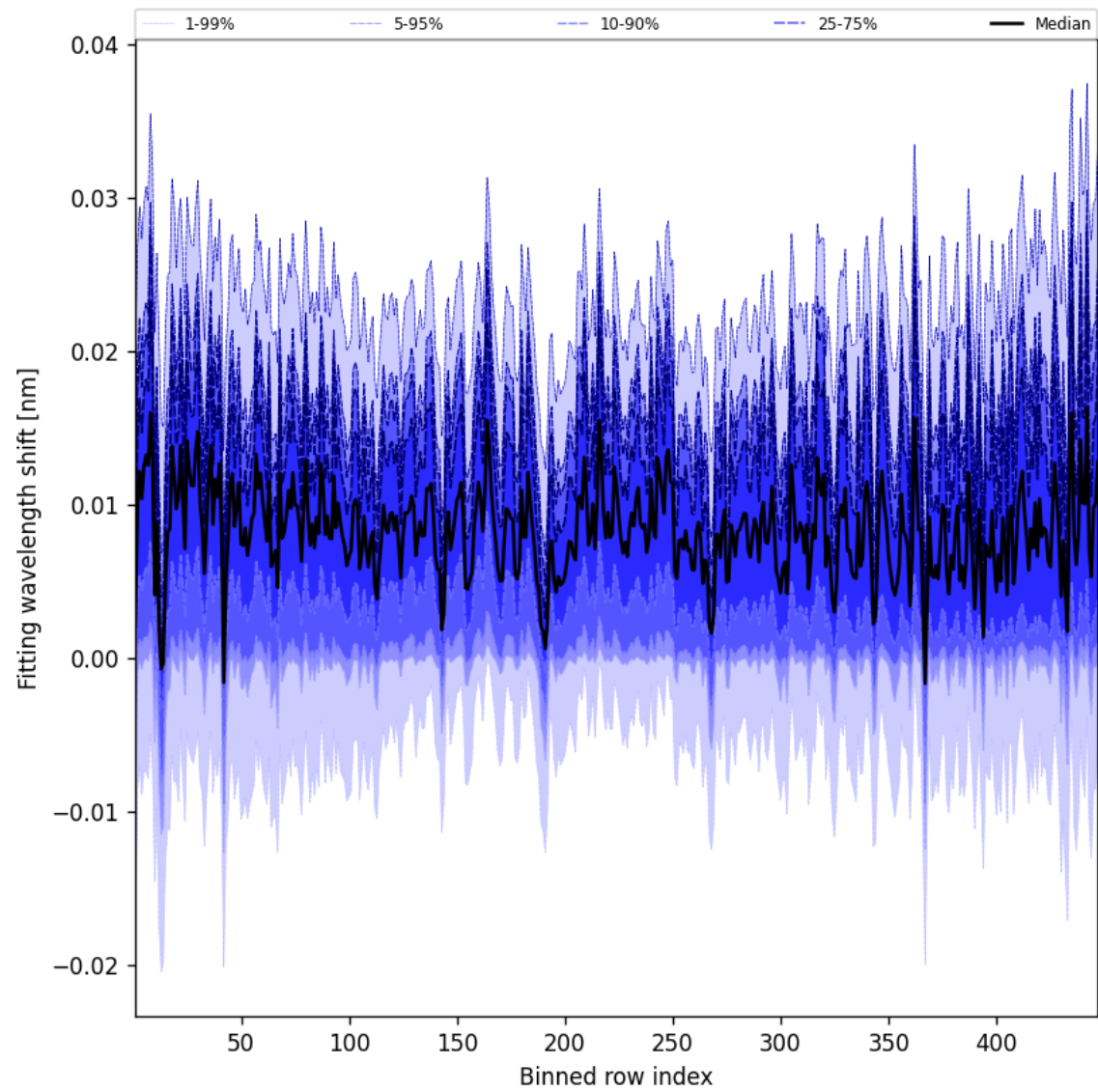


Figure 63: Along track statistics of “Fitting wavelength shift” for 2025-01-22 to 2025-01-23

