PyCAMA report generated by tropl2-proc

tropl2-proc

2024-12-29 (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]	0.595 ± 0.365	19146217	5.000×10^{-3}	0.600	0.700	0.0	1.000
cloud fraction [1]	0.566 ± 0.336	19146217	0.995	0.689	0.550	2.034×10^{-4}	1.000
cloud top height [m]	$(0.391 \pm 0.257) \times 10^4$	19146217	1.725×10^3	3.557×10^3	3.464×10^3	0.0	2.000×10^4
cloud optical thickness [1]	18.8 ± 35.0	19146217	9.34	10.2	9.02	1.000	250
cloud fraction crb [1]	0.566 ± 0.336	19146217	0.995	0.689	0.550	8.231×10^{-3}	1.000
cloud height crb [m]	$(0.295 \pm 0.221) \times 10^4$	19146217	75.0	2.930×10^3	2.541×10^3	0.0	2.000×10^4
cloud albedo crb [1]	0.615 ± 0.220	19146217	0.995	0.316	0.597	0.0	1.000
surface albedo fitted [1]	0.295 ± 0.350	19146217	2.500×10^{-2}	0.526	6.591×10^{-2}	0.0	1.000
surface albedo fitted crb [1]	0.282 ± 0.337	19146217	1.500×10^{-2}	0.538	5.340×10^{-2}	0.0	1.000
fitted root mean square [1]	$(7.914 \pm 10.646) \times 10^{-4}$	19146217	5.000×10^{-5}	9.921×10^{-4}	4.543×10^{-4}	8.505×10^{-7}	0.119
fitted root mean square crb [1]	$(6.912 \pm 8.183) \times 10^{-4}$	19146217	5.000×10^{-5}	9.474×10^{-4}	3.521×10^{-4}	7.856×10^{-7}	0.113
wavelength shift [nm]	$(8.535 \pm 7.187) \times 10^{-3}$	19146217	3.000×10^{-4}	1.078×10^{-2}	8.103×10^{-3}	-4.887×10^{-2}	6.871×10^{-2}
cloud fraction apriori [1]	0.576 ± 0.341	19146217	0.995	0.727	0.571	0.0	1.000
reflectance blue ocra [1]	0.592 ± 0.236	19146217	0.905	0.422	0.576	0.139	1.99
reflectance green ocra [1]	0.545 ± 0.267	19146217	0.185	0.493	0.535	8.125×10^{-2}	2.00
reflectance continuum aband [1]	0.496 ± 0.293	19146217	4.500×10^{-2}	0.507	0.493	1.218×10^{-2}	4.38

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	0.980	1.000	1.000	1.000
cloud fraction [1]	2.800×10^{-2}	7.132×10^{-2}	0.109	0.160	0.255	0.944	1.000	1.000	1.000	1.000
cloud top height [m]	254	711	1.062×10^{3}	1.395×10^{3}	1.848×10^{3}	5.404×10^{3}	6.441×10^{3}	7.475×10^{3}	8.899×10^{3}	1.138×10^{4}
cloud optical thickness [1]	1.000	2.49	3.63	4.54	5.44	15.6	23.5	35.5	65.1	250
cloud fraction crb [1]	2.759×10^{-2}	7.075×10^{-2}	0.109	0.159	0.254	0.943	1.000	1.000	1.000	1.000
cloud height crb [m]	0.0	198	515	807	1.196×10^{3}	4.126×10^{3}	5.154×10^{3}	6.081×10^{3}	7.329×10^{3}	9.454×10^{3}
cloud albedo crb [1]	2.540×10^{-2}	0.250	0.365	0.423	0.469	0.785	0.869	0.923	0.985	1.000
surface albedo fitted [1]	0.0	8.670×10^{-3}	1.449×10^{-2}	1.955×10^{-2}	2.701×10^{-2}	0.553	0.840	0.925	0.967	1.000
surface albedo fitted crb [1]	0.0	6.623×10^{-3}	1.059×10^{-2}	1.449×10^{-2}	2.050×10^{-2}	0.558	0.807	0.867	0.907	0.951
fitted root mean square [1]	1.508×10^{-5}	2.968×10^{-5}	4.905×10^{-5}	7.961×10^{-5}	1.403×10^{-4}	1.132×10^{-3}	1.594×10^{-3}	2.016×10^{-3}	2.555×10^{-3}	3.692×10^{-3}
fitted root mean square crb [1]	7.594×10^{-6}	1.758×10^{-5}	3.058×10^{-5}	4.937×10^{-5}	8.997×10^{-5}	1.037×10^{-3}	1.480×10^{-3}	1.880×10^{-3}	2.398×10^{-3}	3.412×10^{-3}
wavelength shift [nm]	-7.011×10^{-3}	-5.670×10^{-4}	2.135×10^{-4}	1.099×10^{-3}	2.808×10^{-3}	1.359×10^{-2}	1.592×10^{-2}	1.788×10^{-2}	2.044×10^{-2}	2.620×10^{-2}
cloud fraction apriori [1]	3.304×10^{-2}	6.800×10^{-2}	0.105	0.156	0.258	0.985	1.000	1.000	1.000	1.000
reflectance blue ocra [1]	0.234	0.260	0.287	0.322	0.380	0.801	0.873	0.909	0.943	1.06
reflectance green ocra [1]	0.153	0.176	0.198	0.229	0.291	0.784	0.865	0.907	0.943	1.04
reflectance continuum aband [1]	3.054×10^{-2}	5.695×10^{-2}	9.460×10^{-2}	0.145	0.241	0.748	0.834	0.879	0.922	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]	0.546 ± 0.400	7104202	0.870	0.660	0.0	1.000	3.000×10^{-2}	0.900
cloud fraction [1]	0.536 ± 0.340	7104202	0.684	0.506	2.034×10^{-4}	1.000	0.215	0.899
cloud top height [m]	$(0.421 \pm 0.266) \times 10^4$	7104202	3.887×10^3	3.726×10^3	0.0	2.000×10^4	2.027×10^3	5.914×10^3
cloud optical thickness [1]	27.4 ± 46.9	7104202	17.4	10.5	1.000	250	6.23	23.6
cloud fraction crb [1]	0.535 ± 0.340	7104202	0.682	0.502	8.512×10^{-3}	1.000	0.214	0.896
cloud height crb [m]	$(0.350 \pm 0.228) \times 10^4$	7104202	3.459×10^3	3.170×10^3	0.0	2.000×10^4	1.589×10^3	5.048×10^3
cloud albedo crb [1]	0.597 ± 0.208	7104202	0.265	0.584	0.0	1.000	0.469	0.734
surface albedo fitted [1]	0.177 ± 0.199	7104202	0.260	6.457×10^{-2}	0.0	1.000	3.049×10^{-2}	0.290
surface albedo fitted crb [1]	0.168 ± 0.197	7104202	0.260	5.274×10^{-2}	0.0	1.000	2.217×10^{-2}	0.282
fitted root mean square [1]	$(4.230 \pm 5.870) \times 10^{-4}$	7104202	4.340×10^{-4}	2.296×10^{-4}	8.505×10^{-7}	9.579×10^{-2}	8.942×10^{-5}	5.234×10^{-4}
fitted root mean square crb [1]	$(3.458 \pm 5.211) \times 10^{-4}$	7104202	3.678×10^{-4}	1.382×10^{-4}	7.856×10^{-7}	3.857×10^{-2}	4.657×10^{-5}	4.143×10^{-4}
wavelength shift [nm]	$(6.171 \pm 6.484) \times 10^{-3}$	7104202	8.905×10^{-3}	4.943×10^{-3}	-4.453×10^{-2}	6.290×10^{-2}	1.215×10^{-3}	1.012×10^{-2}
cloud fraction apriori [1]	0.540 ± 0.345	7104202	0.712	0.511	0.0	1.000	0.210	0.922
reflectance blue ocra [1]	0.546 ± 0.210	7104202	0.316	0.522	0.151	1.97	0.374	0.689
reflectance green ocra [1]	0.488 ± 0.234	7104202	0.378	0.467	8.125×10^{-2}	2.00	0.282	0.660
reflectance continuum aband [1]	0.437 ± 0.270	7104202	0.403	0.414	1.339×10^{-2}	4.38	0.221	0.624

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]	0.625 ± 0.339	12042015	0.500	0.700	0.0	1.000	0.400	0.900
cloud fraction [1]	0.584 ± 0.333	12042015	0.682	0.575	6.703×10^{-3}	1.000	0.283	0.965
cloud top height [m]	$(0.374 \pm 0.250) \times 10^4$	12042015	3.382×10^3	3.327×10^3	0.0	2.000×10^4	1.757×10^3	5.139×10^3
cloud optical thickness [1]	13.6 ± 24.1	12042015	7.77	8.45	1.000	250	5.16	12.9
cloud fraction crb [1]	0.584 ± 0.333	12042015	0.683	0.576	8.231×10^{-3}	1.000	0.283	0.966
cloud height crb [m]	$(0.262 \pm 0.210) \times 10^4$	12042015	2.592×10^3	2.249×10^3	0.0	2.000×10^4	1.008×10^3	3.601×10^3
cloud albedo crb [1]	0.626 ± 0.225	12042015	0.347	0.608	0.0	1.000	0.469	0.816
surface albedo fitted [1]	0.365 ± 0.398	12042015	0.811	6.731×10^{-2}	0.0	1.000	2.495×10^{-2}	0.835
surface albedo fitted crb [1]	0.349 ± 0.381	12042015	0.784	5.398×10^{-2}	0.0	1.000	1.948×10^{-2}	0.804
fitted root mean square [1]	$(1.009 \pm 1.213) \times 10^{-3}$	12042015	1.271×10^{-3}	7.205×10^{-4}	1.156×10^{-6}	0.119	2.223×10^{-4}	1.494×10^{-3}
fitted root mean square crb [1]	$(8.950 \pm 8.902) \times 10^{-4}$	12042015	1.212×10^{-3}	6.228×10^{-4}	1.079×10^{-6}	0.113	1.680×10^{-4}	1.380×10^{-3}
wavelength shift [nm]	$(9.929 \pm 7.217) \times 10^{-3}$	12042015	1.036×10^{-2}	1.012×10^{-2}	-4.887×10^{-2}	6.871×10^{-2}	4.571×10^{-3}	1.494×10^{-2}
cloud fraction apriori [1]	0.598 ± 0.337	12042015	0.707	0.604	0.0	1.000	0.293	1.000
reflectance blue ocra [1]	0.620 ± 0.246	12042015	0.468	0.632	0.139	1.99	0.384	0.852
reflectance green ocra [1]	0.579 ± 0.278	12042015	0.545	0.601	8.344×10^{-2}	1.81	0.299	0.844
reflectance continuum aband [1]	0.530 ± 0.300	12042015	0.548	0.561	1.218×10^{-2}	3.98	0.258	0.806

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]	0.682 ± 0.340	11643729	0.550	0.850	0.0	1.000	0.400	0.950
cloud fraction [1]	0.590 ± 0.358	11643729	0.772	0.616	6.703×10^{-3}	1.000	0.228	1.000
cloud top height [m]	$(0.348 \pm 0.256) \times 10^4$	11643729	3.217×10^3	2.715×10^3	0.0	2.000×10^4	1.574×10^3	4.792×10^3
cloud optical thickness [1]	17.2 ± 27.2	11643729	9.43	9.90	1.000	250	6.77	16.2
cloud fraction crb [1]	0.589 ± 0.358	11643729	0.773	0.614	8.231×10^{-3}	1.000	0.226	1.000
cloud height crb [m]	$(0.274 \pm 0.230) \times 10^4$	11643729	2.934×10^3	2.060×10^3	0.0	2.000×10^4	993	3.927×10^3
cloud albedo crb [1]	0.553 ± 0.178	11643729	0.218	0.534	0.0	1.000	0.450	0.668
surface albedo fitted [1]	0.100 ± 0.194	11643729	3.406×10^{-2}	3.198×10^{-2}	0.0	1.000	1.909×10^{-2}	5.315×10^{-2}
surface albedo fitted crb [1]	$(9.623 \pm 19.880) \times 10^{-2}$	11643729	2.846×10^{-2}	2.466×10^{-2}	0.0	1.000	1.412×10^{-2}	4.258×10^{-2}
fitted root mean square [1]	$(7.181 \pm 11.574) \times 10^{-4}$	11643729	9.351×10^{-4}	3.135×10^{-4}	8.505×10^{-7}	0.119	9.317×10^{-5}	1.028×10^{-3}
fitted root mean square crb [1]	$(6.600 \pm 8.388) \times 10^{-4}$	11643729	9.116×10^{-4}	2.772×10^{-4}	7.856×10^{-7}	0.113	7.261×10^{-5}	9.842×10^{-4}
wavelength shift [nm]	$(7.934 \pm 7.479) \times 10^{-3}$	11643729	1.080×10^{-2}	7.106×10^{-3}	-4.887×10^{-2}	6.830×10^{-2}	2.201×10^{-3}	1.300×10^{-2}
cloud fraction apriori [1]	0.593 ± 0.364	11643729	0.780	0.622	0.0	1.000	0.220	1.000
reflectance blue ocra [1]	0.511 ± 0.200	11643729	0.316	0.474	0.162	1.99	0.342	0.658
reflectance green ocra [1]	0.450 ± 0.227	11643729	0.384	0.412	9.372×10^{-2}	1.83	0.244	0.628
reflectance continuum aband [1]	0.383 ± 0.263	11643729	0.452	0.352	1.218×10^{-2}	4.38	0.141	0.593

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]	0.472 ± 0.351	6222830	0.700	0.580	0.0	1.000	0.0	0.700
cloud fraction [1]	0.517 ± 0.289	6222830	0.459	0.487	2.034×10^{-4}	1.000	0.285	0.743
cloud top height [m]	$(0.457 \pm 0.239) \times 10^4$	6222830	2.850×10^3	4.465×10^3	0.0	2.000×10^4	2.956×10^3	5.806×10^3
cloud optical thickness [1]	17.4 ± 38.3	6222830	7.51	6.21	1.000	250	4.60	12.1
cloud fraction crb [1]	0.518 ± 0.290	6222830	0.459	0.489	8.492×10^{-3}	1.000	0.285	0.745
cloud height crb [m]	$(0.315 \pm 0.196) \times 10^4$	6222830	2.258×10^3	2.973×10^3	0.0	2.000×10^4	1.808×10^3	4.066×10^3
cloud albedo crb [1]	0.727 ± 0.239	6222830	0.338	0.792	0.0	1.000	0.579	0.916
surface albedo fitted [1]	0.650 ± 0.318	6222830	0.638	0.811	0.0	1.000	0.303	0.941
surface albedo fitted crb [1]	0.619 ± 0.296	6222830	0.581	0.783	0.0	1.000	0.299	0.880
fitted root mean square [1]	$(9.825 \pm 8.922) \times 10^{-4}$	6222830	1.052×10^{-3}	7.210×10^{-4}	1.784×10^{-6}	0.114	3.377×10^{-4}	1.390×10^{-3}
fitted root mean square crb [1]	$(8.162 \pm 7.931) \times 10^{-4}$	6222830	1.023×10^{-3}	5.665×10^{-4}	2.207×10^{-6}	4.961×10^{-2}	1.953×10^{-4}	1.218×10^{-3}
wavelength shift [nm]	$(1.020 \pm 0.643) \times 10^{-2}$	6222830	9.575×10^{-3}	1.047×10^{-2}	-3.272×10^{-2}	6.378×10^{-2}	5.245×10^{-3}	1.482×10^{-2}
cloud fraction apriori [1]	0.542 ± 0.295	6222830	0.479	0.522	0.0	1.000	0.305	0.784
reflectance blue ocra [1]	0.733 ± 0.231	6222830	0.340	0.823	0.139	1.90	0.565	0.905
reflectance green ocra [1]	0.710 ± 0.256	6222830	0.383	0.815	8.125×10^{-2}	1.86	0.523	0.906
reflectance continuum aband [1]	0.693 ± 0.240	6222830	0.376	0.775	1.932×10^{-2}	4.24	0.500	0.876

3 Granule outlines

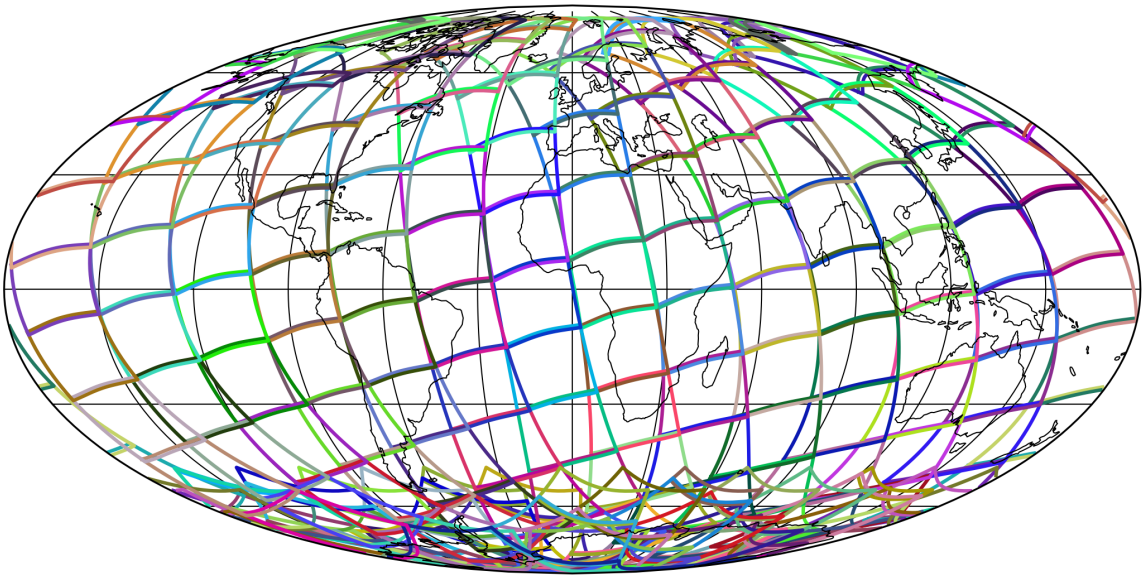

Figure 1: Outline of the granules.