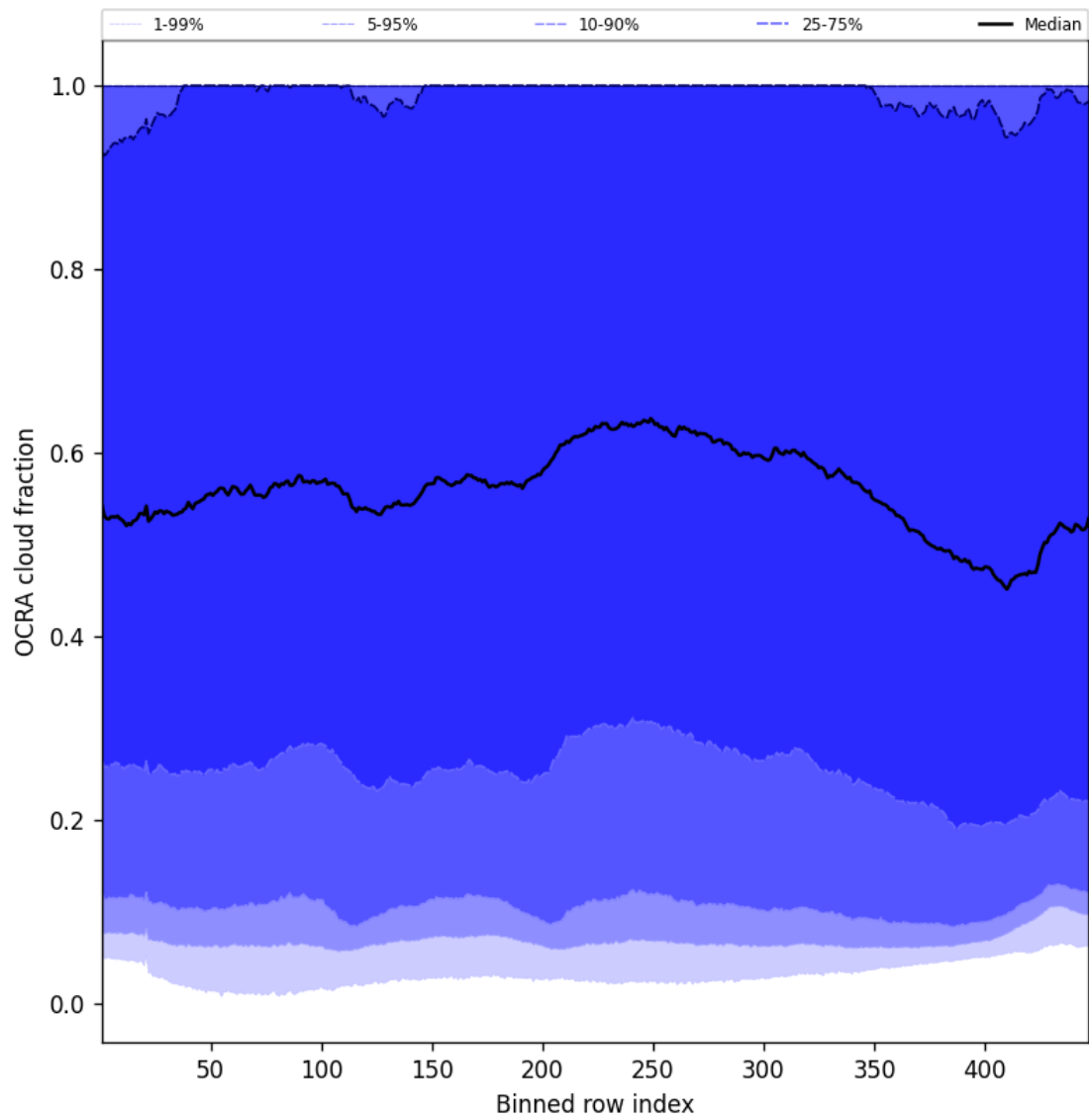


Figure 64: Along track statistics of “OCRA cloud fraction” for 2025-01-22 to 2025-01-23

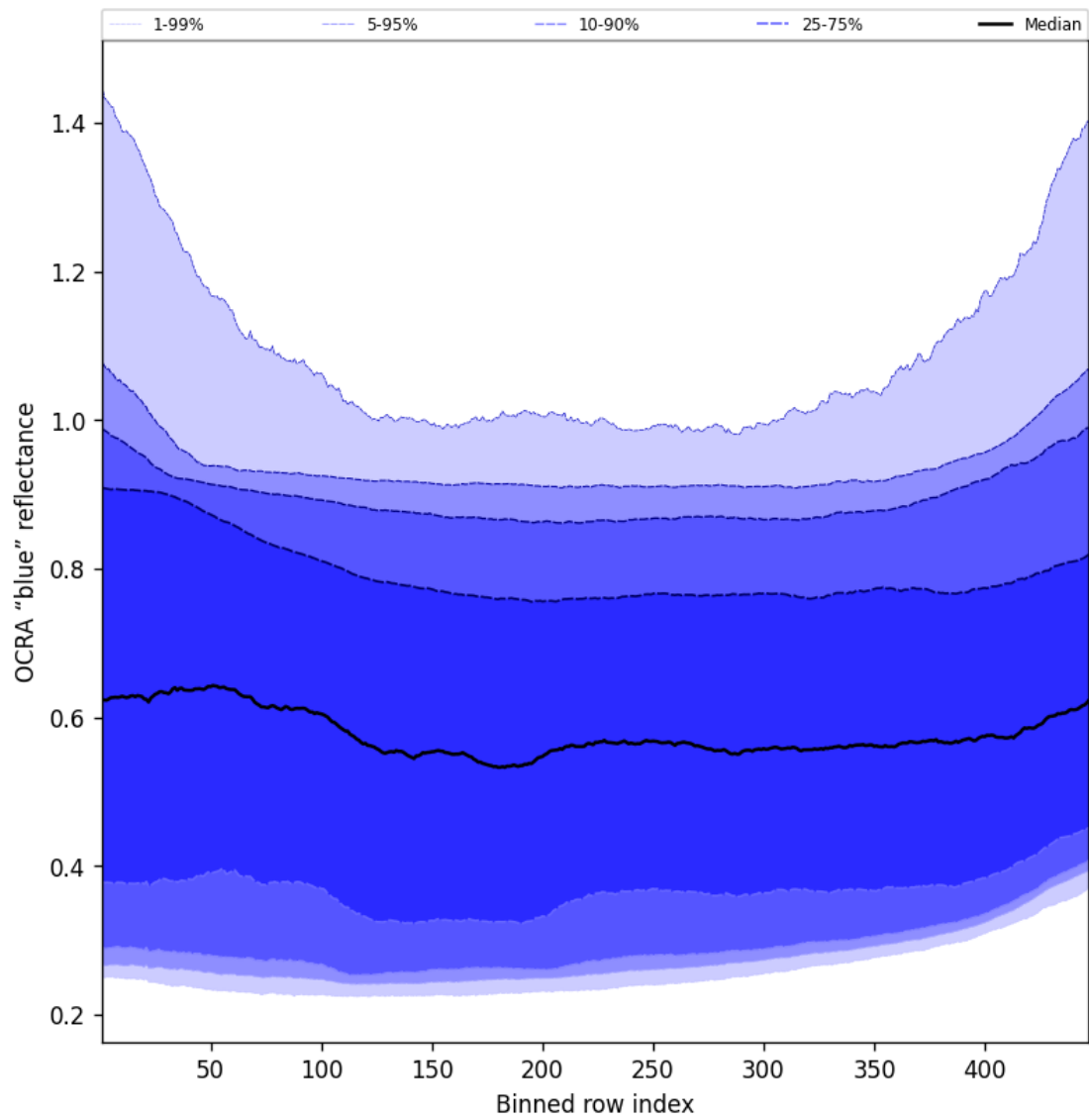


Figure 65: Along track statistics of "OCRA "blue" reflectance" for 2025-01-22 to 2025-01-23