4 Input data monitoring

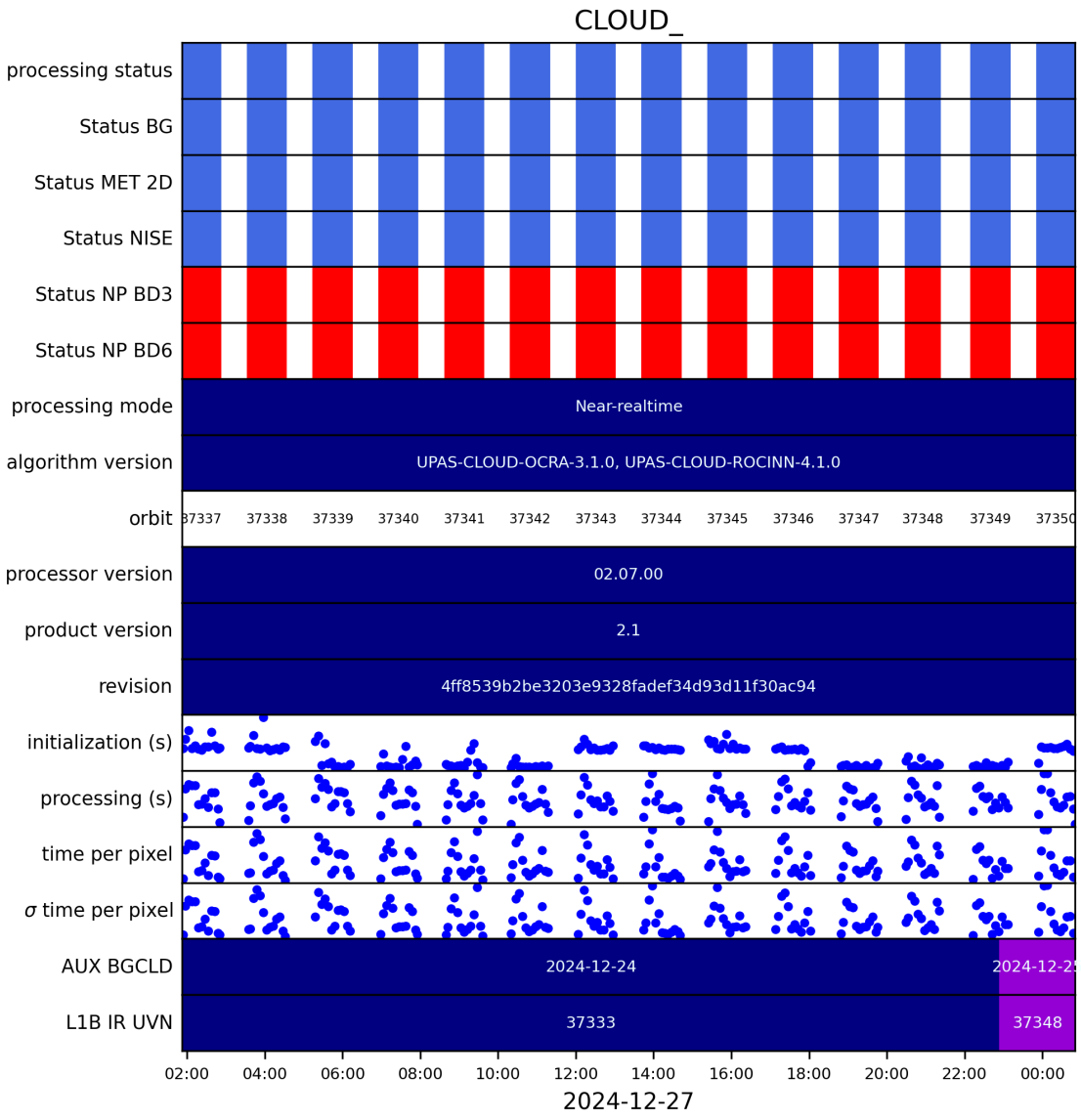

Figure 2: Input data per granule

5 Warnings and errors

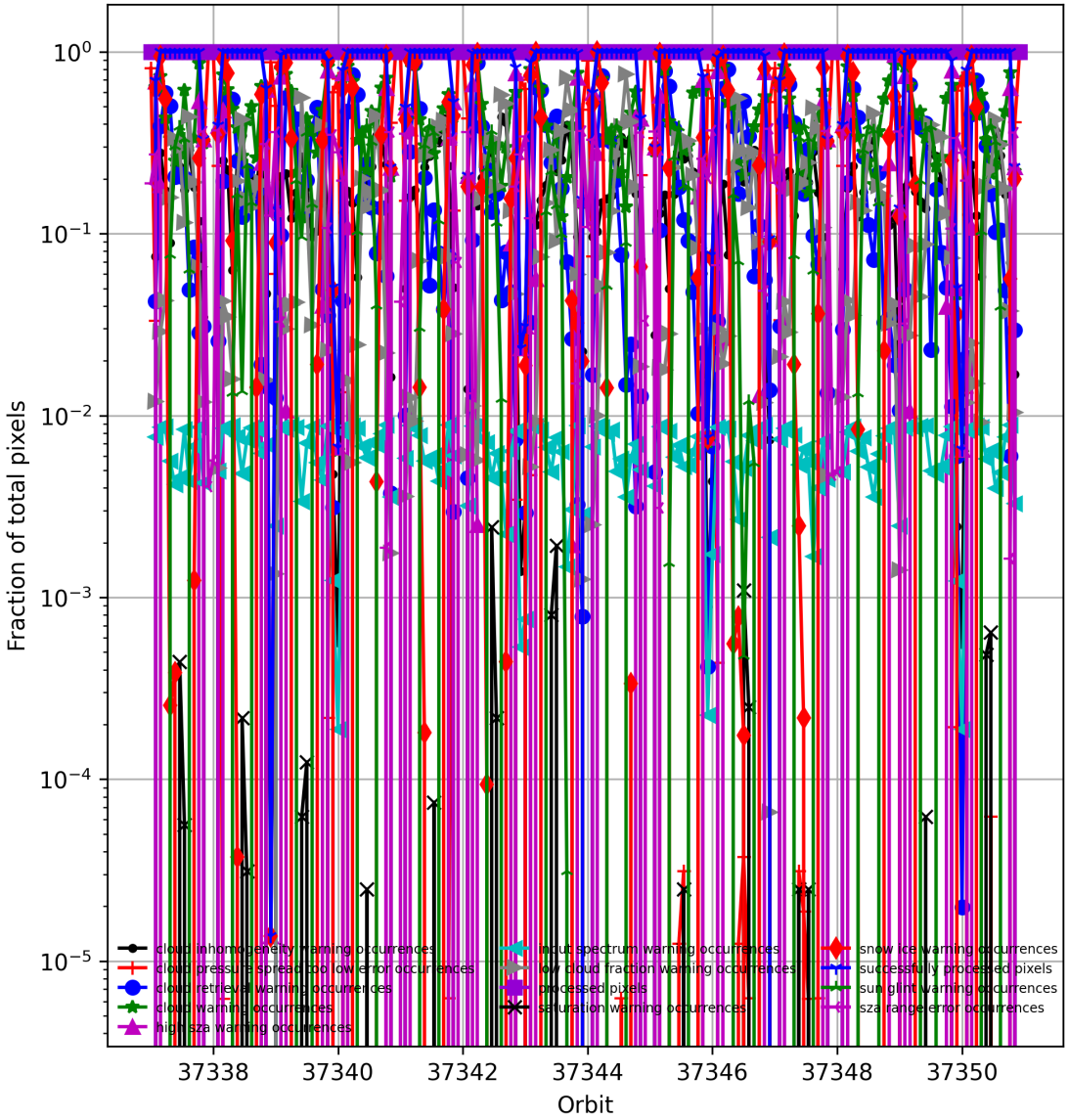

Figure 3: Fraction of pixels with specific warnings and errors during processing

6 World maps

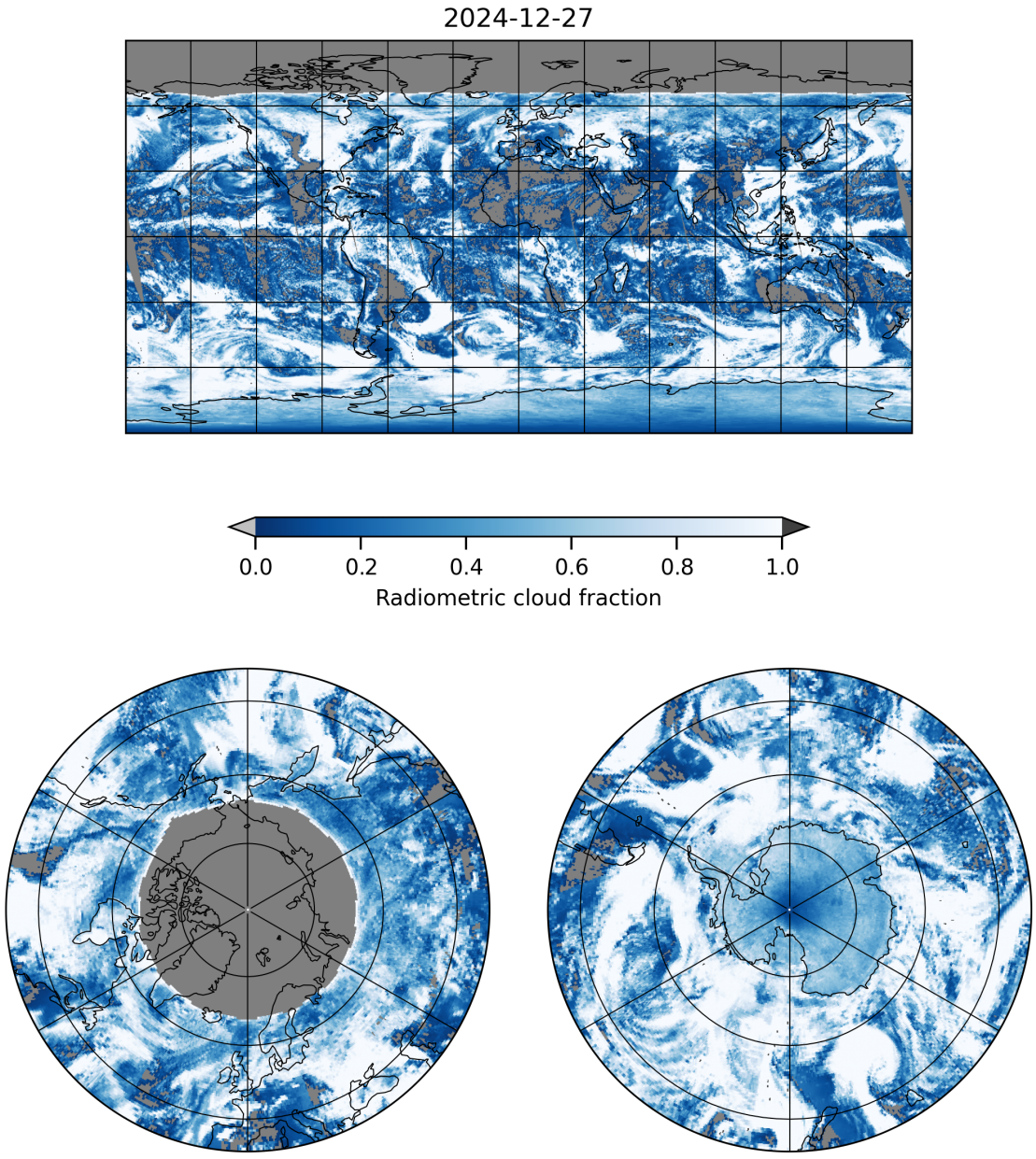

Figure 4: Map of “Radiometric cloud fraction” for 2024-12-27 to 2024-12-28

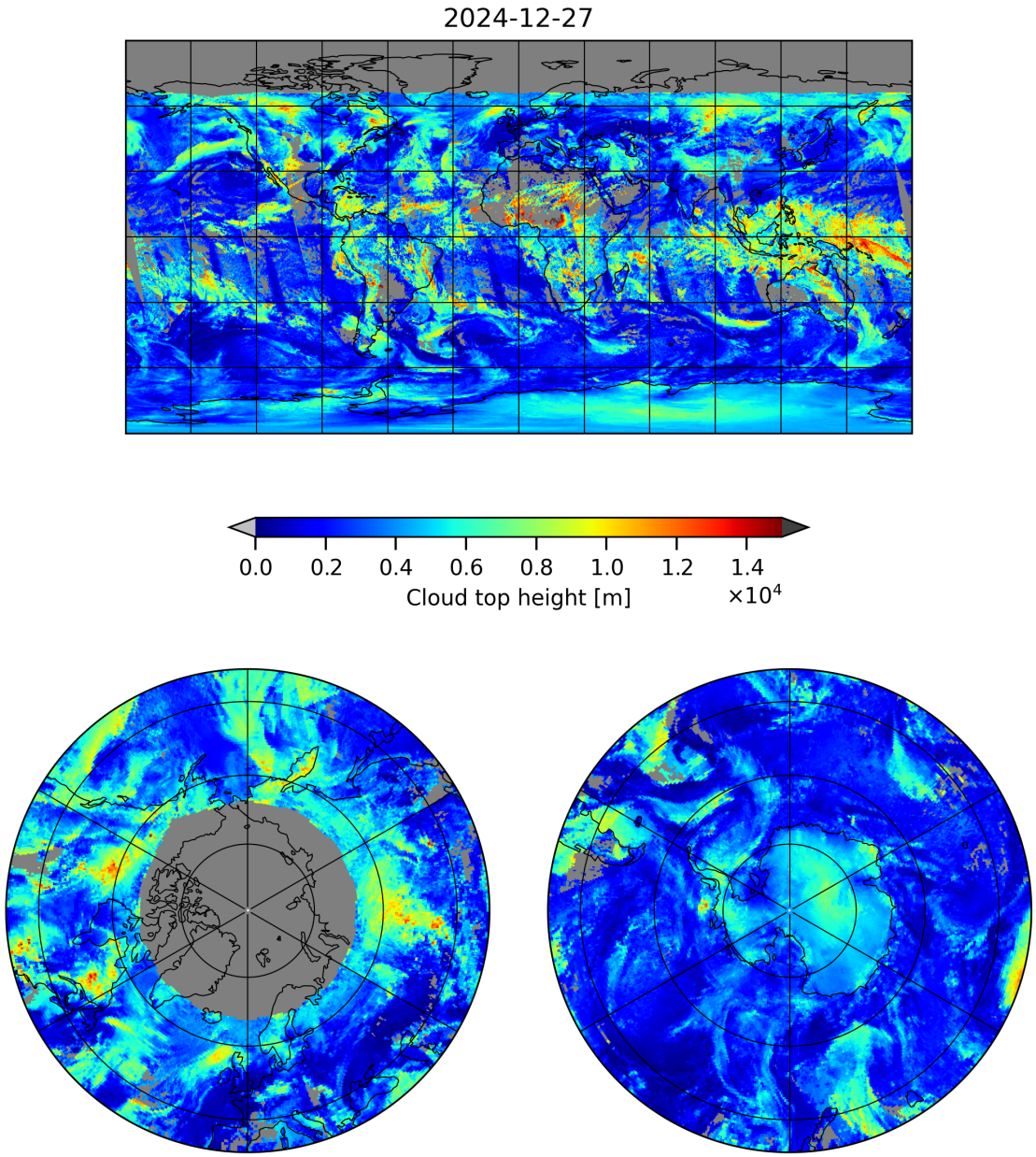

Figure 5: Map of “Cloud top height” for 2024-12-27 to 2024-12-28

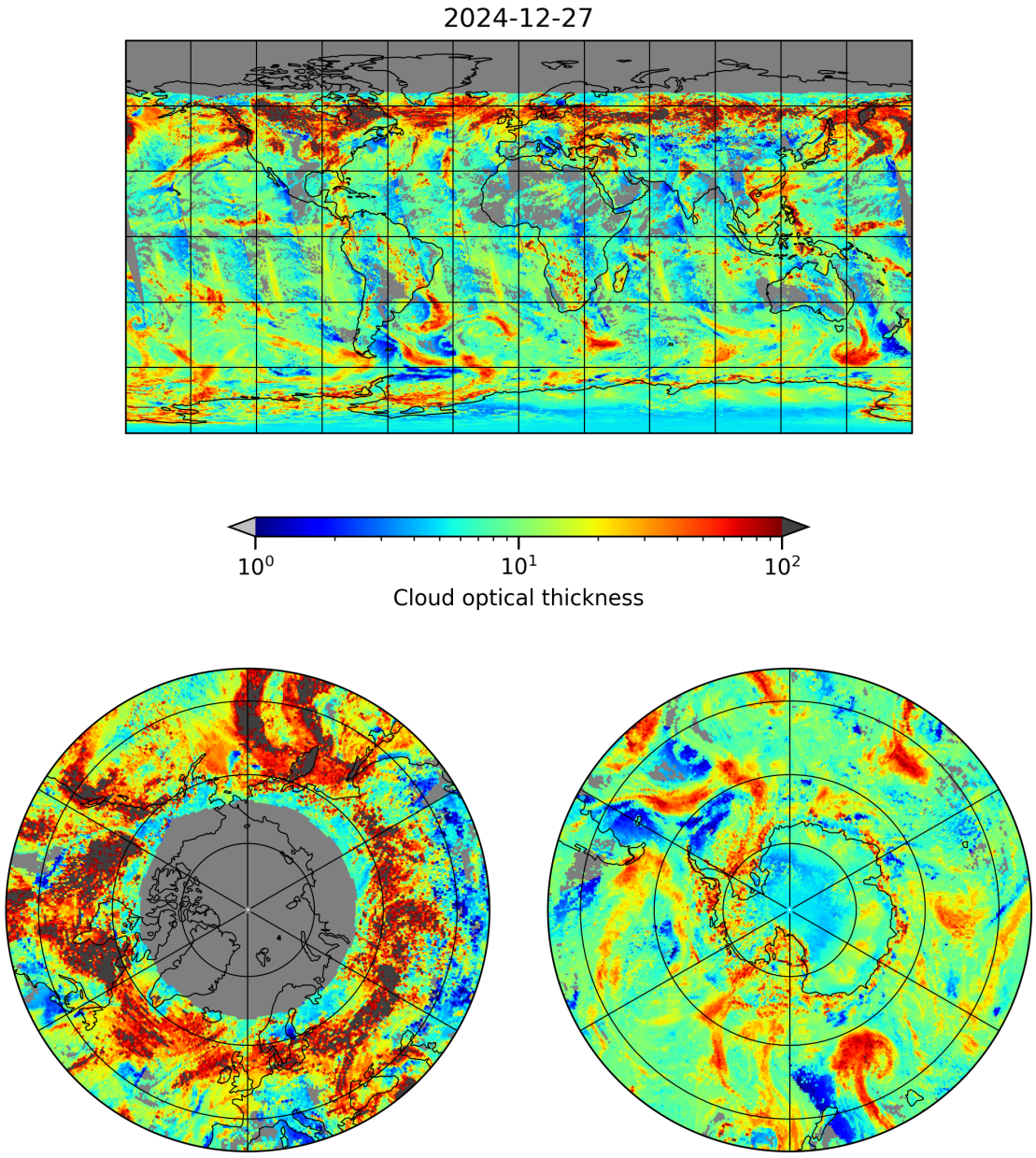

Figure 6: Map of “Cloud optical thickness” for 2024-12-27 to 2024-12-28

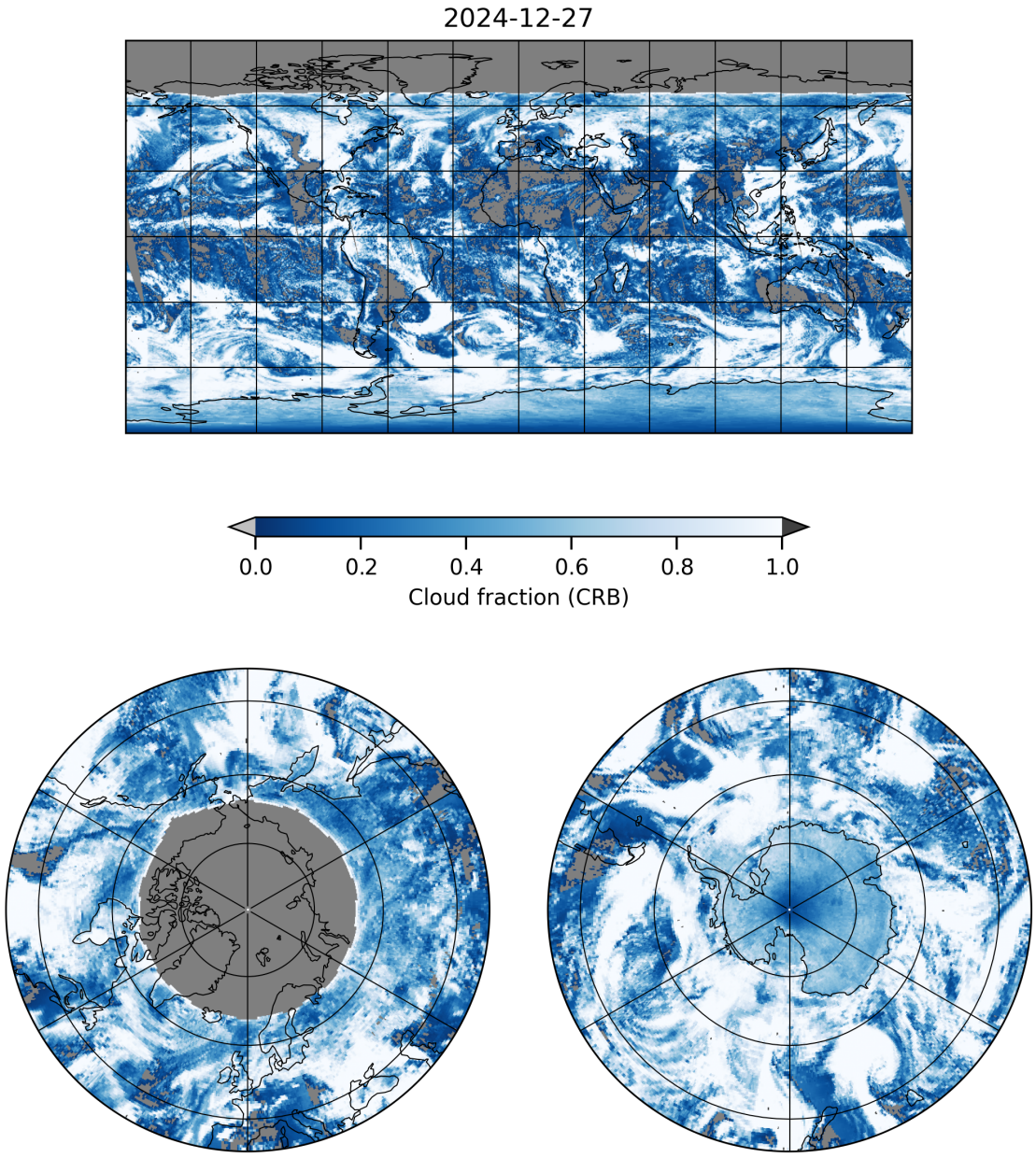

Figure 7: Map of “Cloud fraction (CRB)” for 2024-12-27 to 2024-12-28

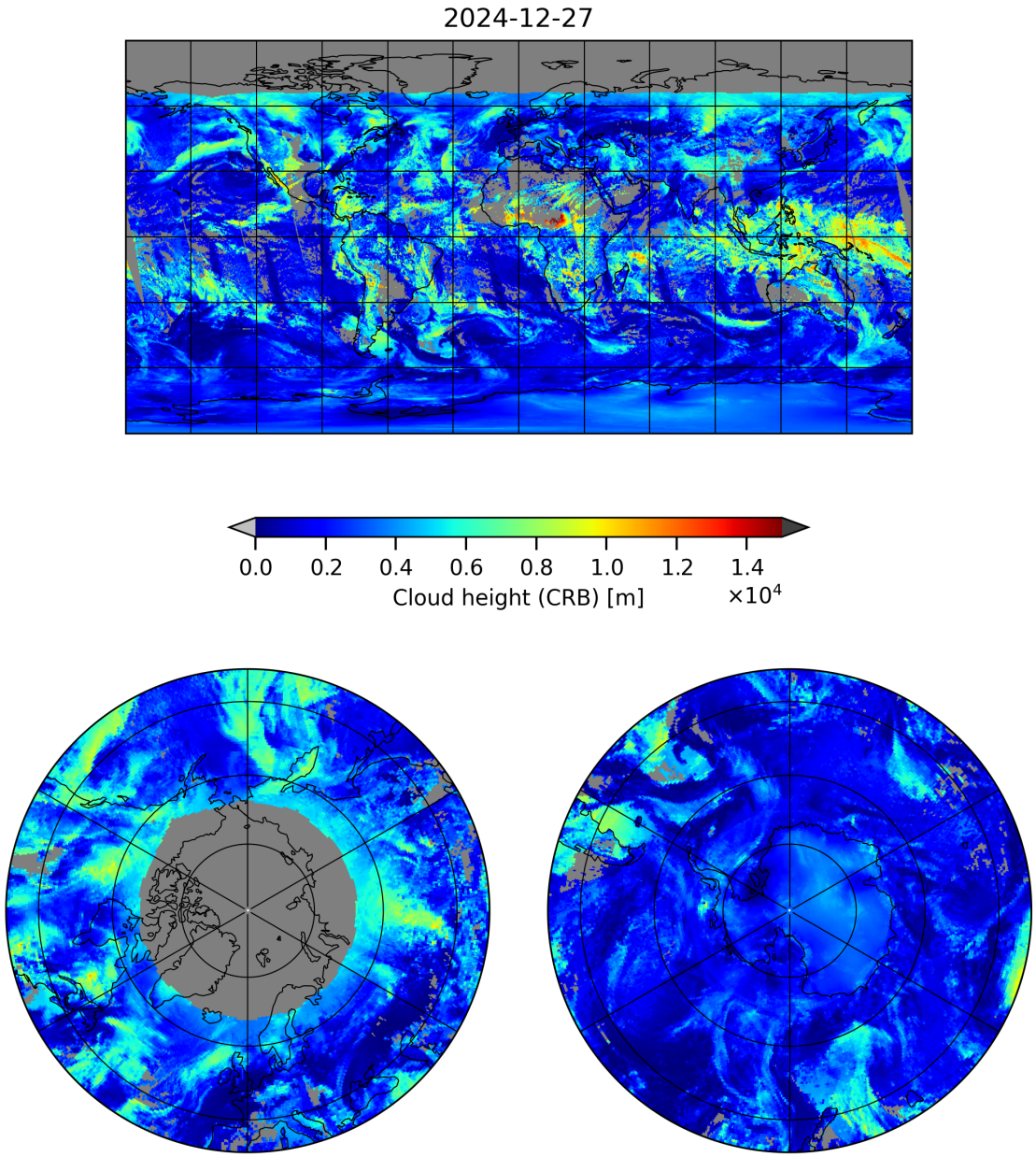

Figure 8: Map of “Cloud height (CRB)” for 2024-12-27 to 2024-12-28

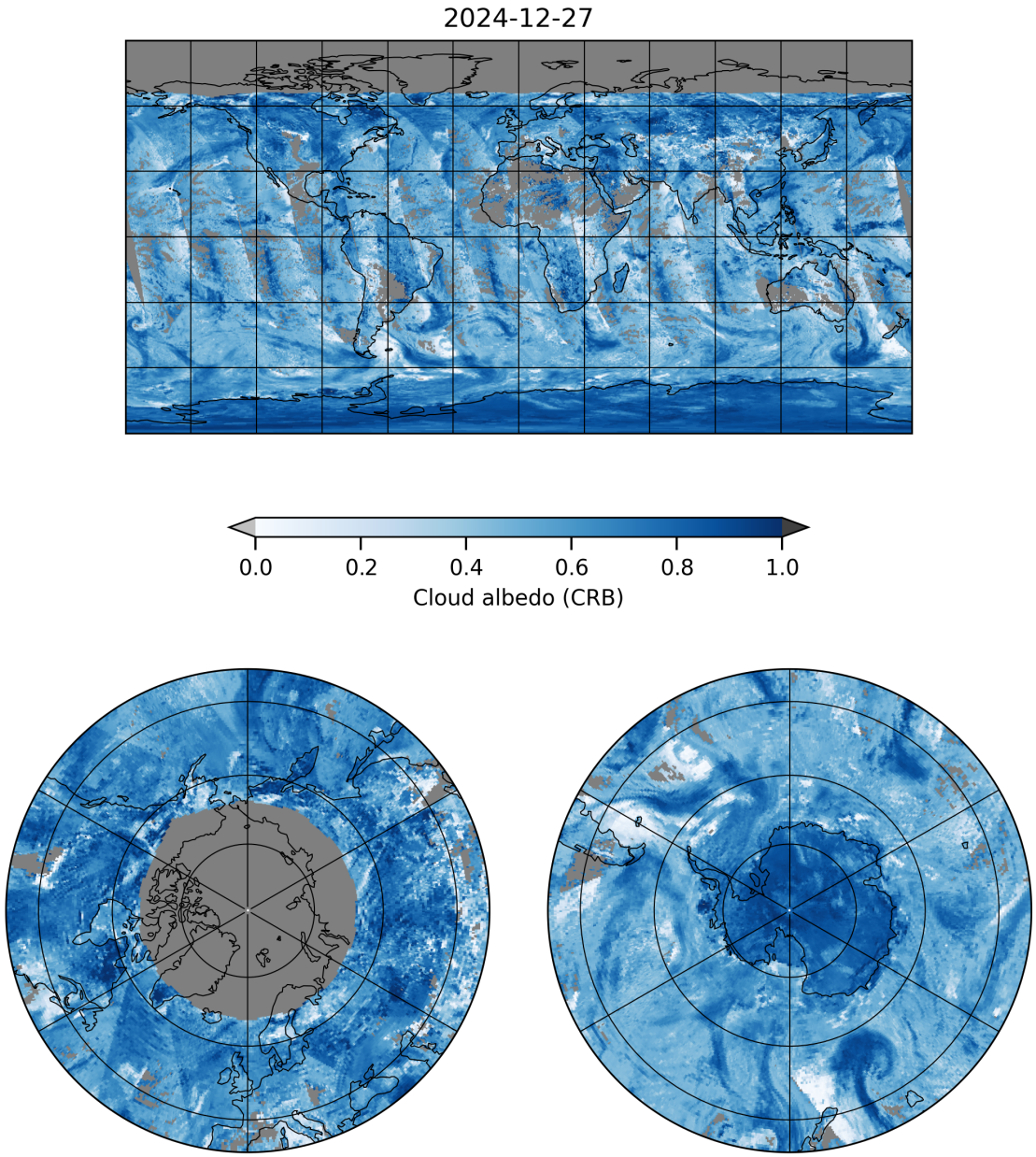

Figure 9: Map of “Cloud albedo (CRB)” for 2024-12-27 to 2024-12-28

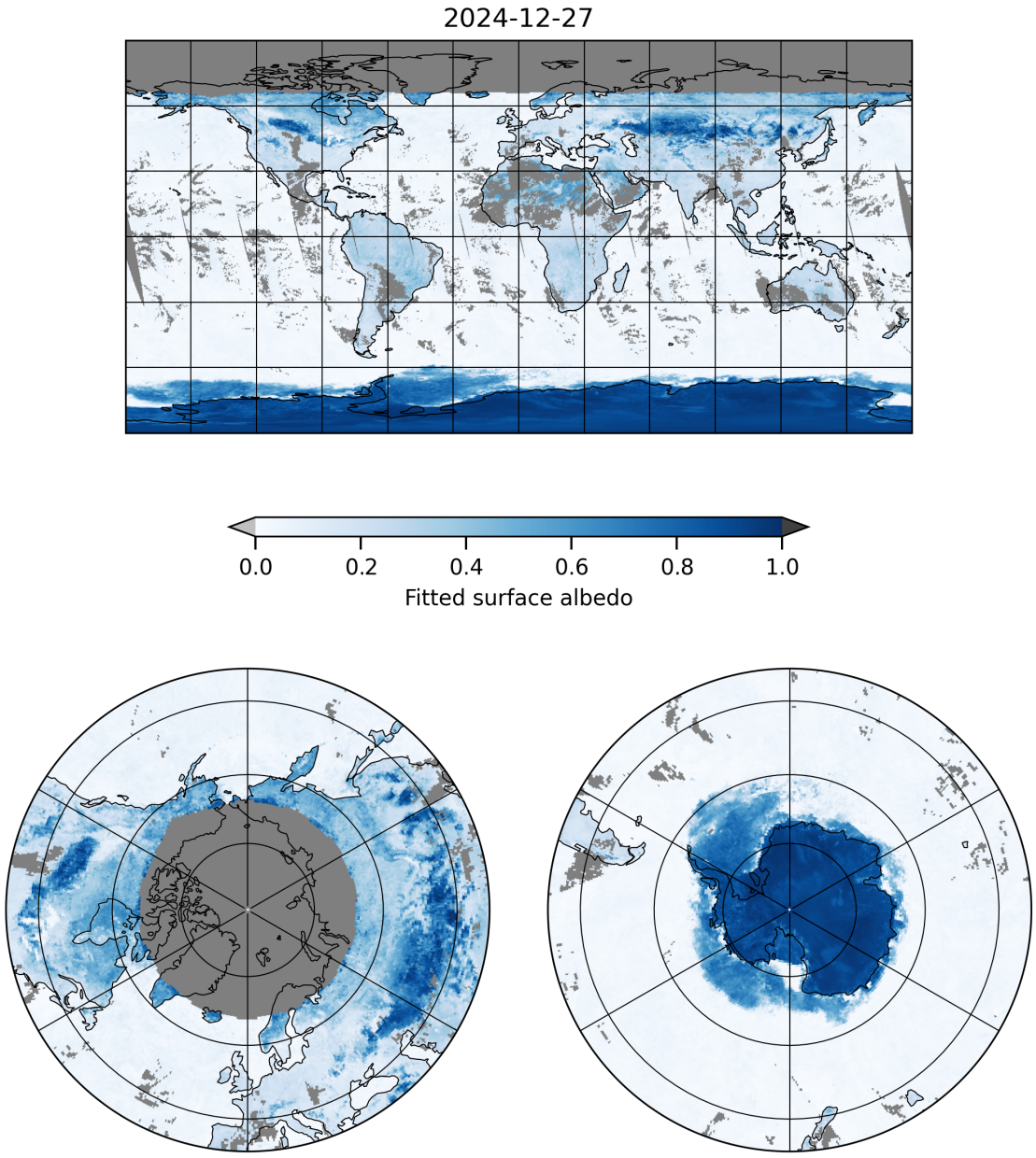

Figure 10: Map of “Fitted surface albedo” for 2024-12-27 to 2024-12-28

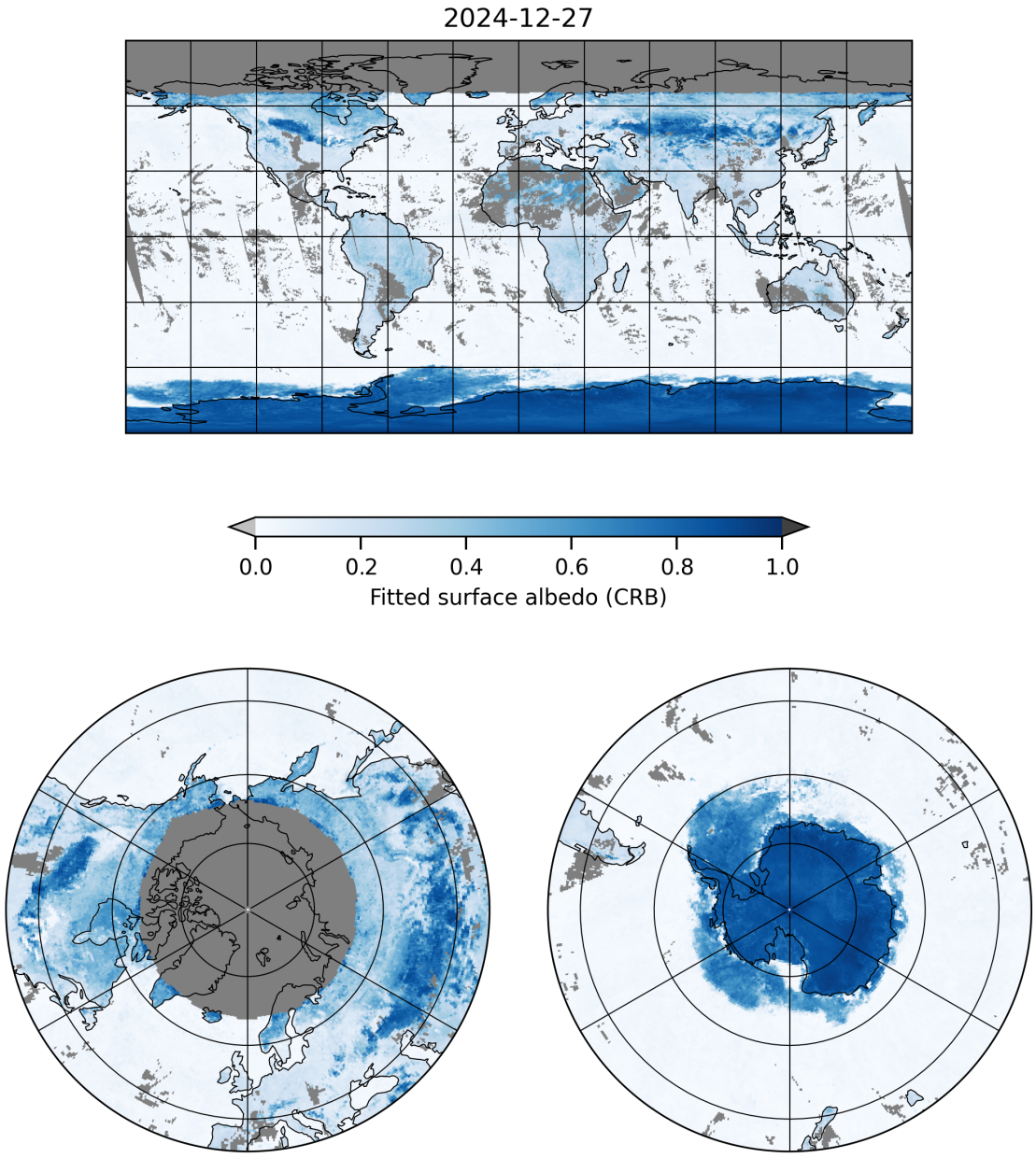

Figure 11: Map of “Fitted surface albedo (CRB)” for 2024-12-27 to 2024-12-28

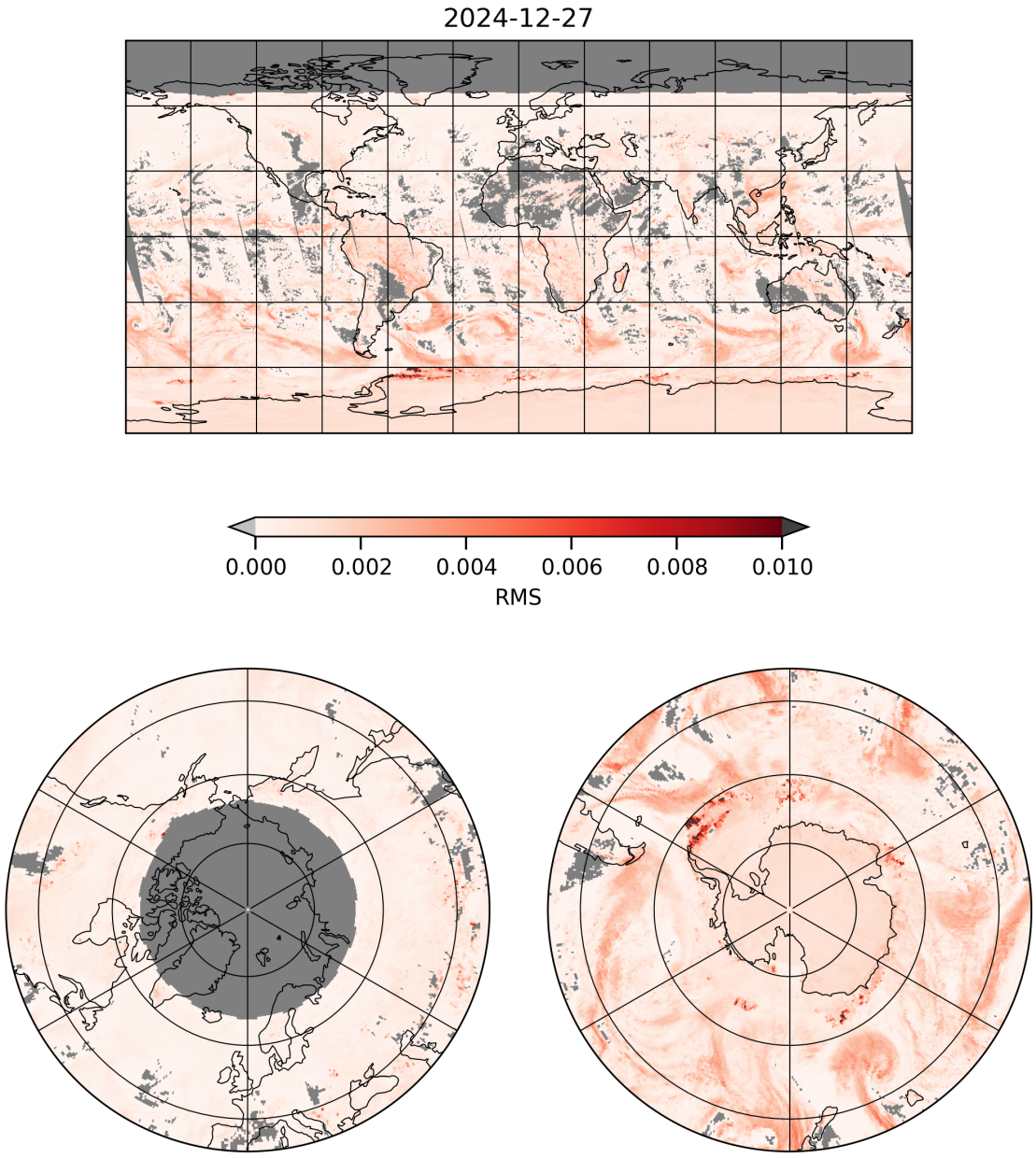

Figure 12: Map of “RMS” for 2024-12-27 to 2024-12-28

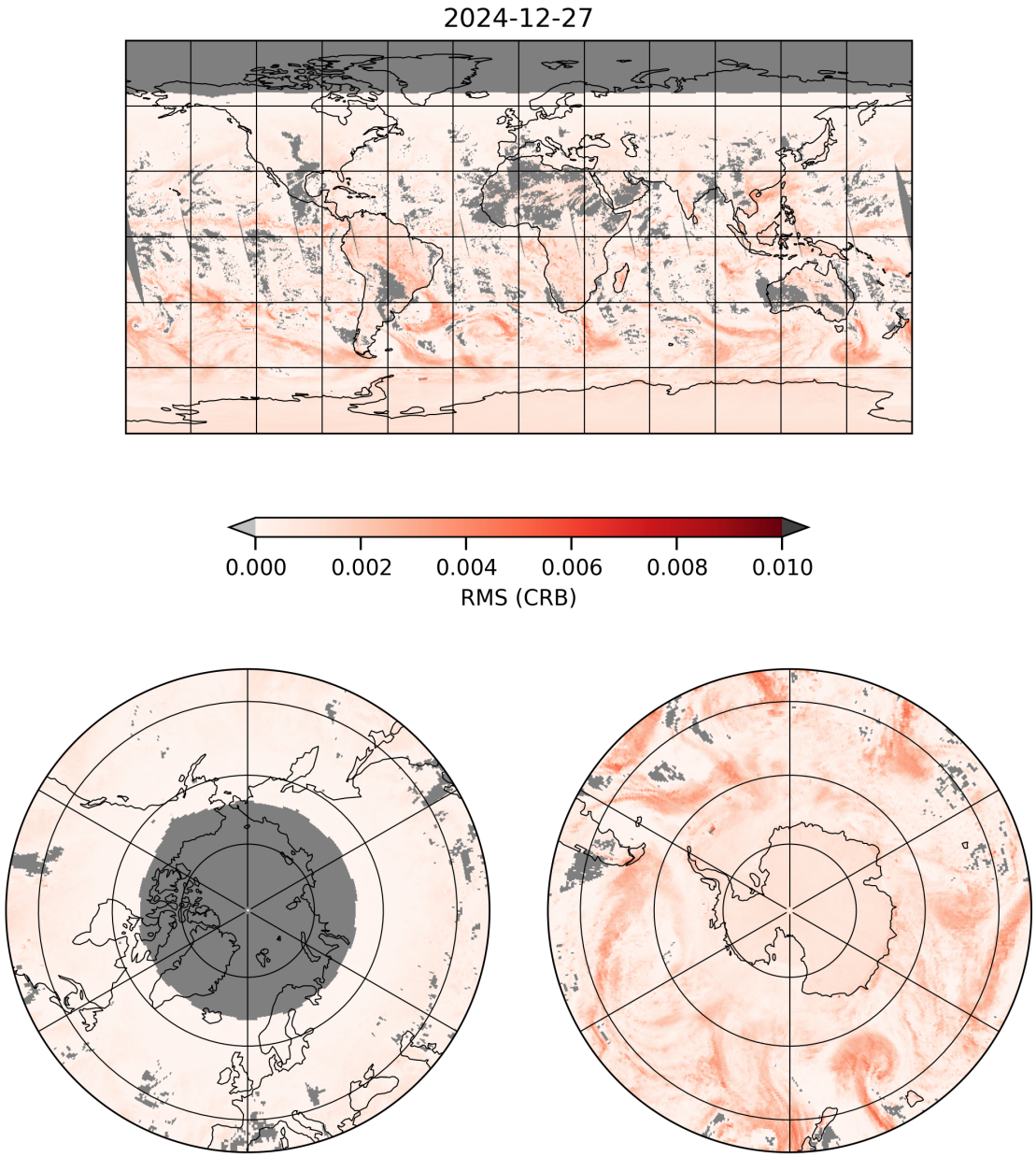

Figure 13: Map of “RMS (CRB)” for 2024-12-27 to 2024-12-28

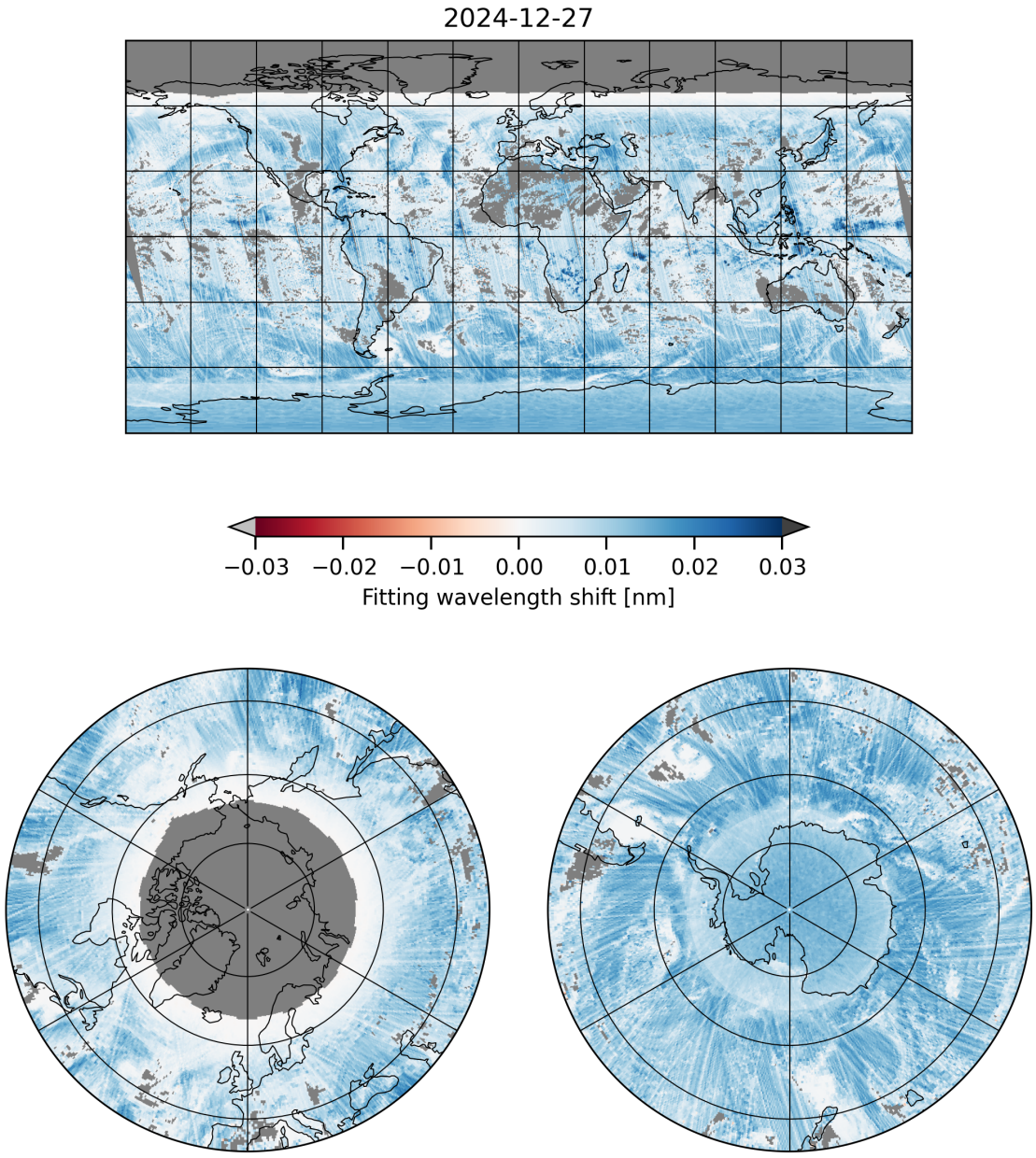

Figure 14: Map of “Fitting wavelength shift” for 2024-12-27 to 2024-12-28

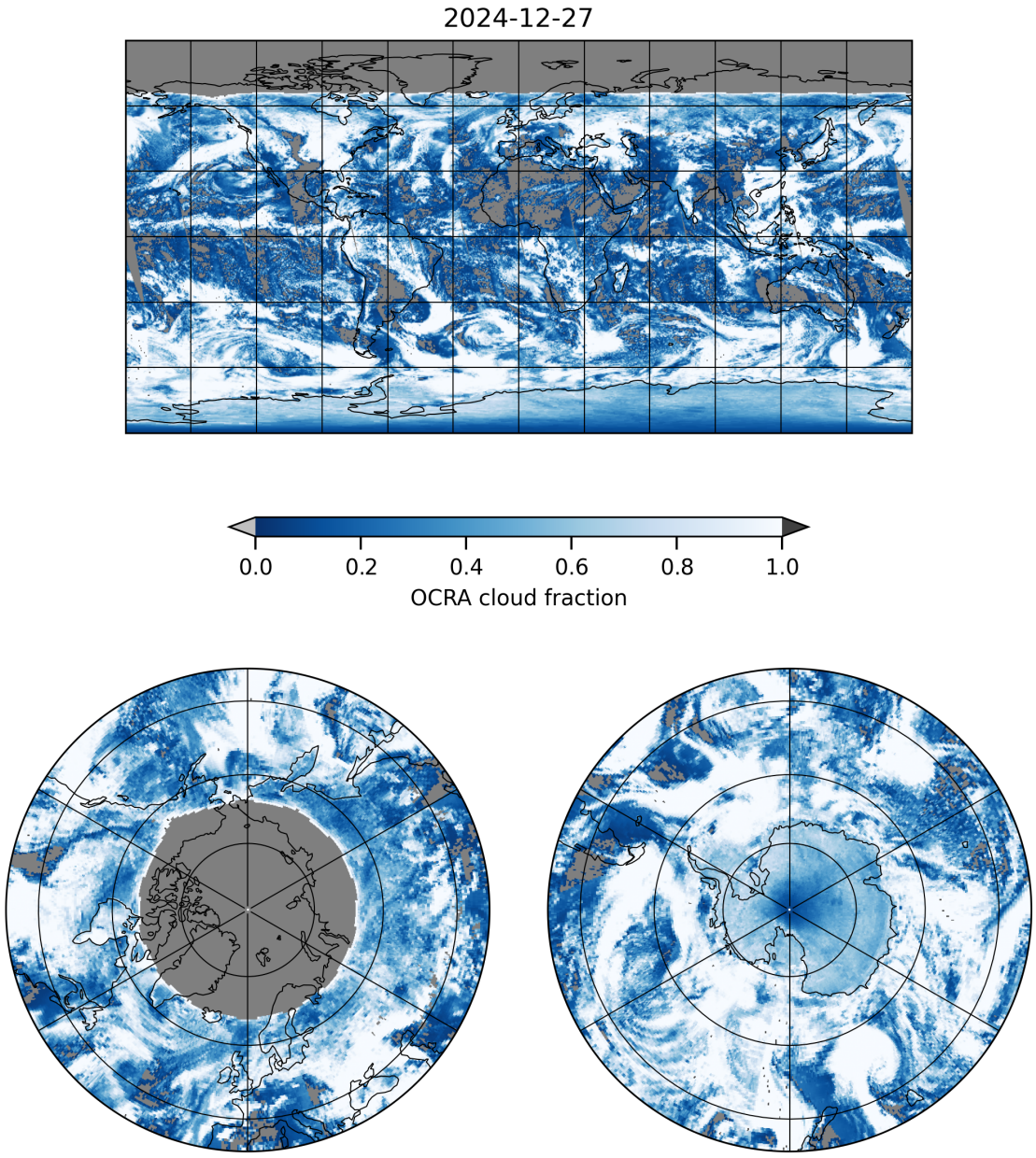

Figure 15: Map of “OCRA cloud fraction” for 2024-12-27 to 2024-12-28

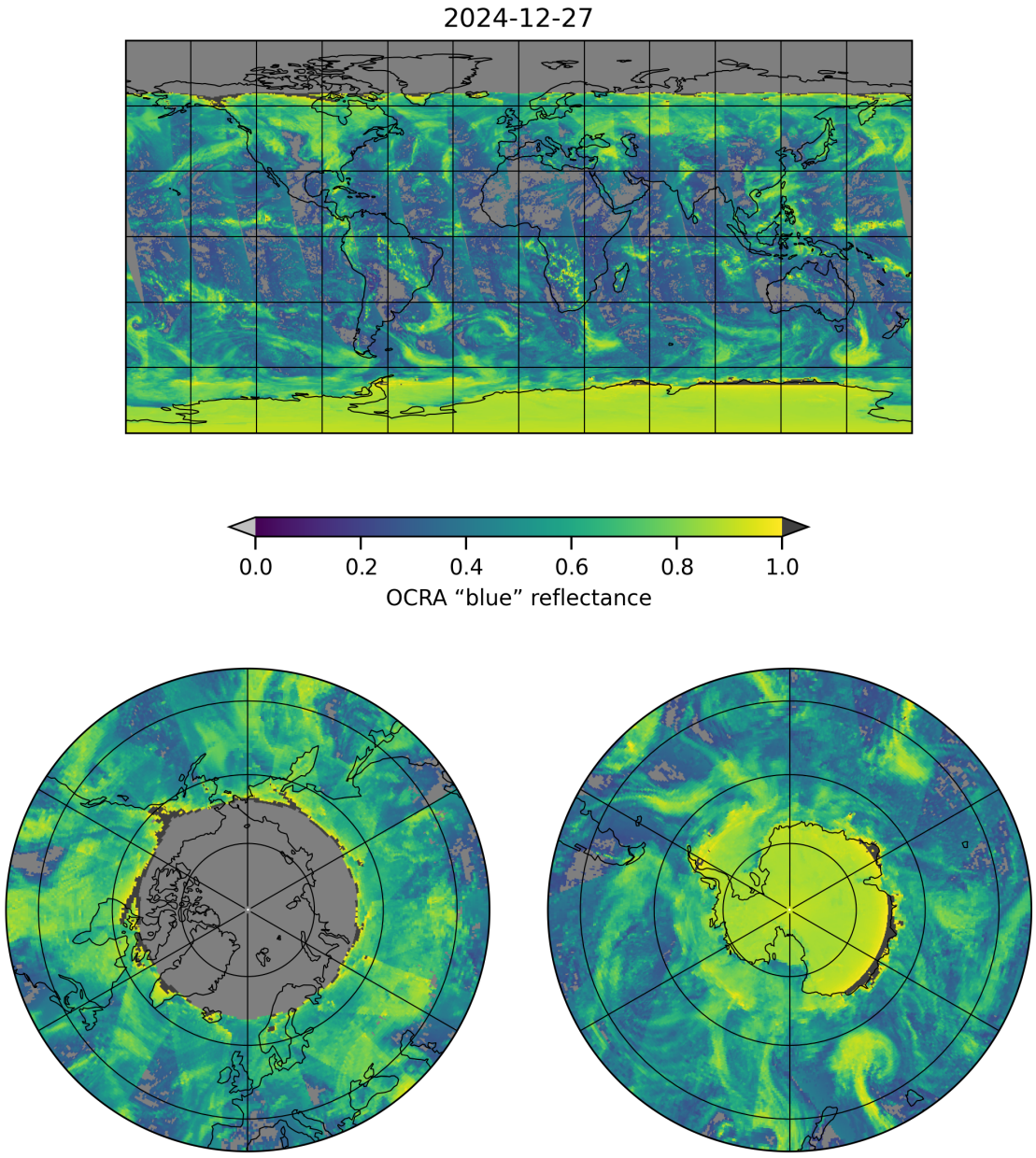