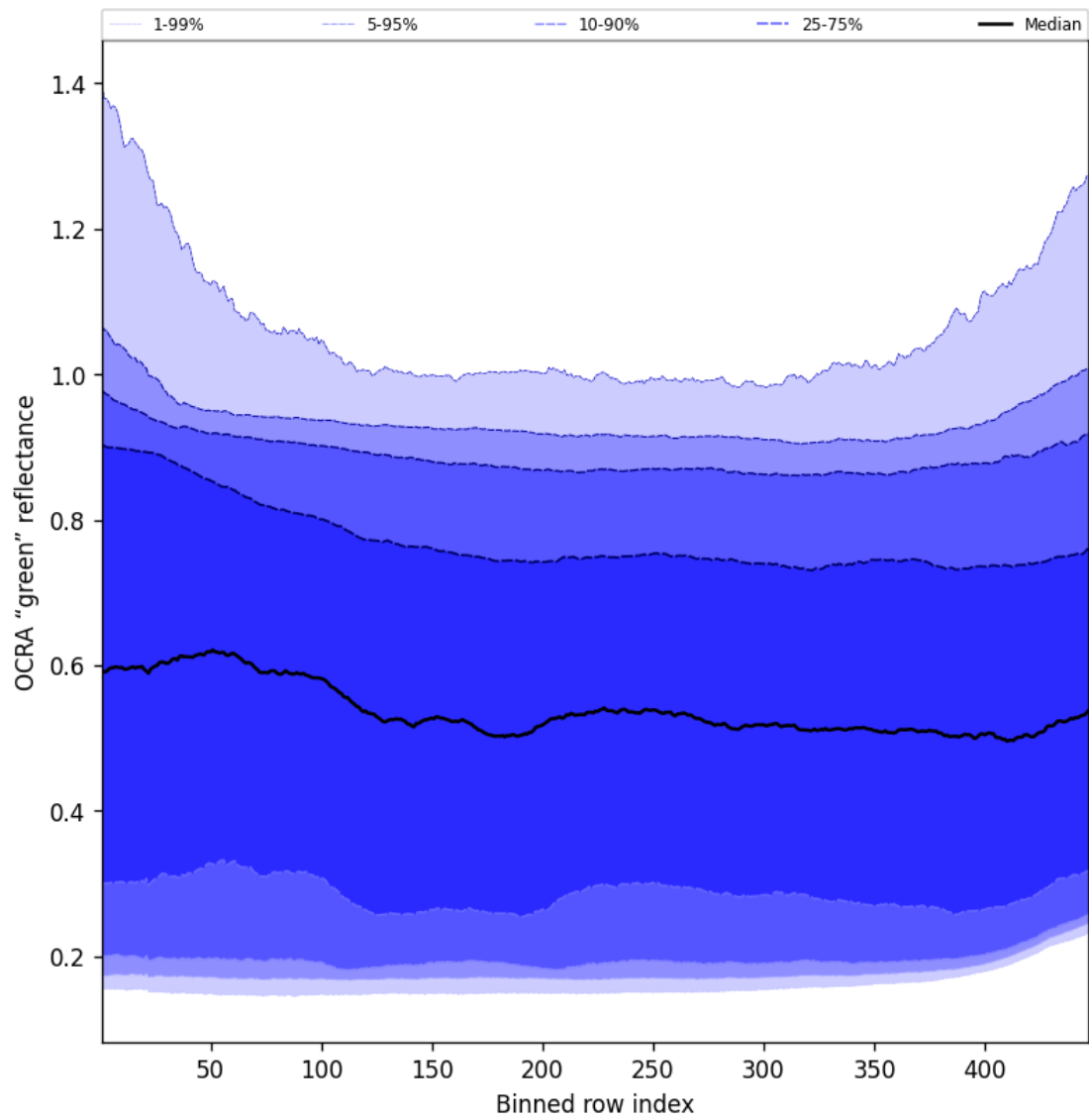


Figure 66: Along track statistics of “OCRA “green” reflectance” for 2025-01-22 to 2025-01-23