Figure 16: Map of “OCRA “blue” reflectance” for 2024-12-27 to 2024-12-28

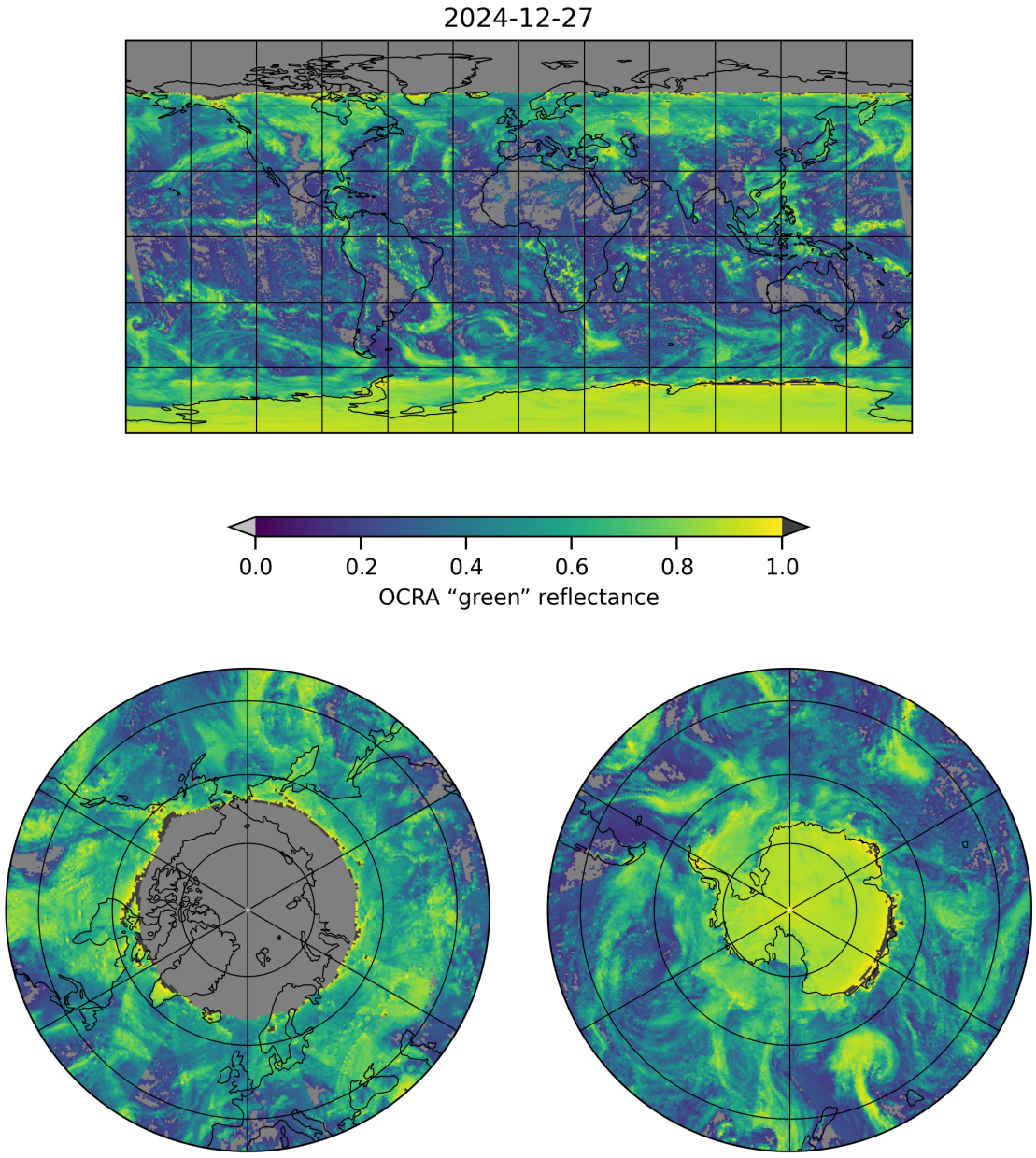

Figure 17: Map of “OCRA “green” reflectance” for 2024-12-27 to 2024-12-28

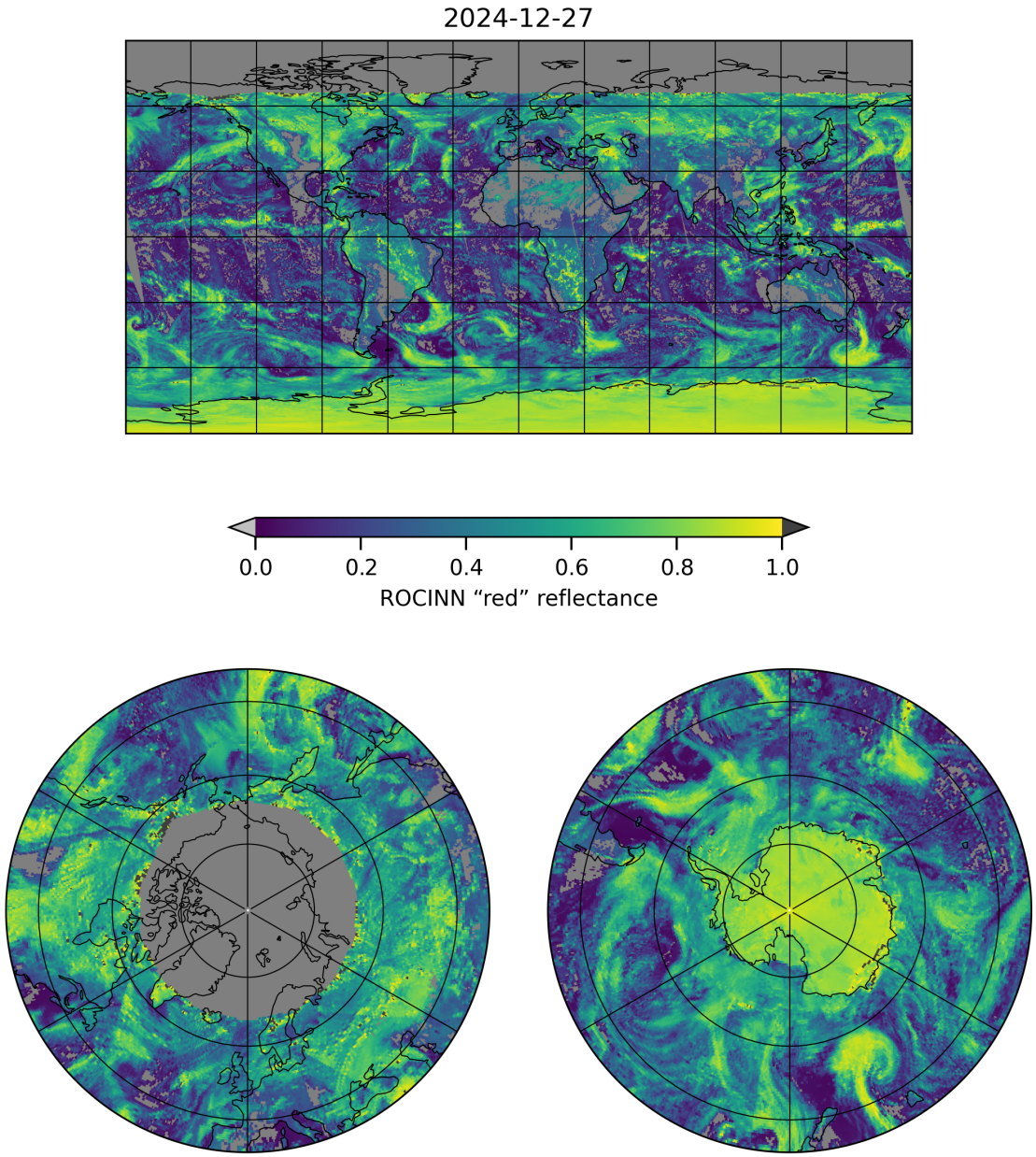

Figure 18: Map of “ROCINN “red” reflectance” for 2024-12-27 to 2024-12-28

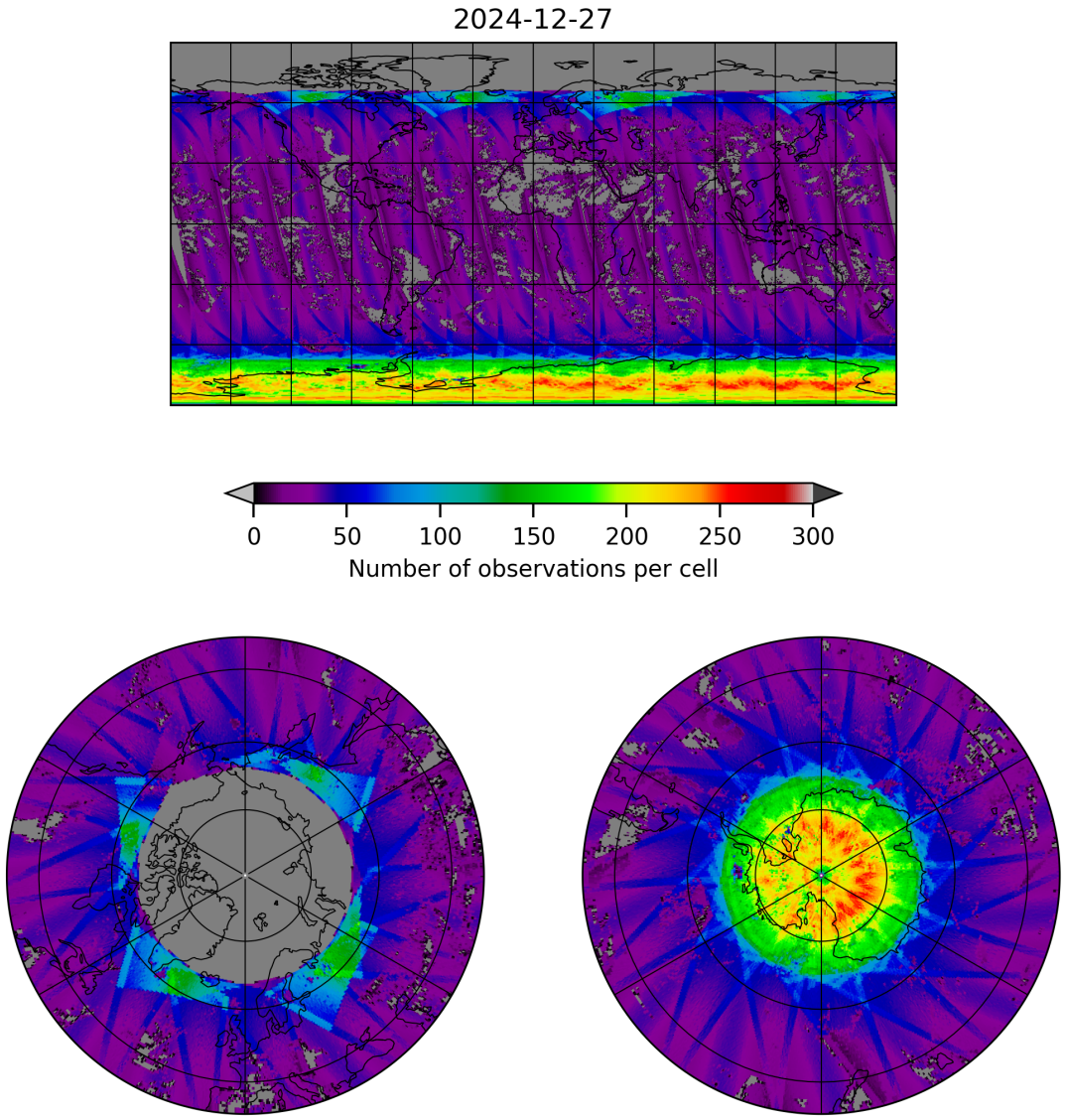

Figure 19: Map of the number of observations for 2024-12-27 to 2024-12-28

7 Zonal average

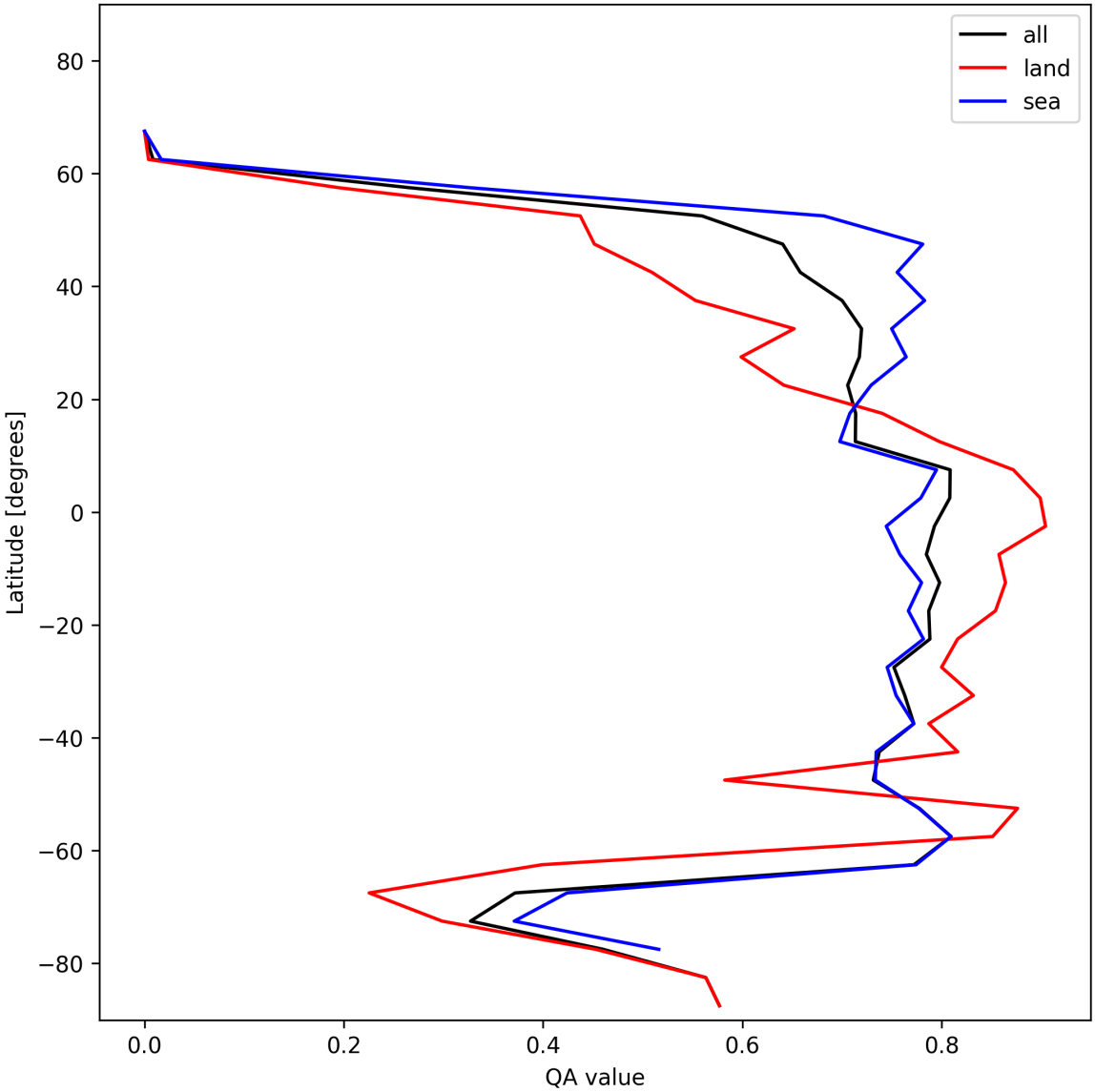

Figure 20: Zonal average of “QA value” for 2024-12-27 to 2024-12-28.

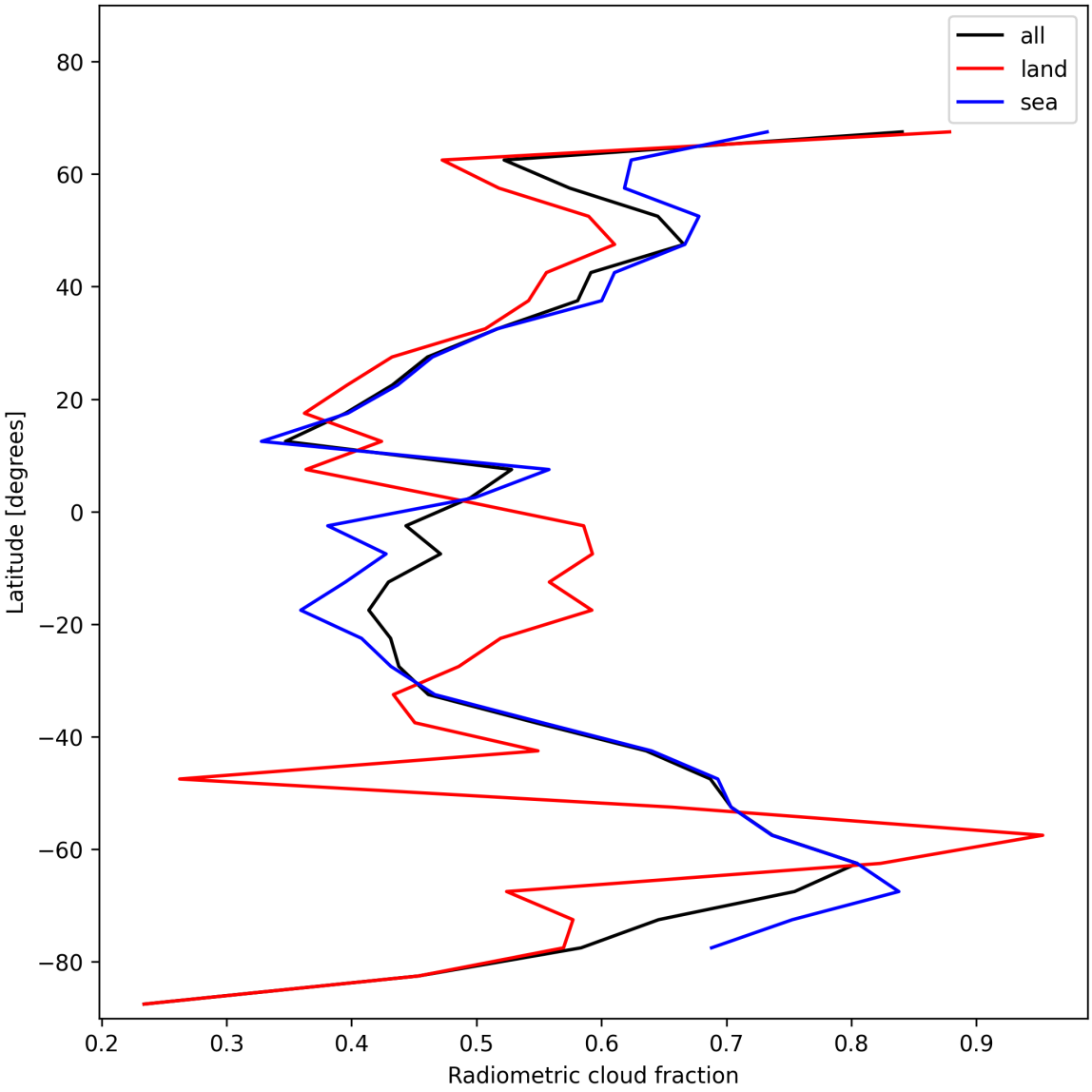

Figure 21: Zonal average of “Radiometric cloud fraction” for 2024-12-27 to 2024-12-28.

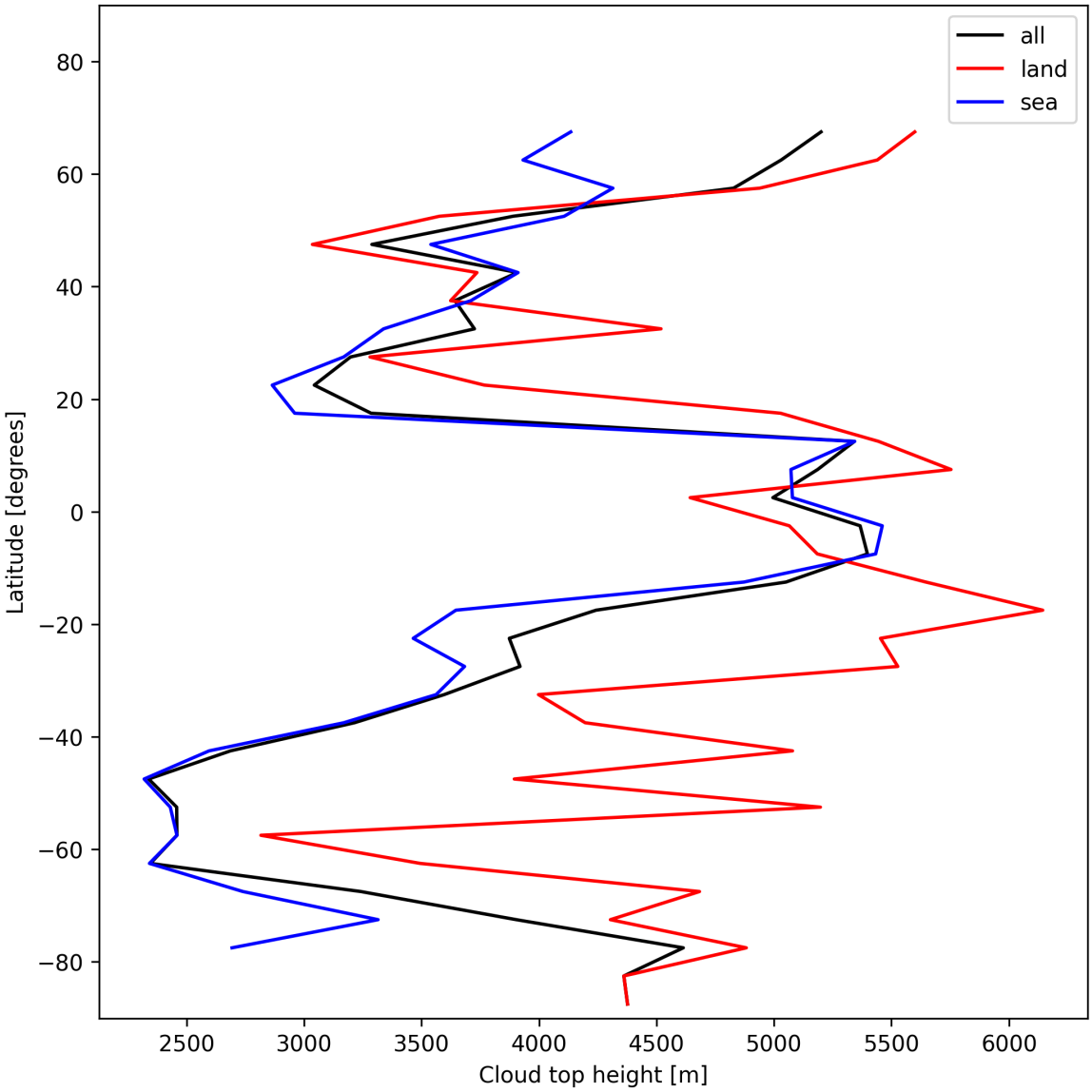

Figure 22: Zonal average of “Cloud top height” for 2024-12-27 to 2024-12-28.

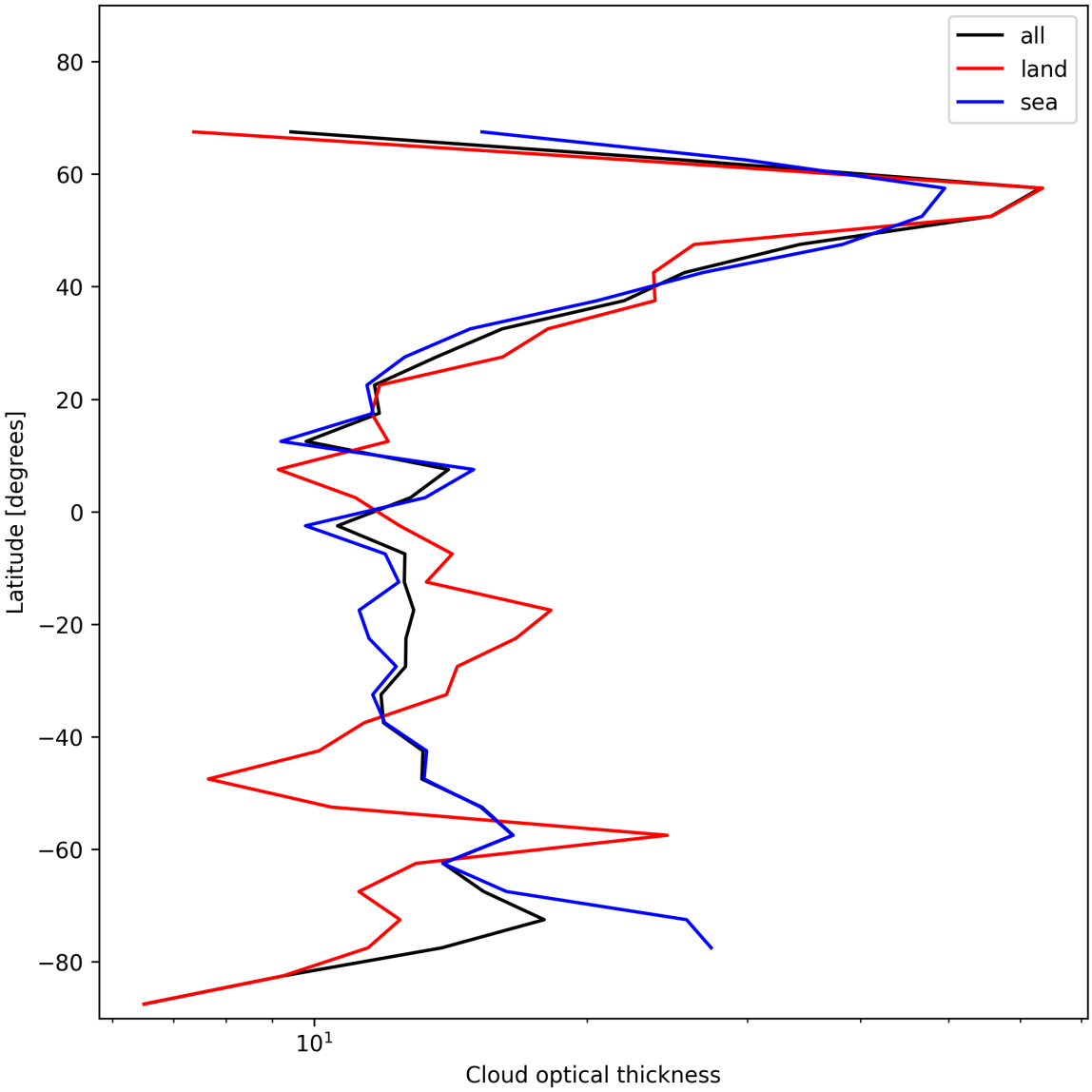

Figure 23: Zonal average of “Cloud optical thickness” for 2024-12-27 to 2024-12-28.

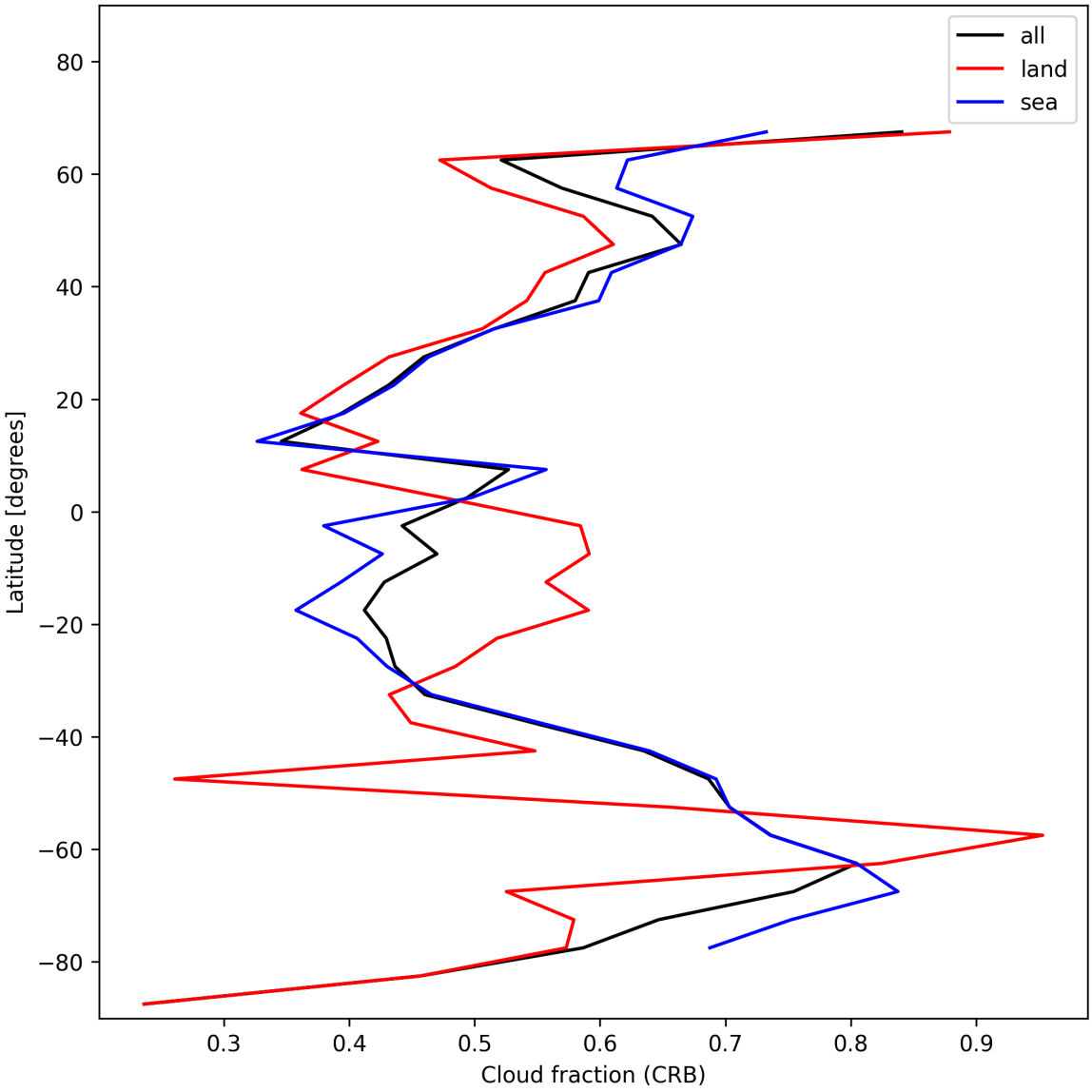

Figure 24: Zonal average of “Cloud fraction (CRB)” for 2024-12-27 to 2024-12-28.

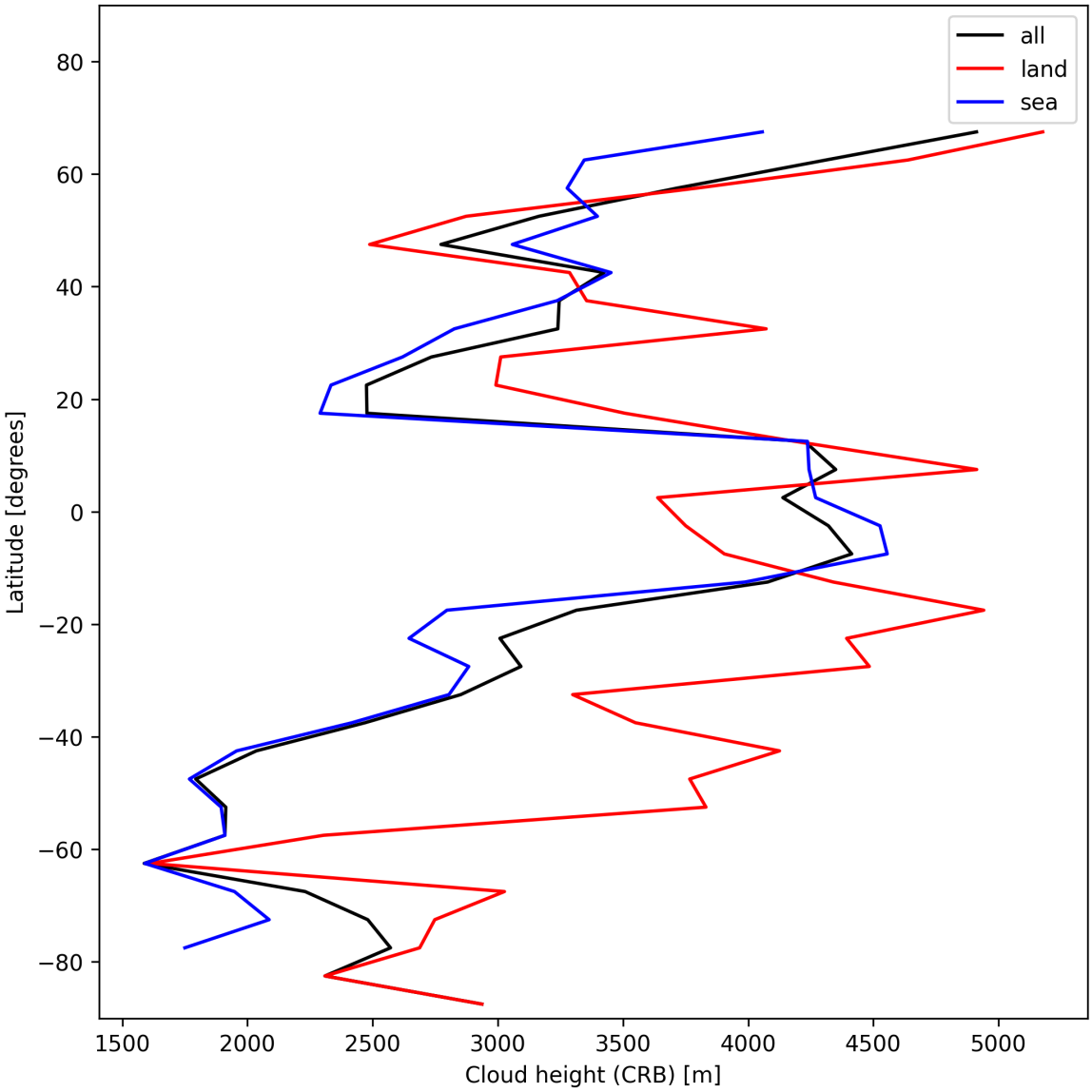

Figure 25: Zonal average of “Cloud height (CRB)” for 2024-12-27 to 2024-12-28.

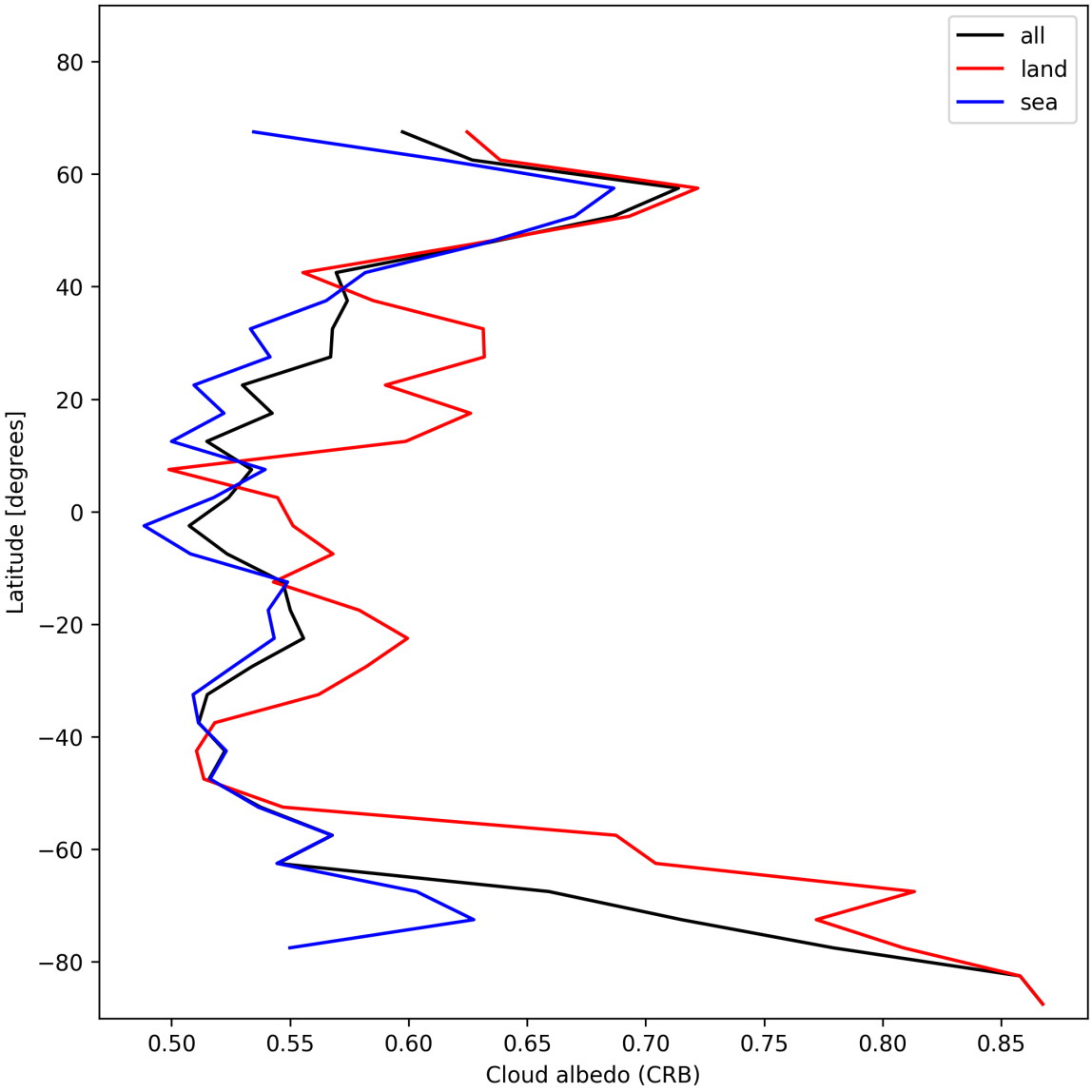

Figure 26: Zonal average of “Cloud albedo (CRB)” for 2024-12-27 to 2024-12-28.

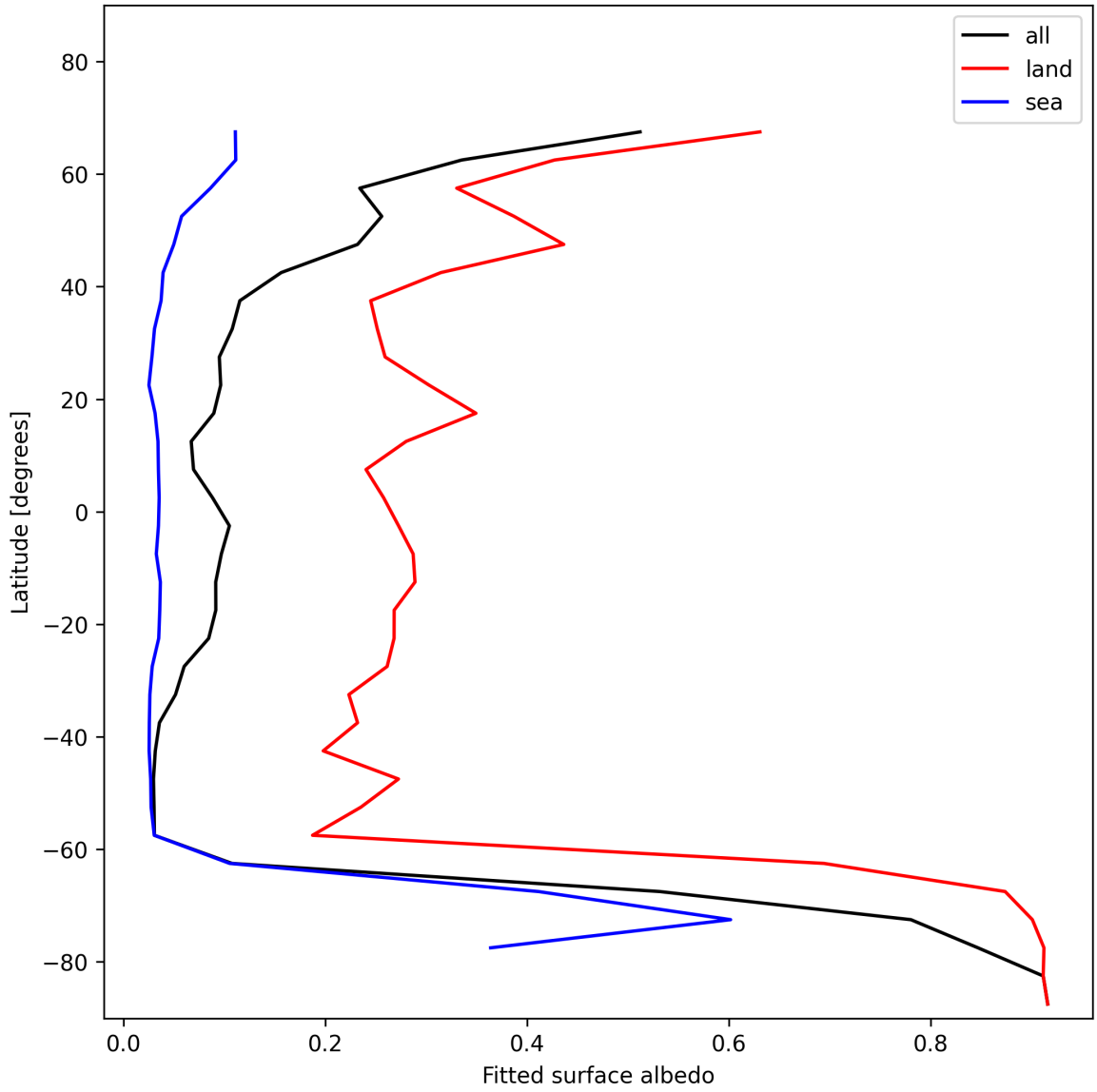

Figure 27: Zonal average of “Fitted surface albedo” for 2024-12-27 to 2024-12-28.

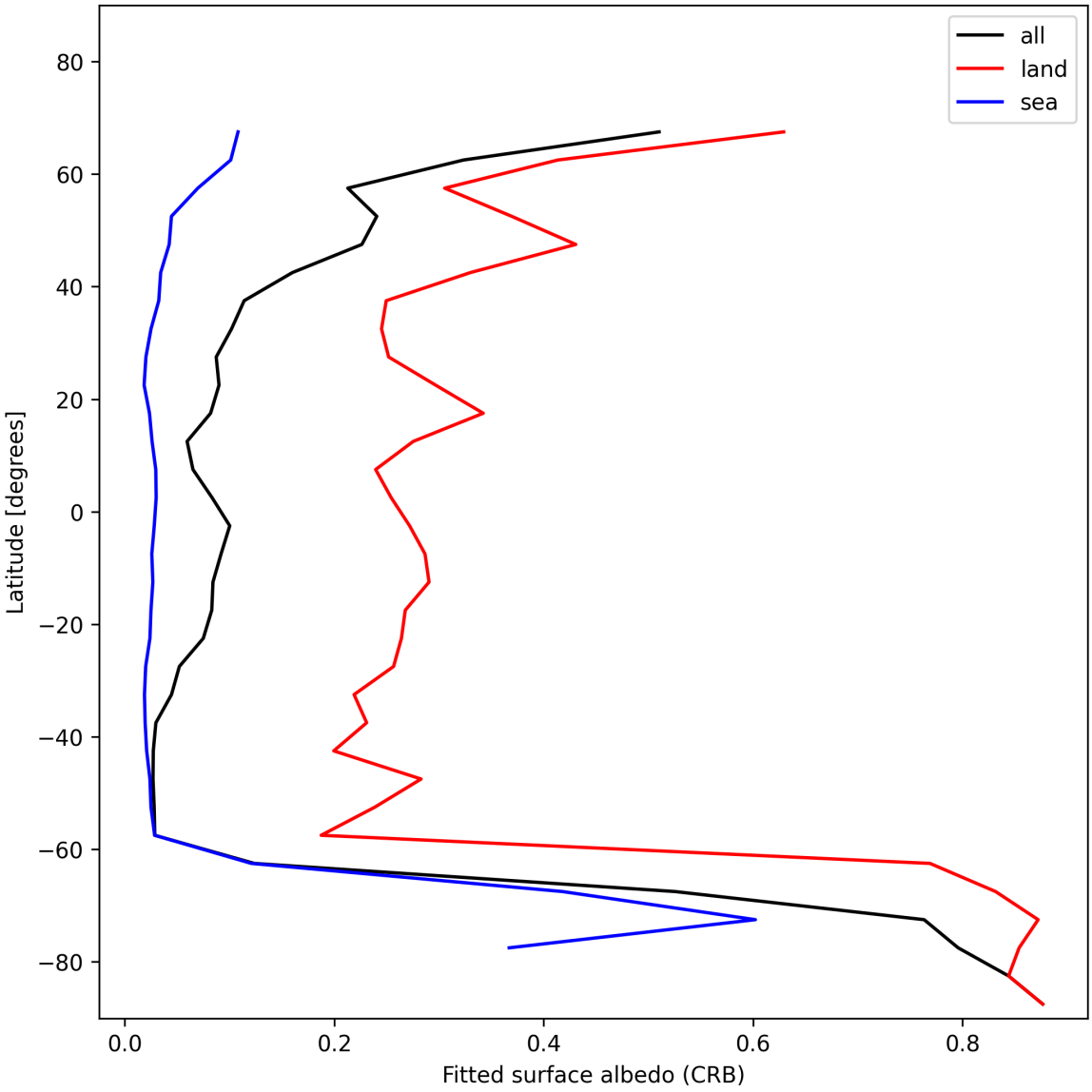

Figure 28: Zonal average of “Fitted surface albedo (CRB)” for 2024-12-27 to 2024-12-28.