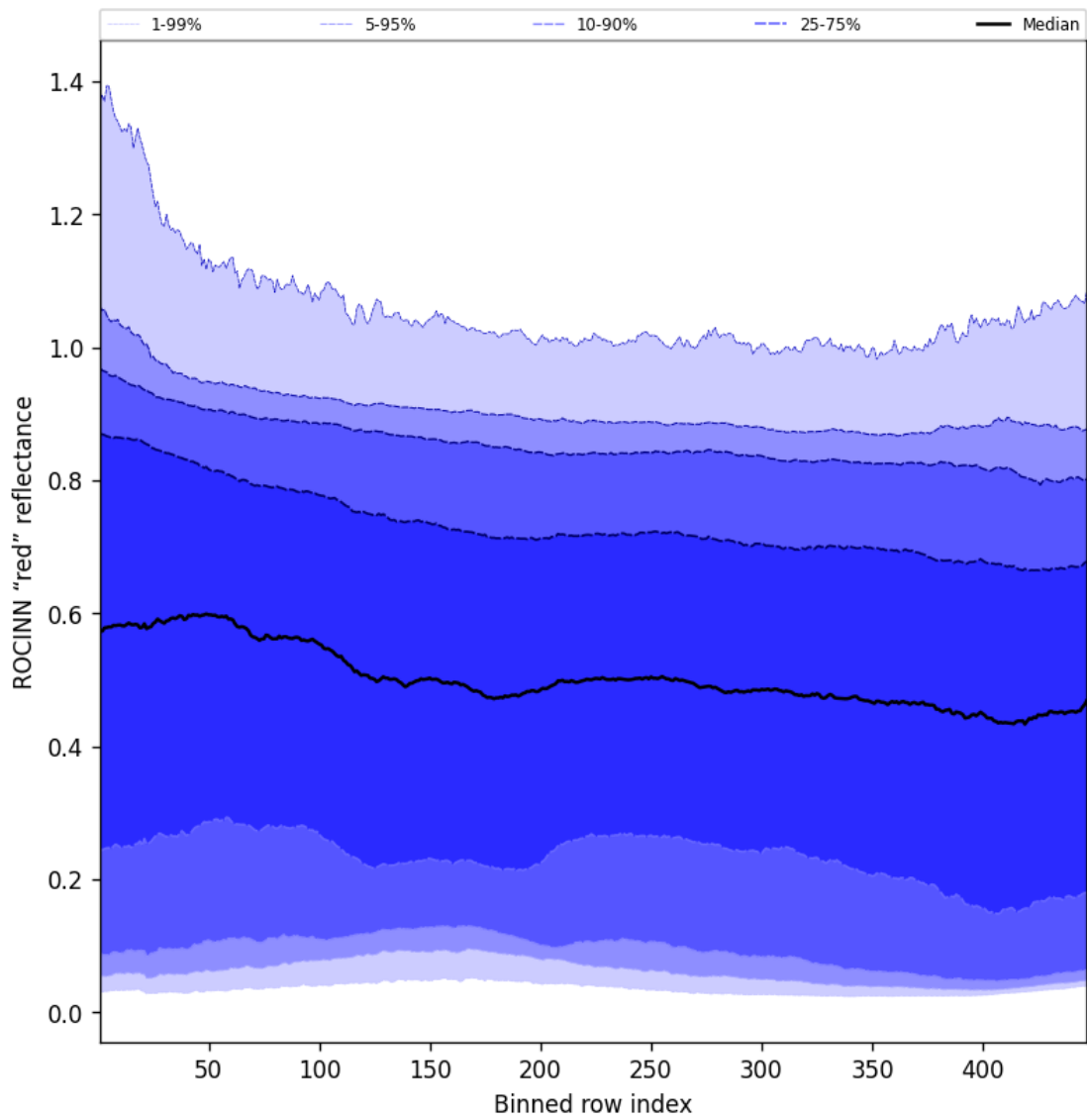


Figure 67: Along track statistics of “ROCINN “red” reflectance” for 2025-01-22 to 2025-01-23

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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