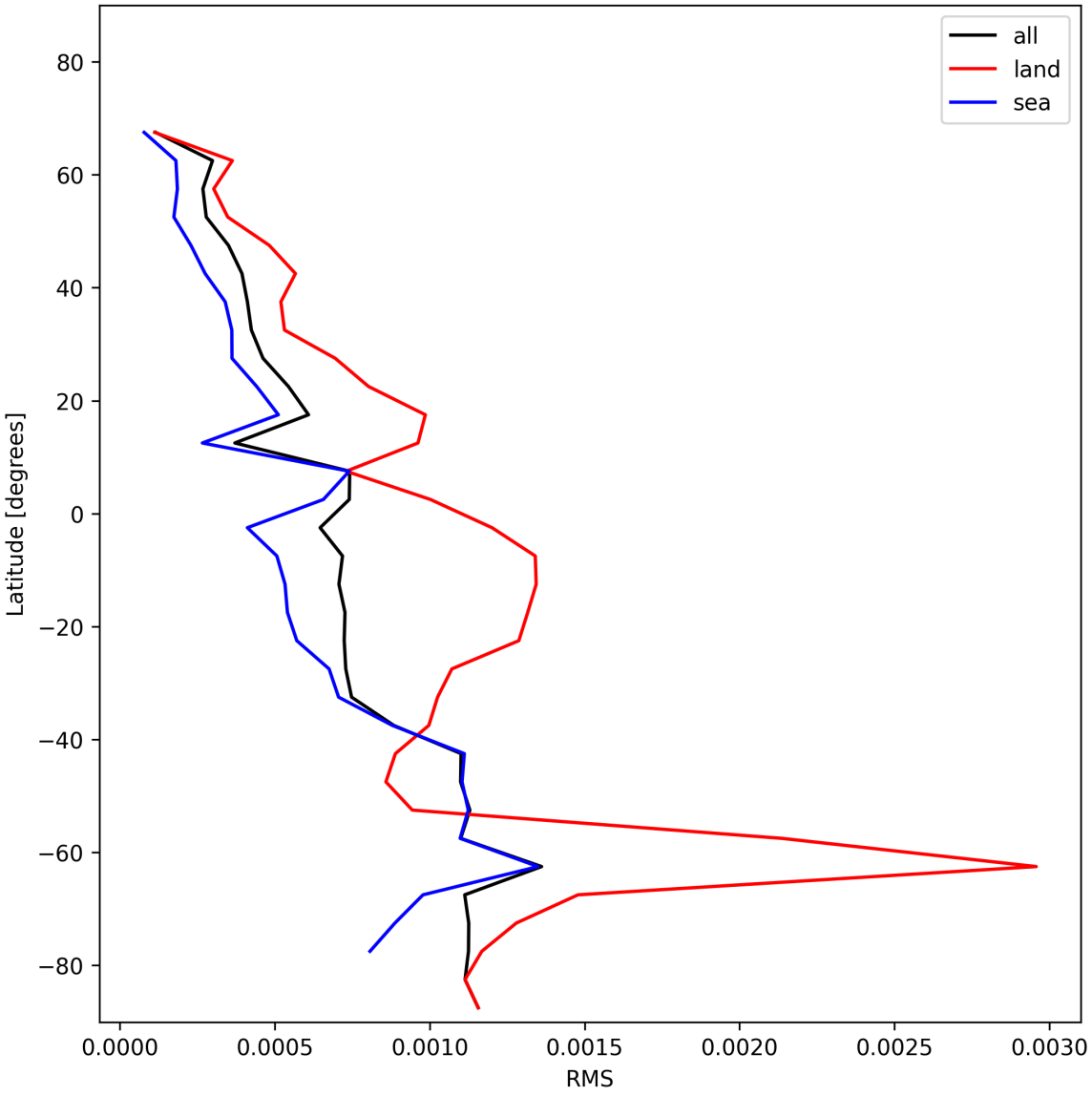

Figure 29: Zonal average of “RMS” for 2024-12-27 to 2024-12-28.

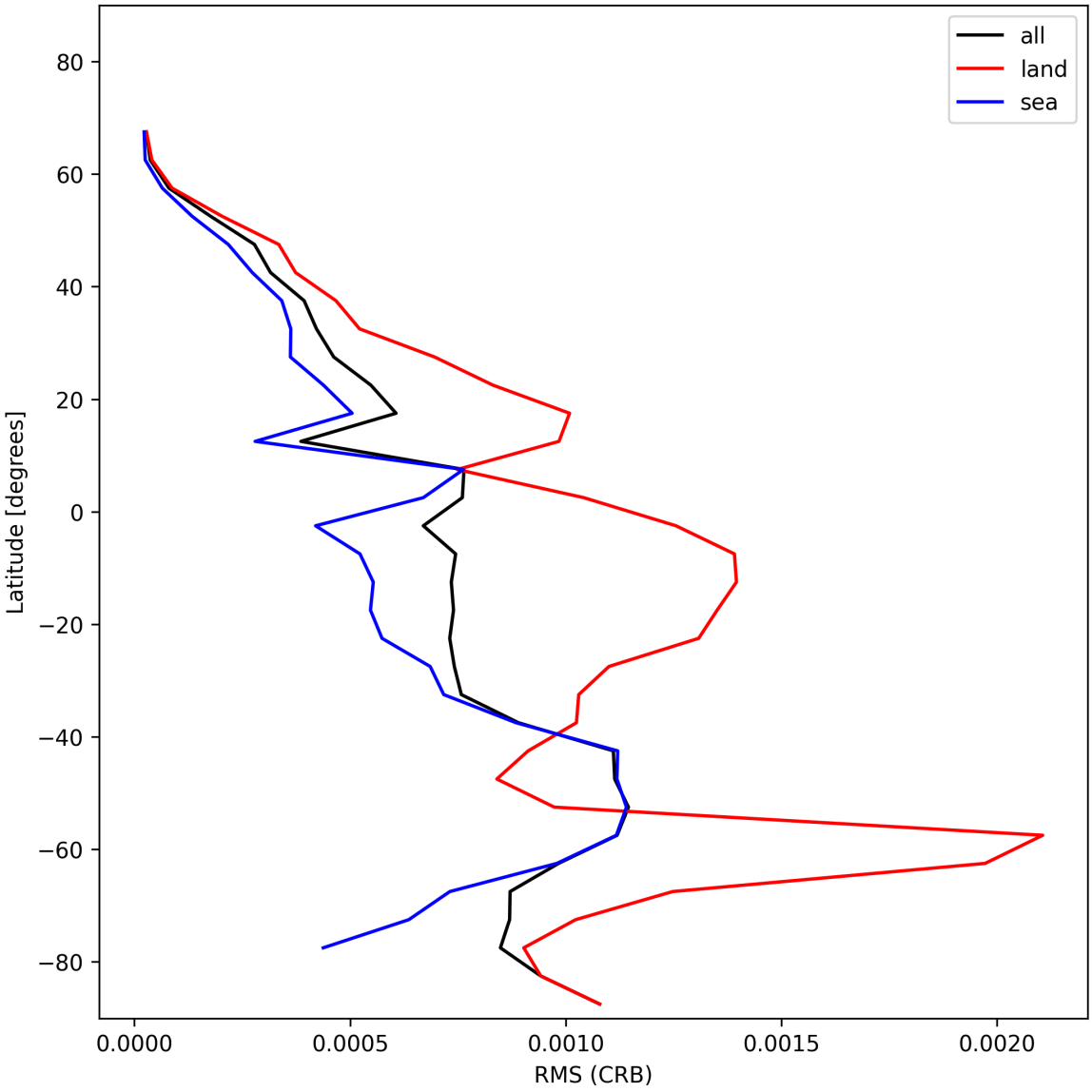

Figure 30: Zonal average of “RMS (CRB)” for 2024-12-27 to 2024-12-28.

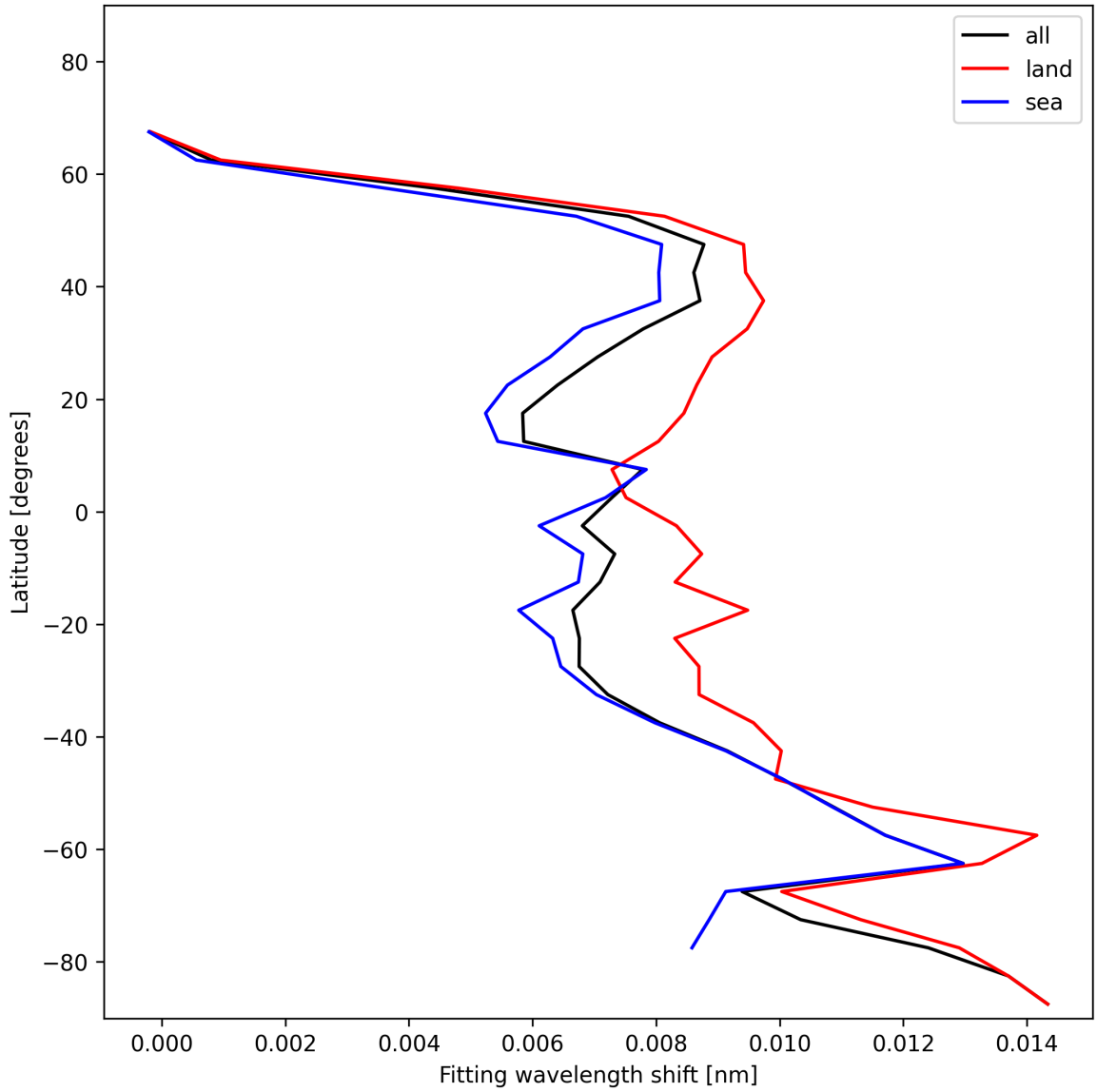

Figure 31: Zonal average of “Fitting wavelength shift” for 2024-12-27 to 2024-12-28.

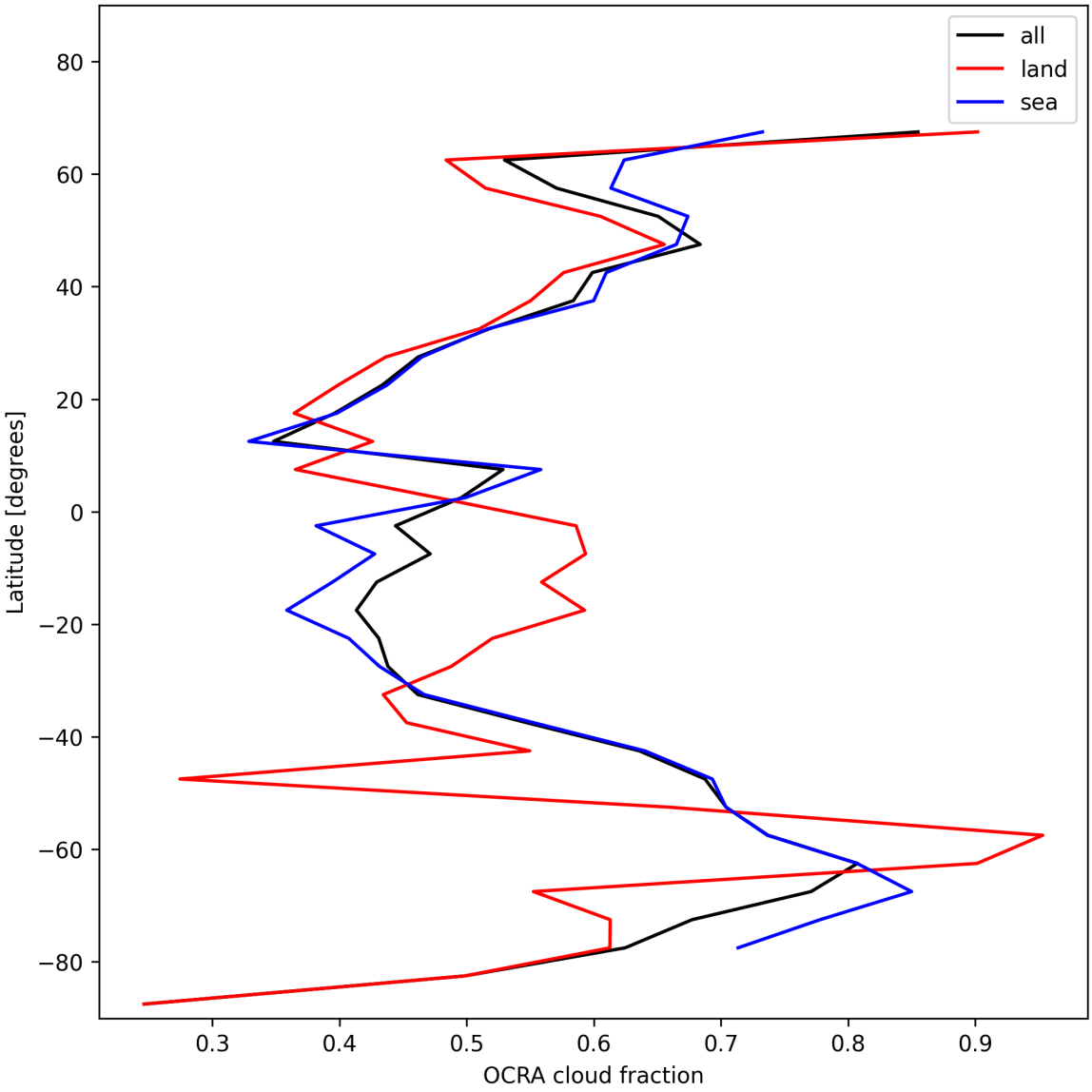

Figure 32: Zonal average of “OCRA cloud fraction” for 2024-12-27 to 2024-12-28.

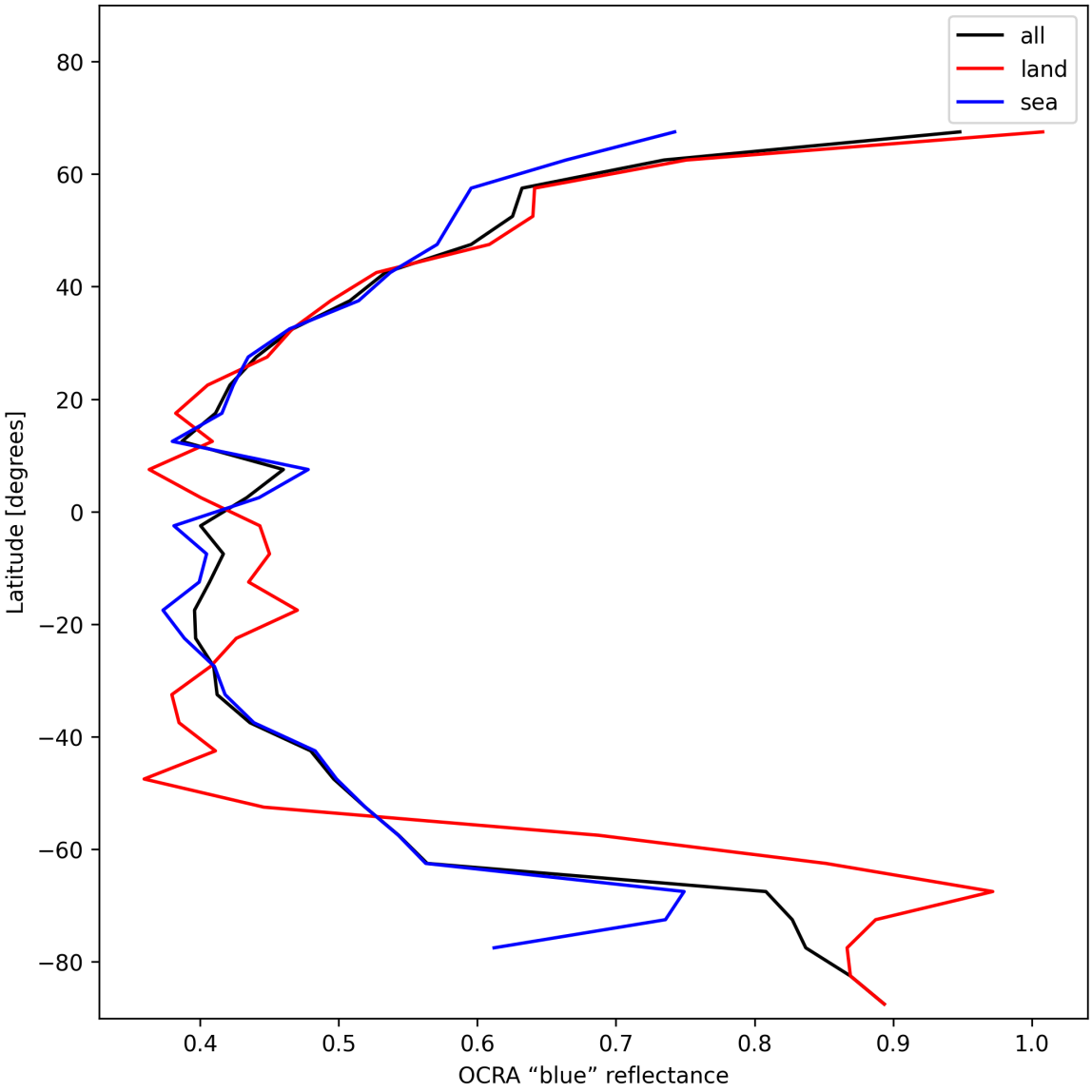

Figure 33: Zonal average of “OCRA “blue” reflectance” for 2024-12-27 to 2024-12-28.

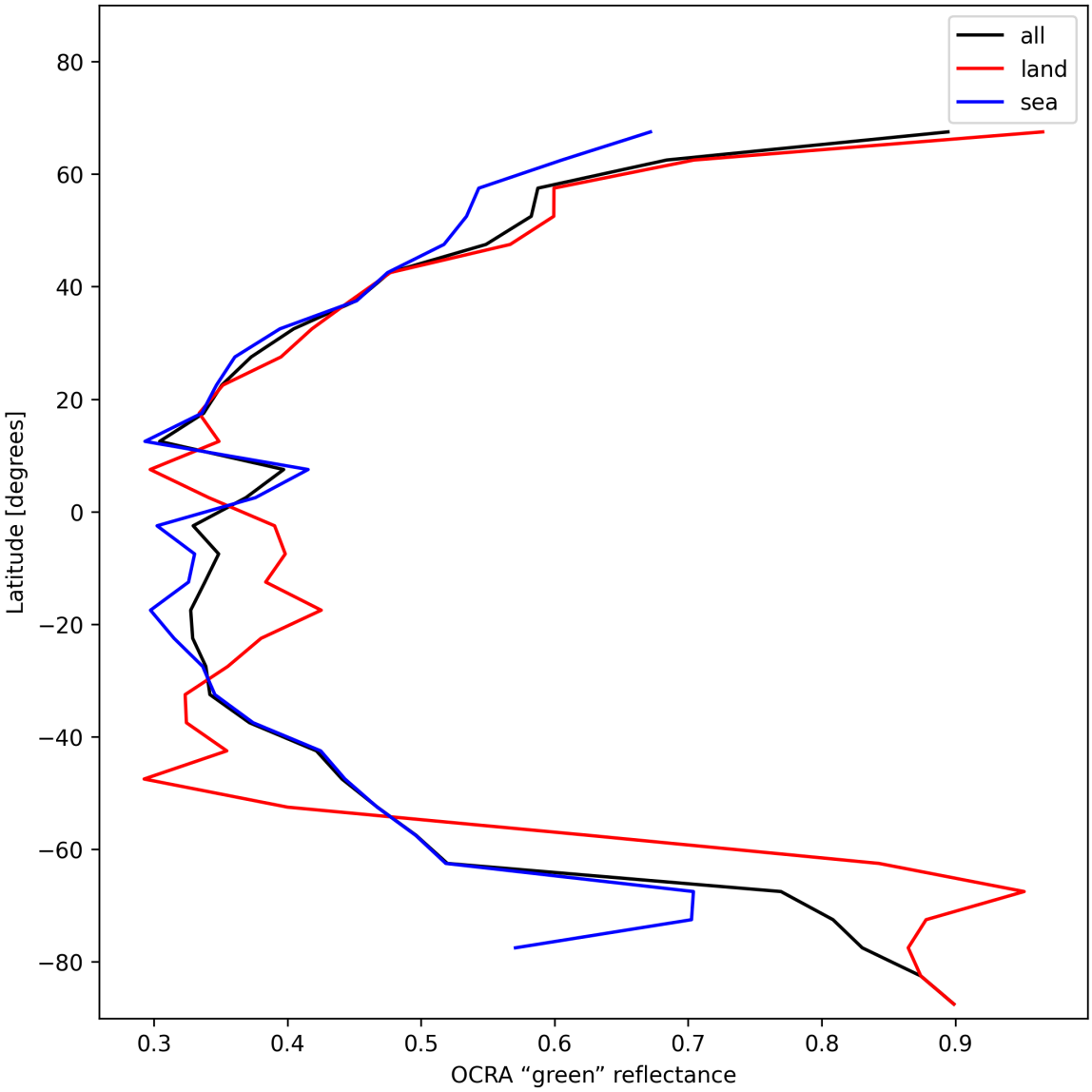

Figure 34: Zonal average of “OCRA “green” reflectance” for 2024-12-27 to 2024-12-28.

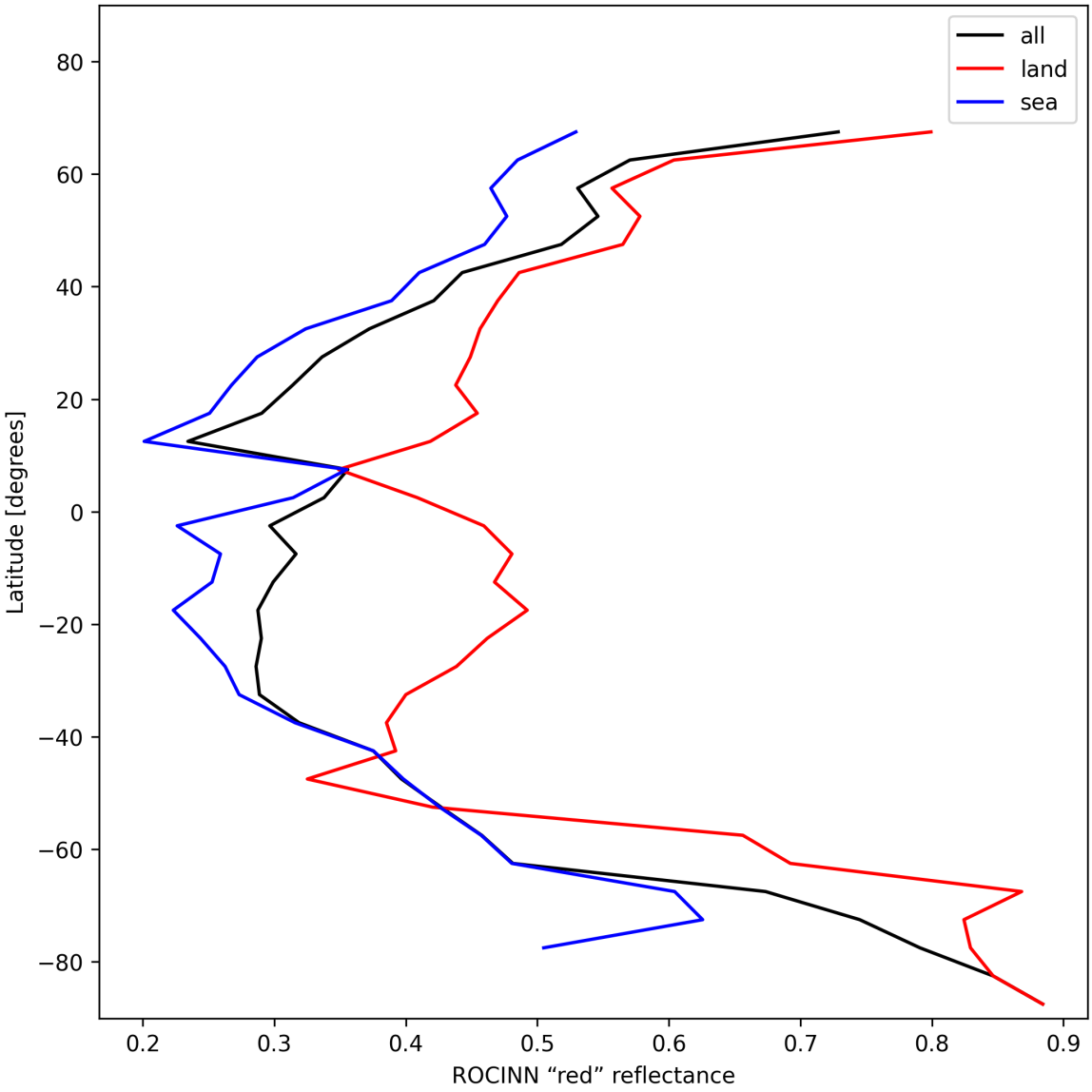

Figure 35: Zonal average of “ROCINN “red” reflectance” for 2024-12-27 to 2024-12-28.

8 Histograms

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

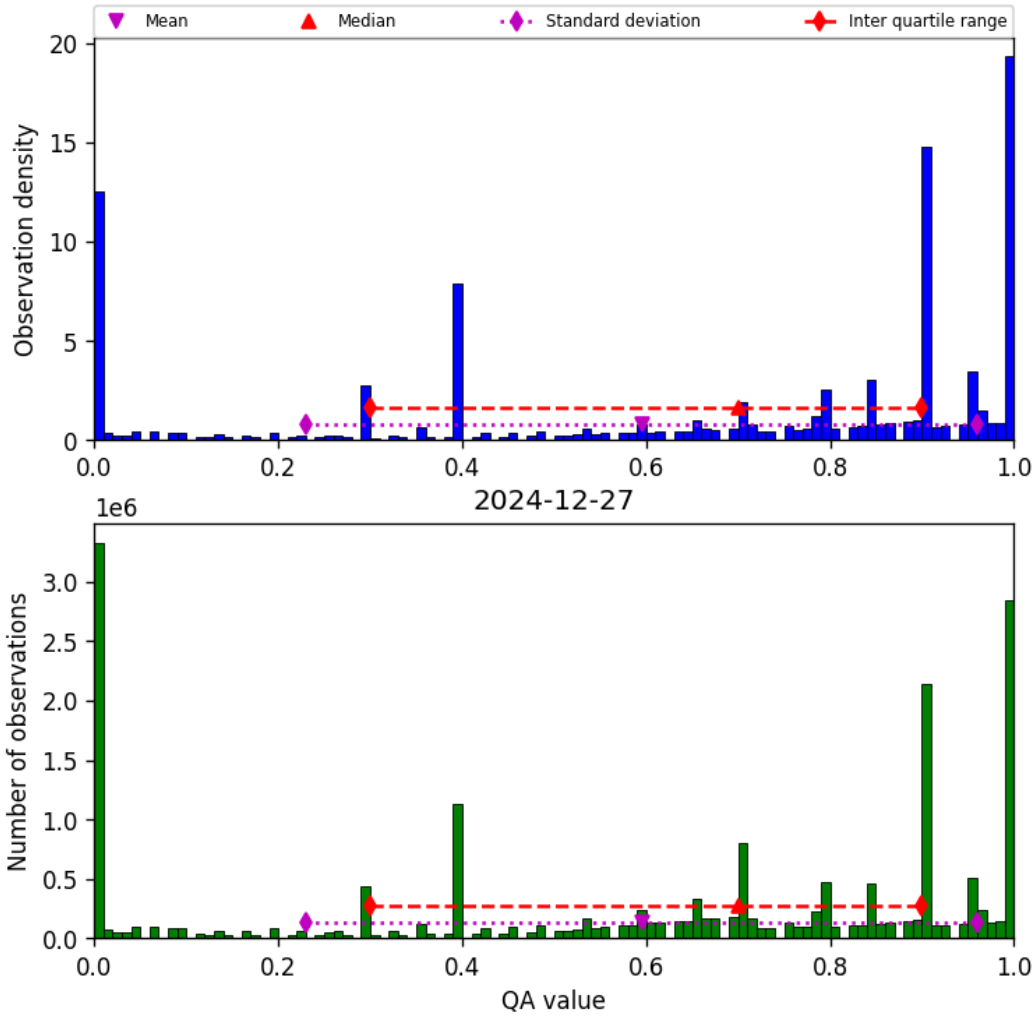

Figure 36: Histogram of “QA value” for 2024-12-27 to 2024-12-28

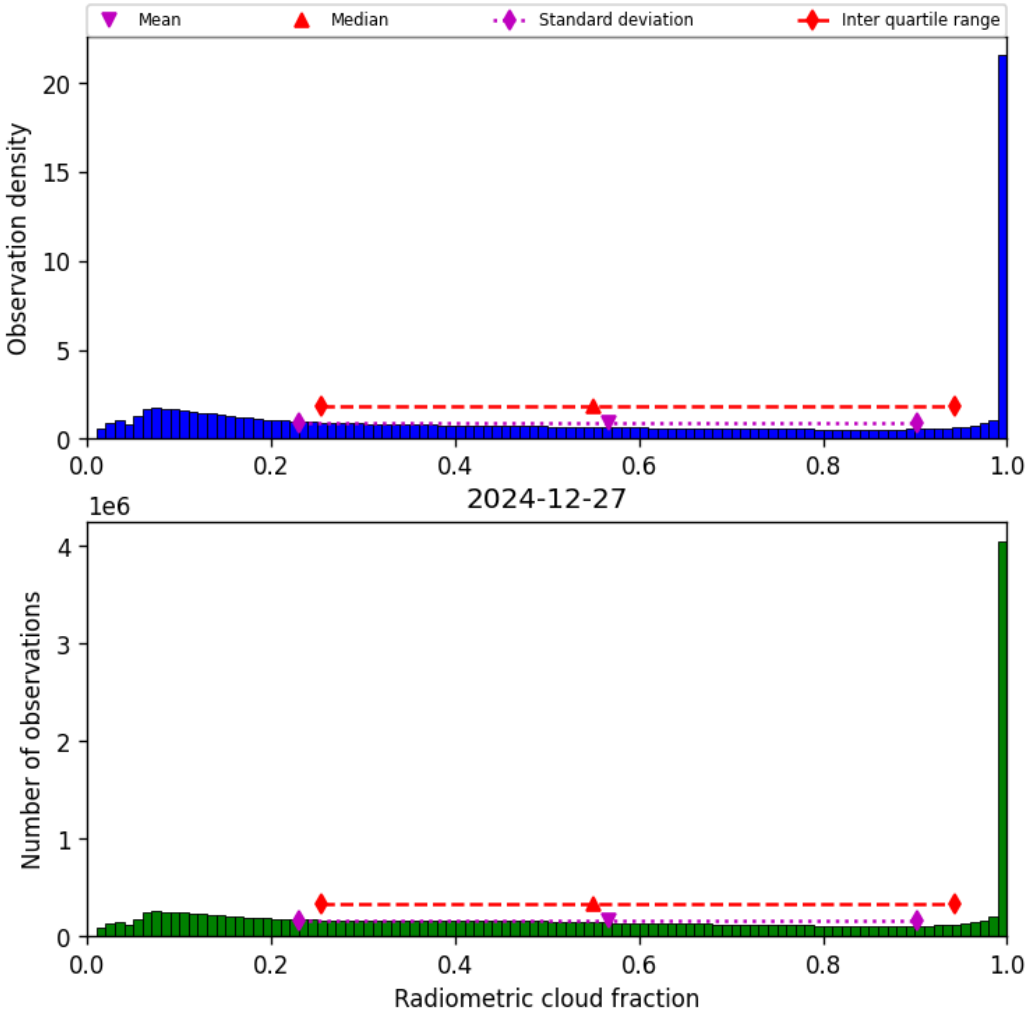

Figure 37: Histogram of “Radiometric cloud fraction” for 2024-12-27 to 2024-12-28

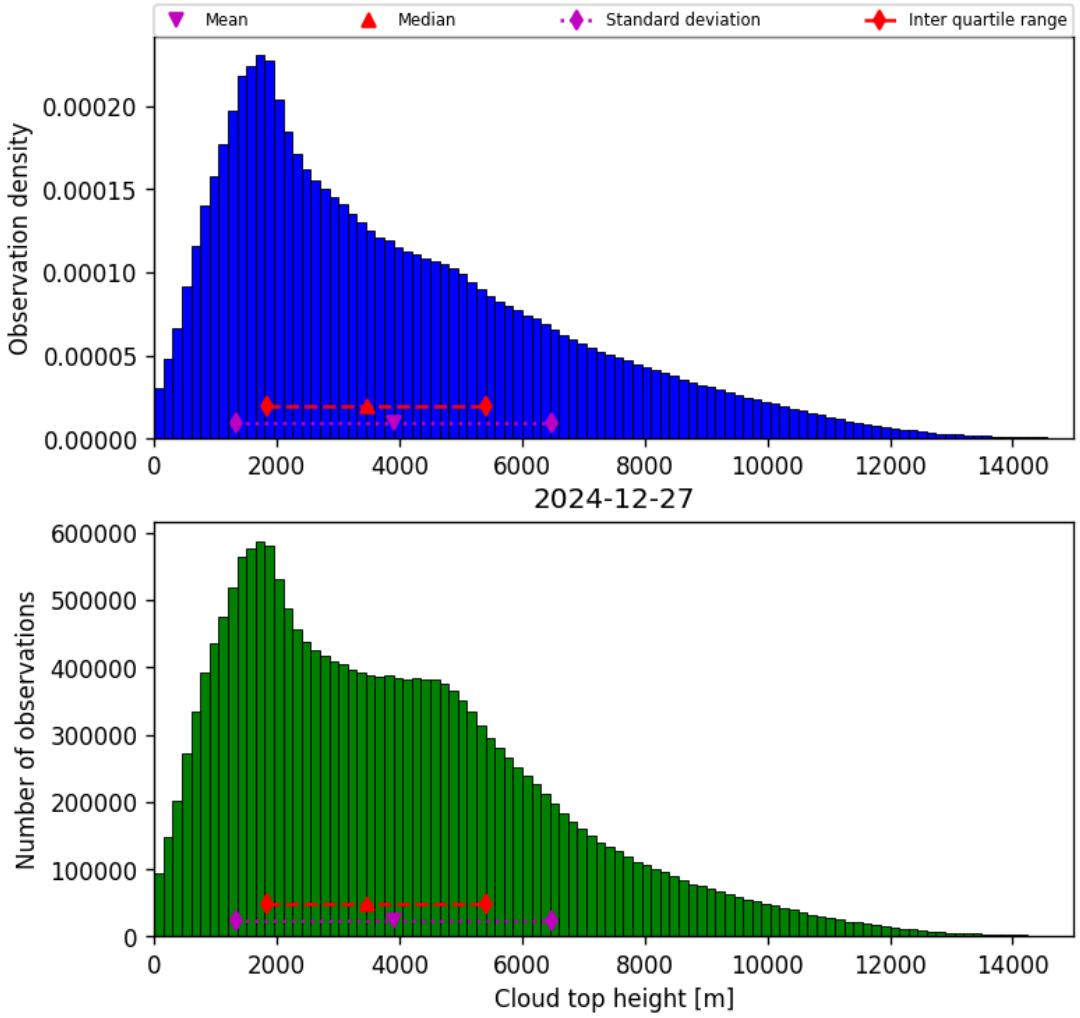

Figure 38: Histogram of “Cloud top height” for 2024-12-27 to 2024-12-28

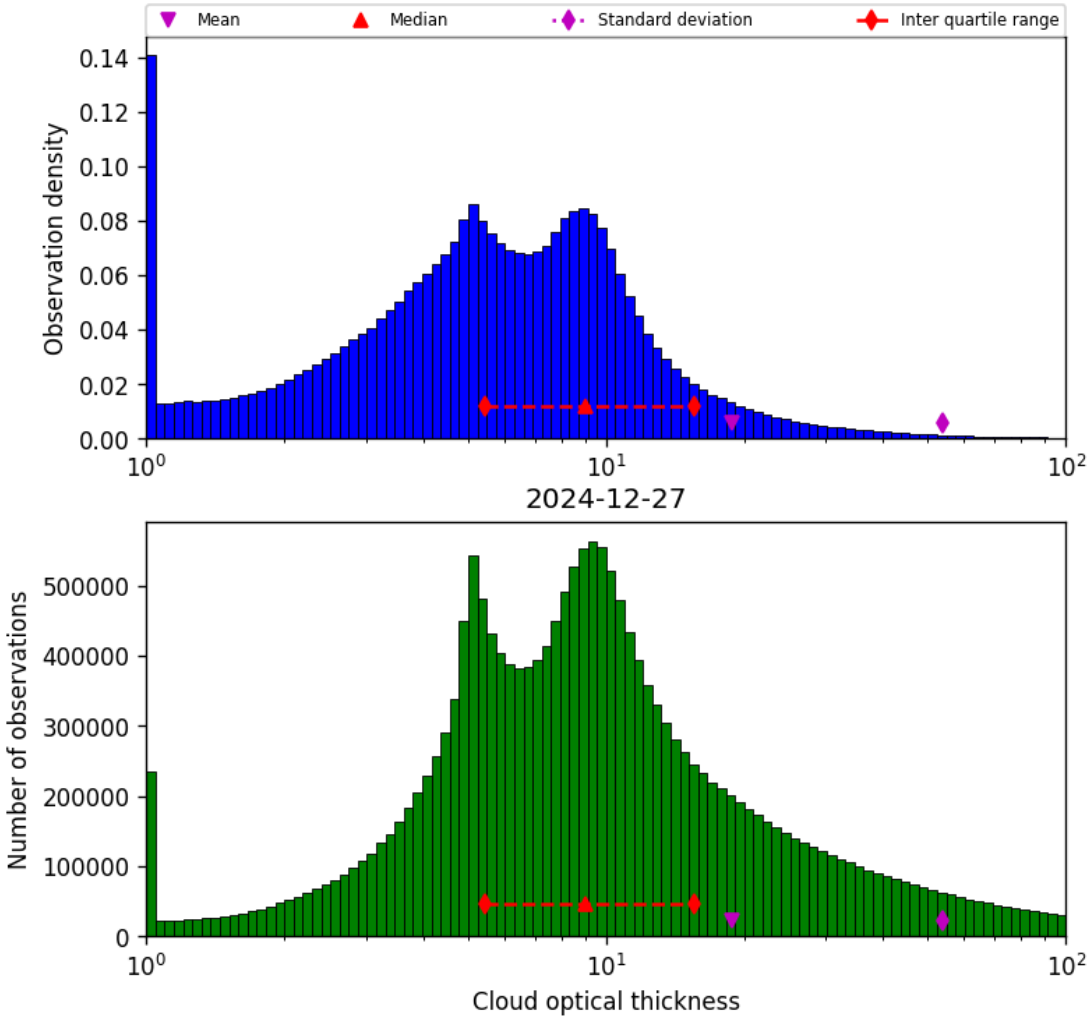

Figure 39: Histogram of “Cloud optical thickness” for 2024-12-27 to 2024-12-28

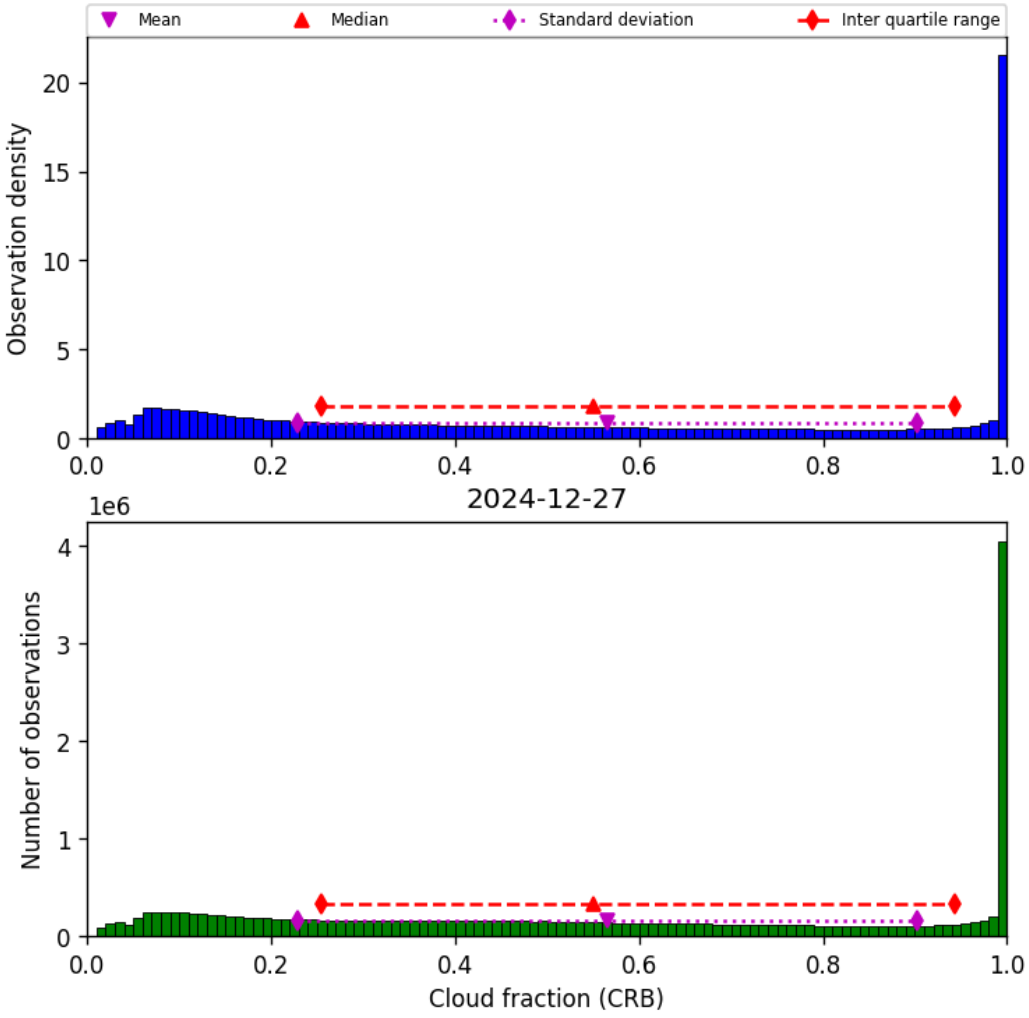

Figure 40: Histogram of “Cloud fraction (CRB)” for 2024-12-27 to 2024-12-28

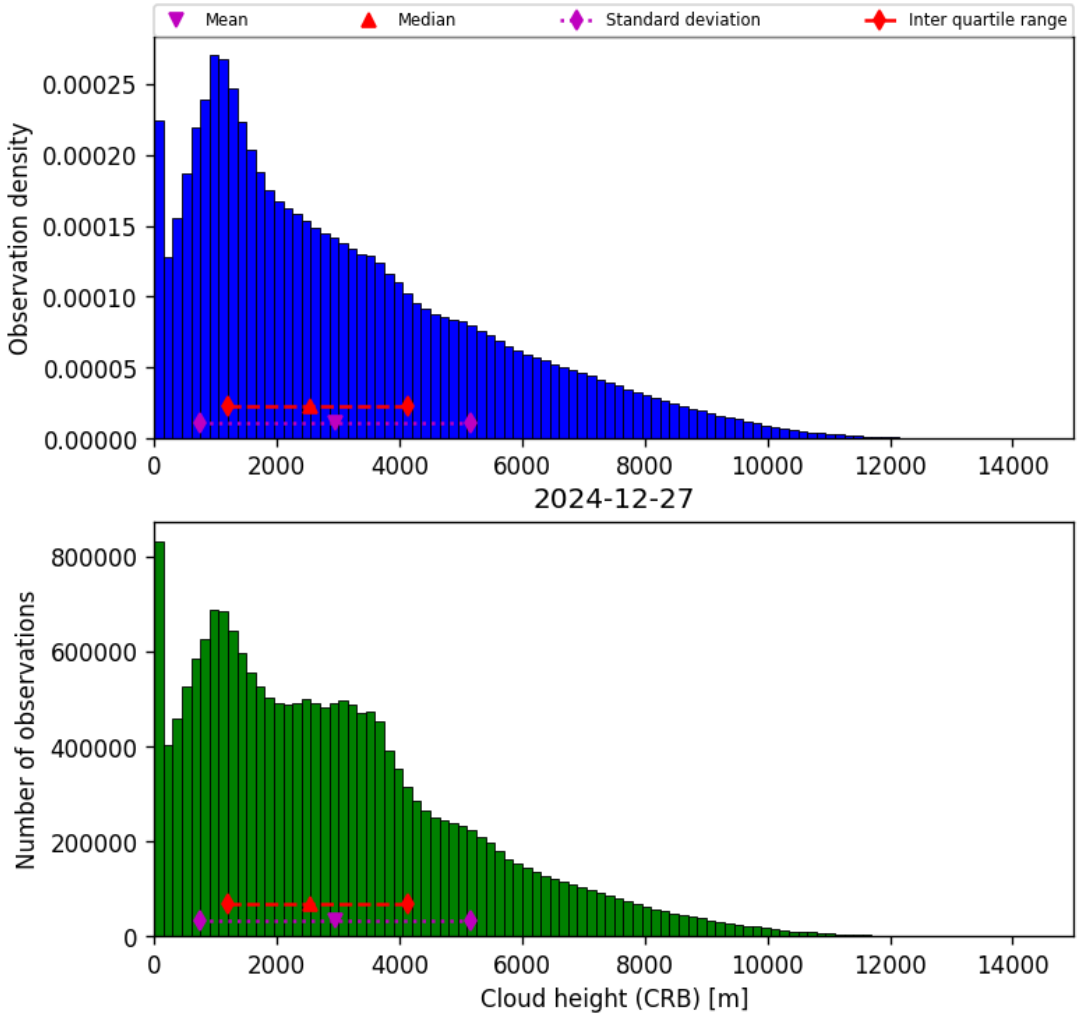

Figure 41: Histogram of “Cloud height (CRB)” for 2024-12-27 to 2024-12-28

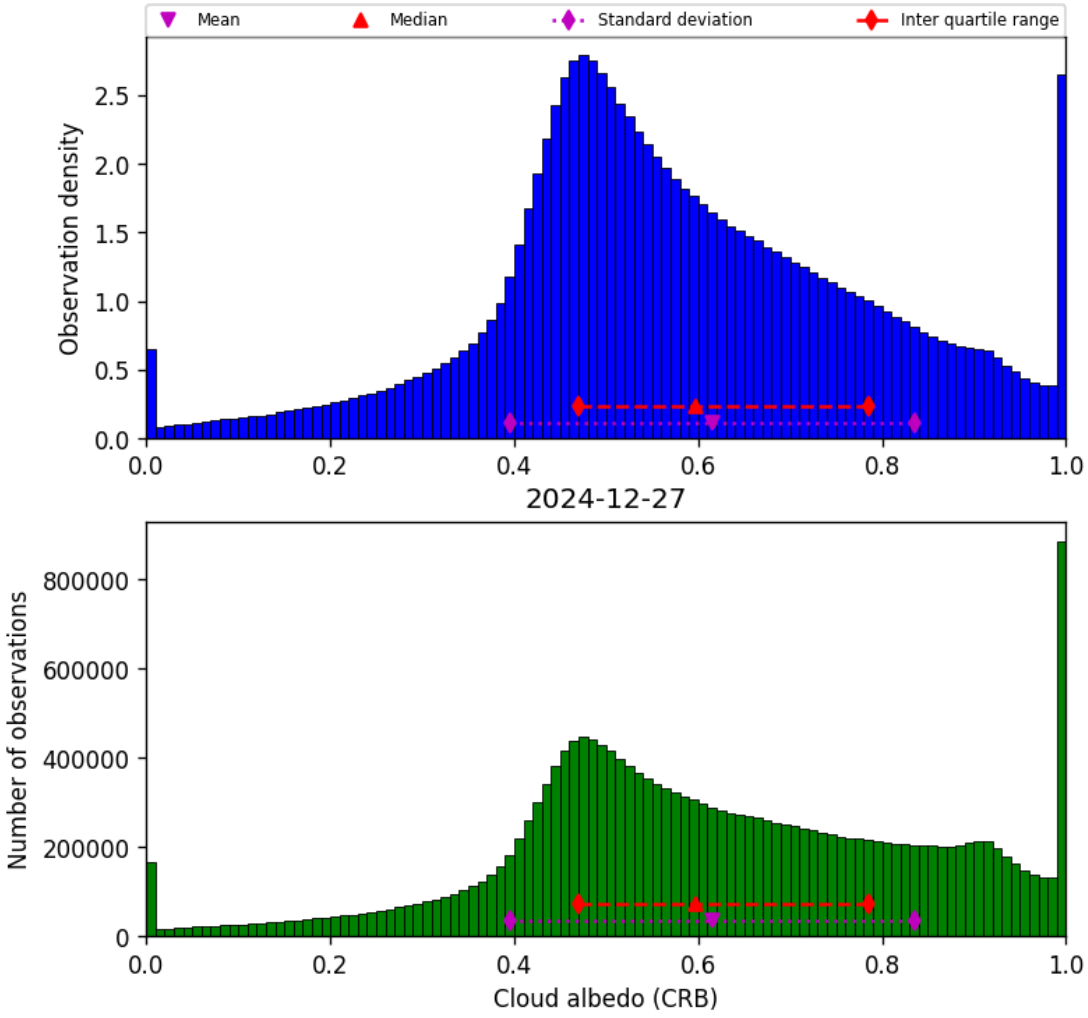

Figure 42: Histogram of “Cloud albedo (CRB)” for 2024-12-27 to 2024-12-28

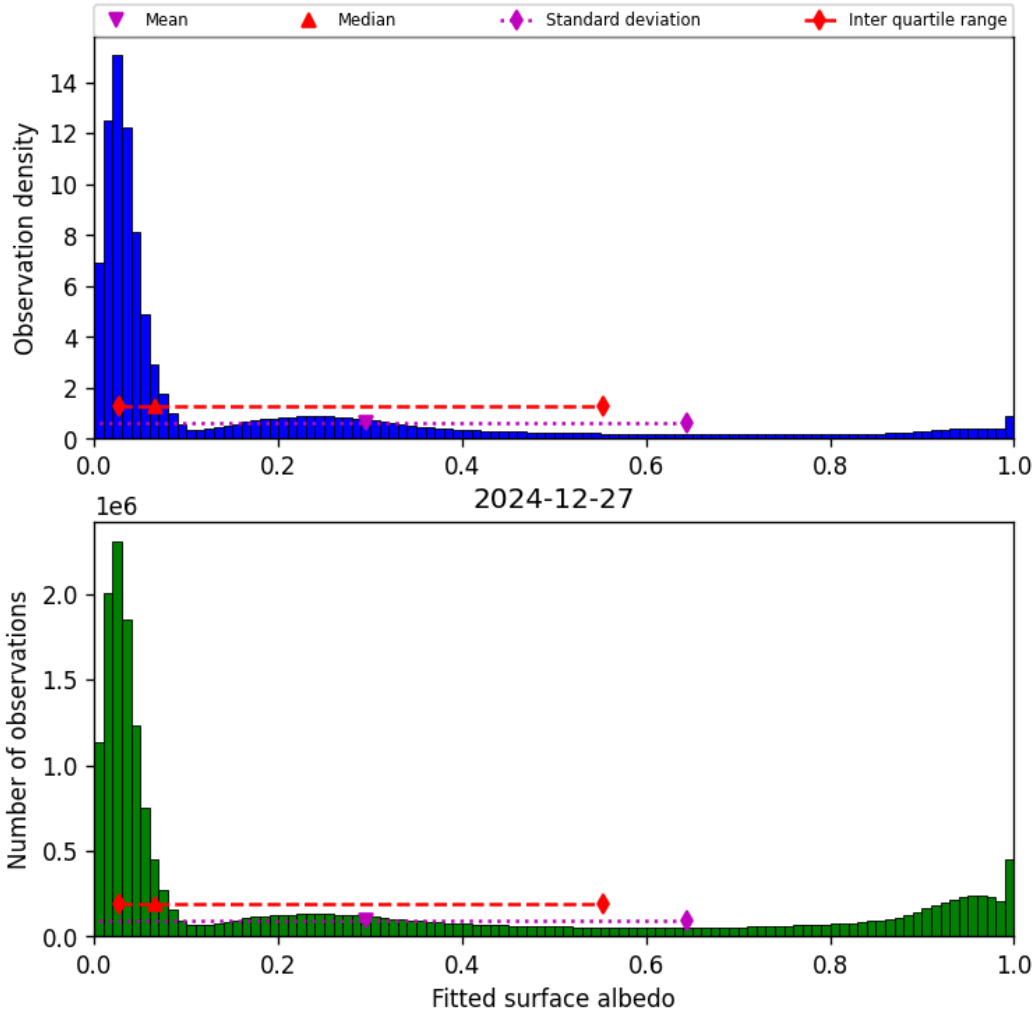

Figure 43: Histogram of “Fitted surface albedo” for 2024-12-27 to 2024-12-28

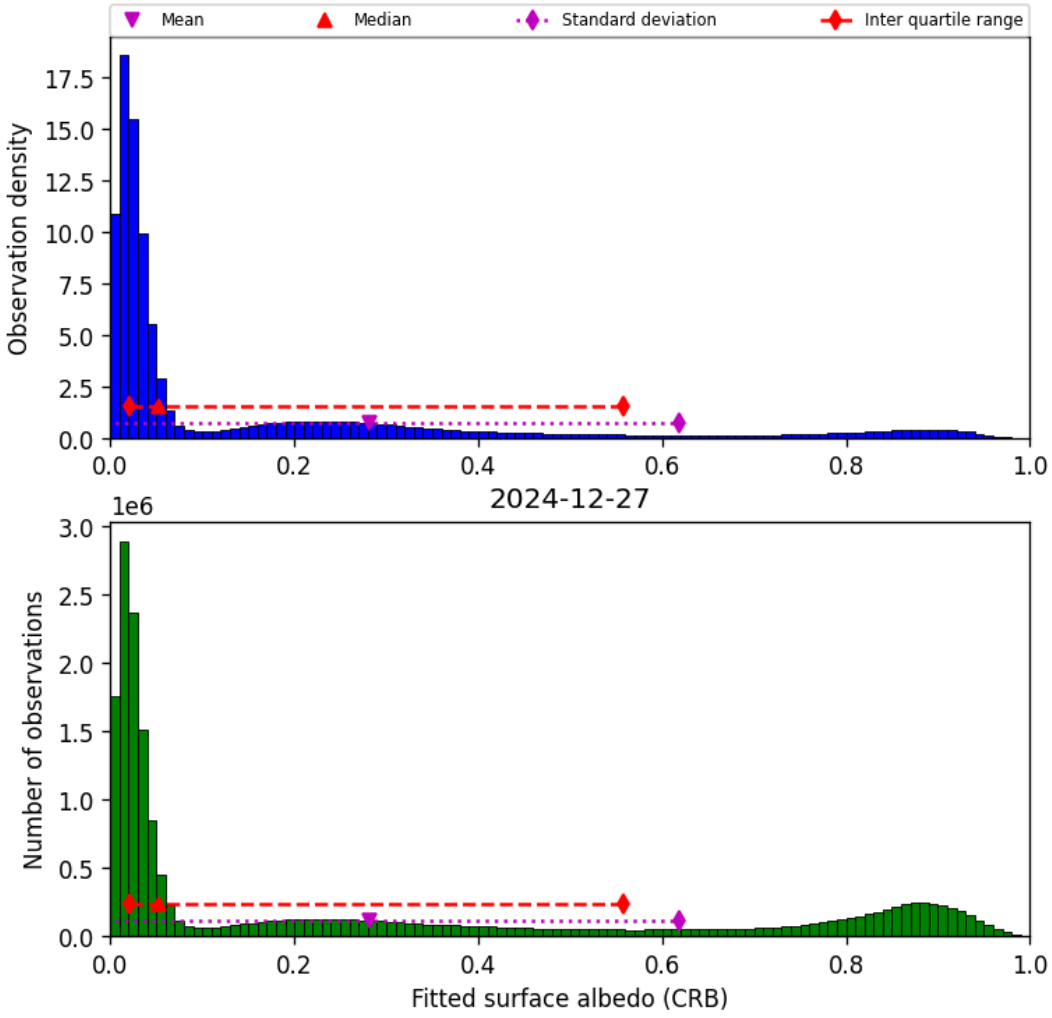

Figure 44: Histogram of “Fitted surface albedo (CRB)” for 2024-12-27 to 2024-12-28

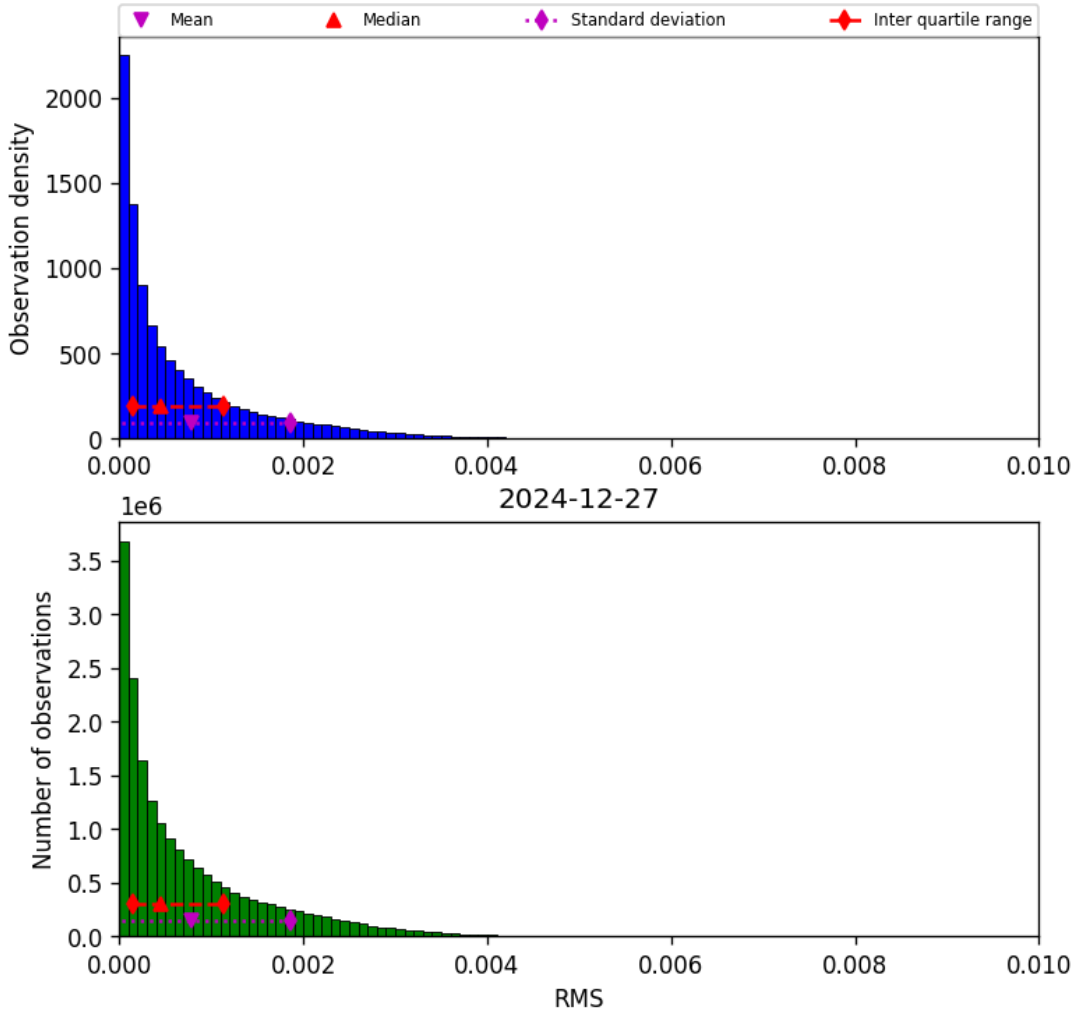

Figure 45: Histogram of “RMS” for 2024-12-27 to 2024-12-28

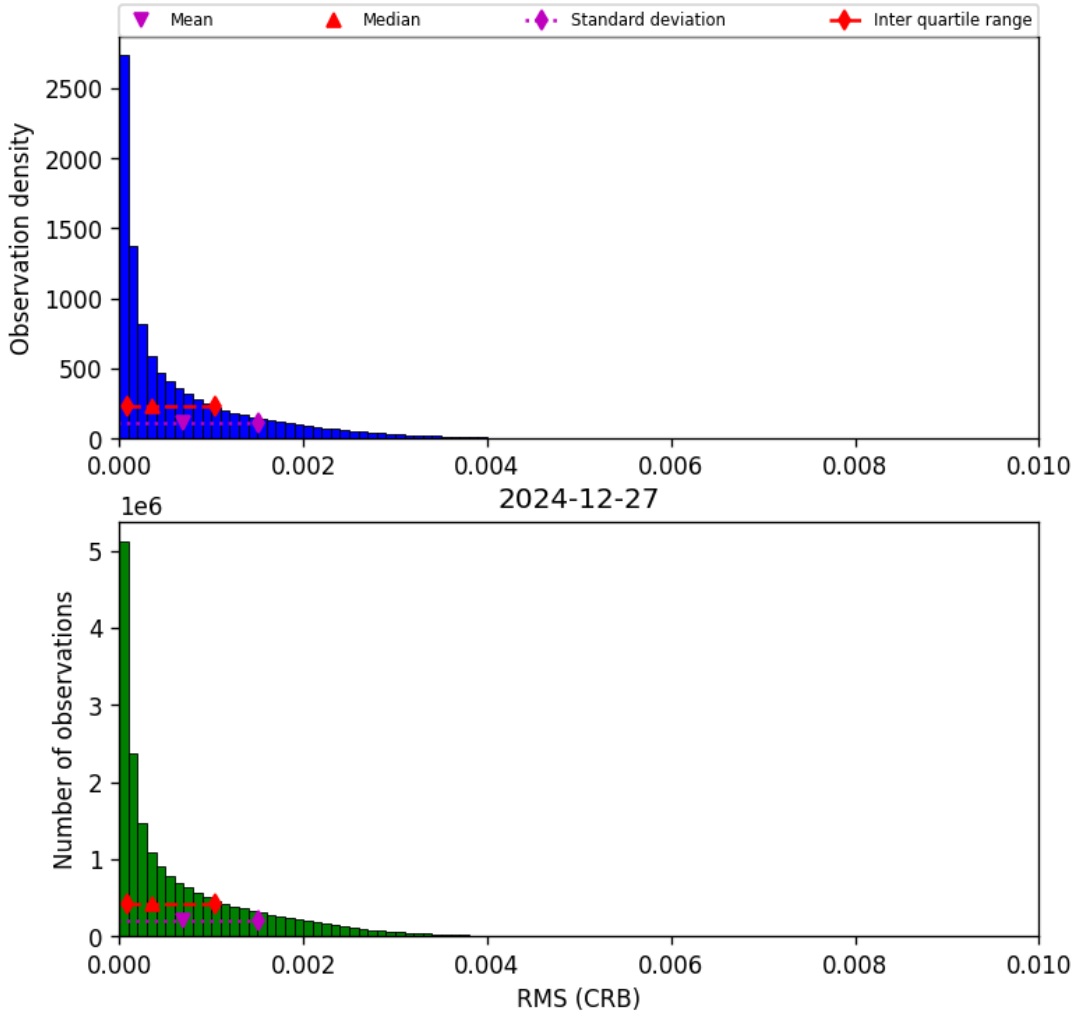

Figure 46: Histogram of “RMS (CRB)” for 2024-12-27 to 2024-12-28

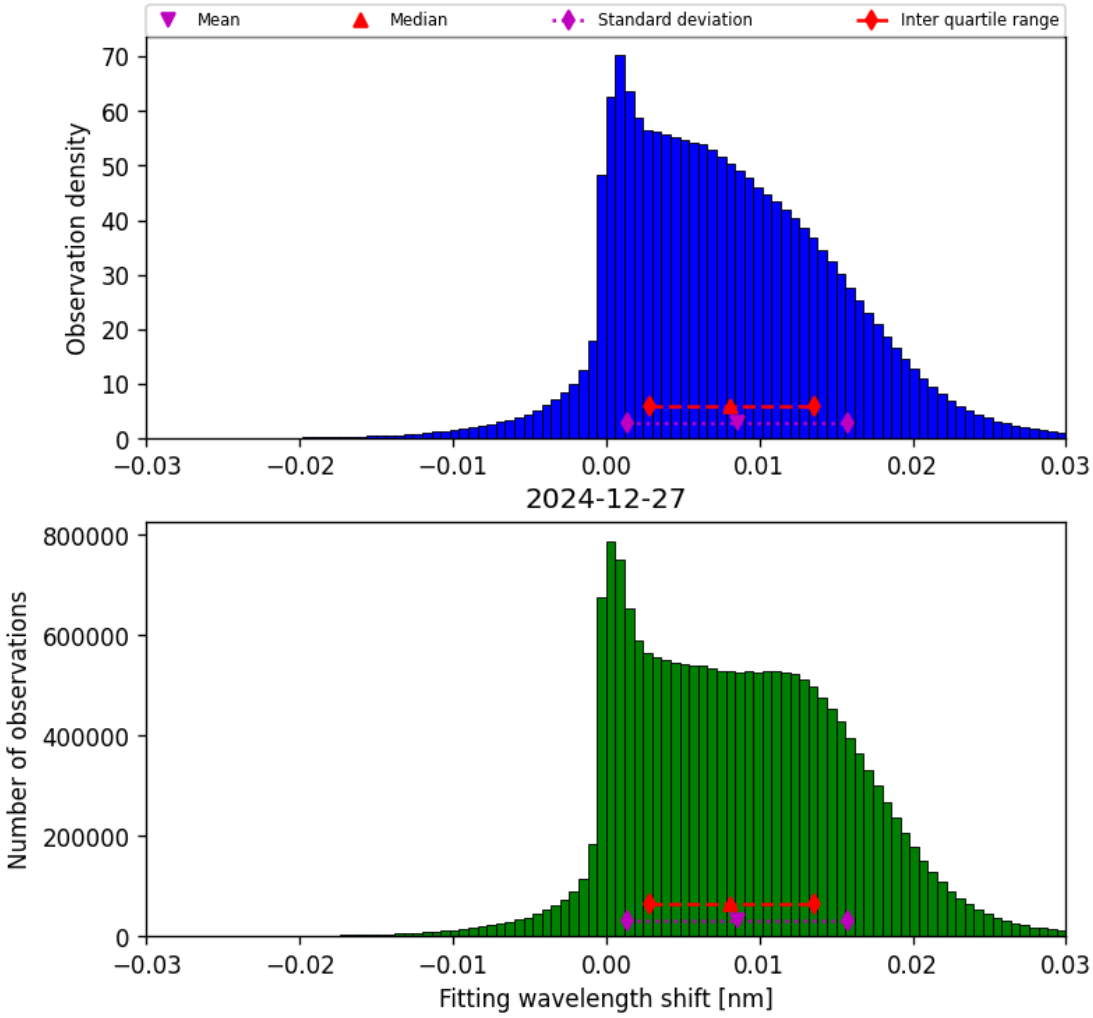

Figure 47: Histogram of “Fitting wavelength shift” for 2024-12-27 to 2024-12-28

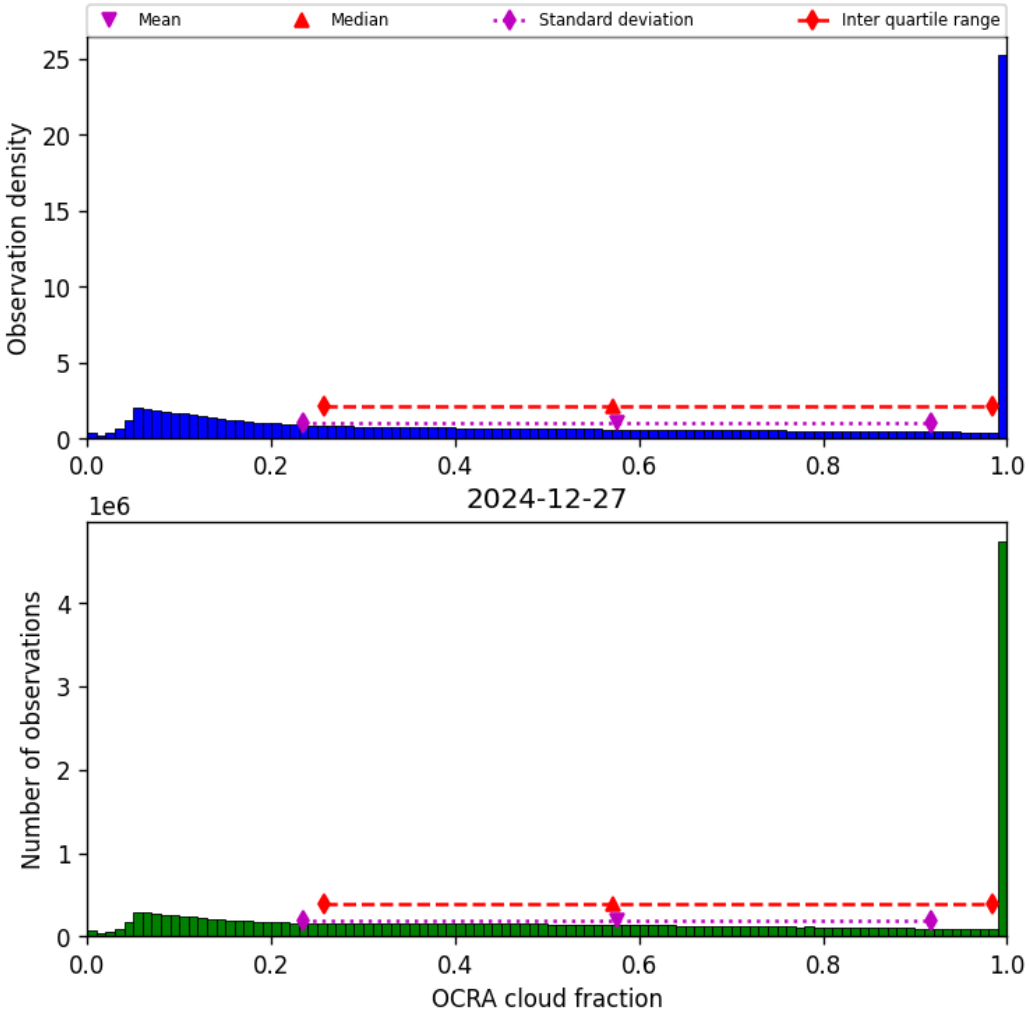

Figure 48: Histogram of “OCRA cloud fraction” for 2024-12-27 to 2024-12-28

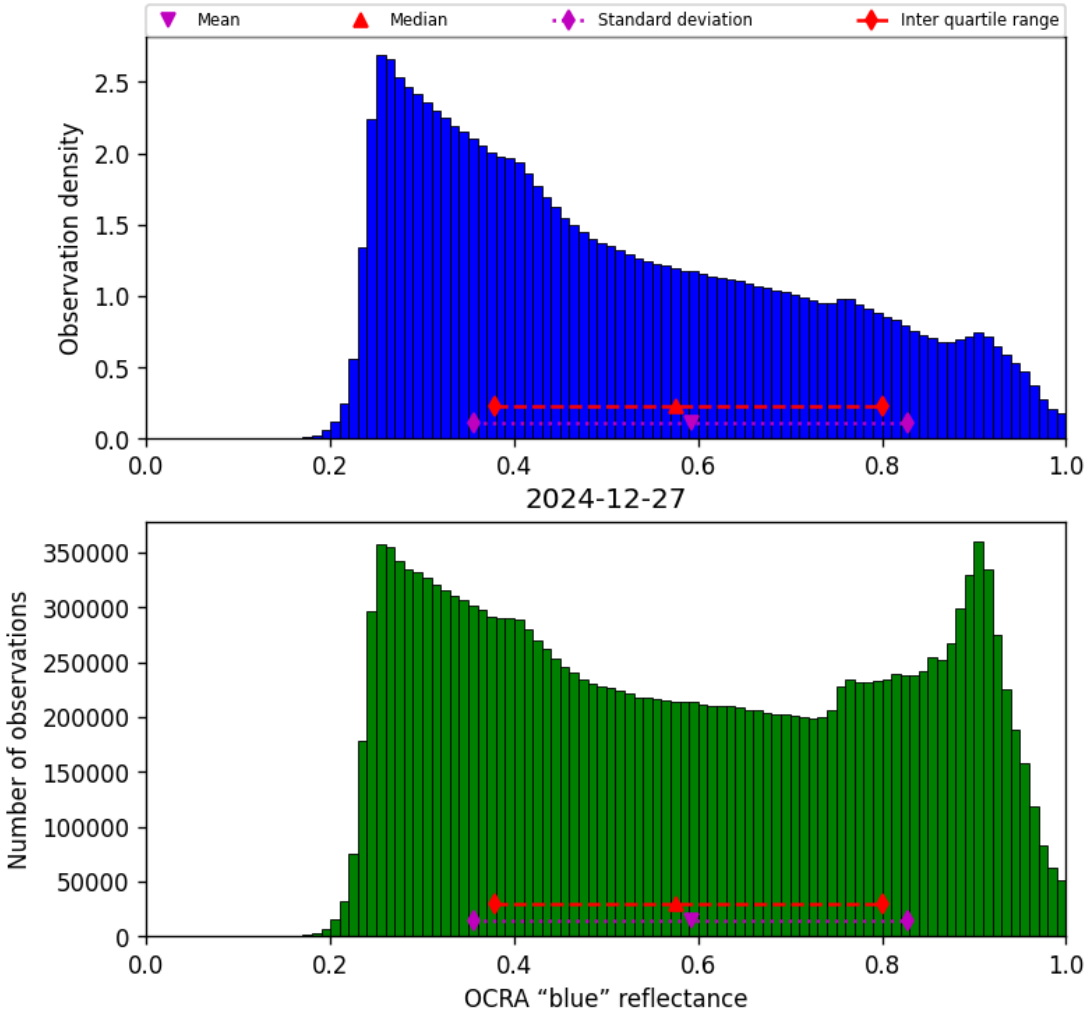

Figure 49: Histogram of “OCRA “blue” reflectance” for 2024-12-27 to 2024-12-28

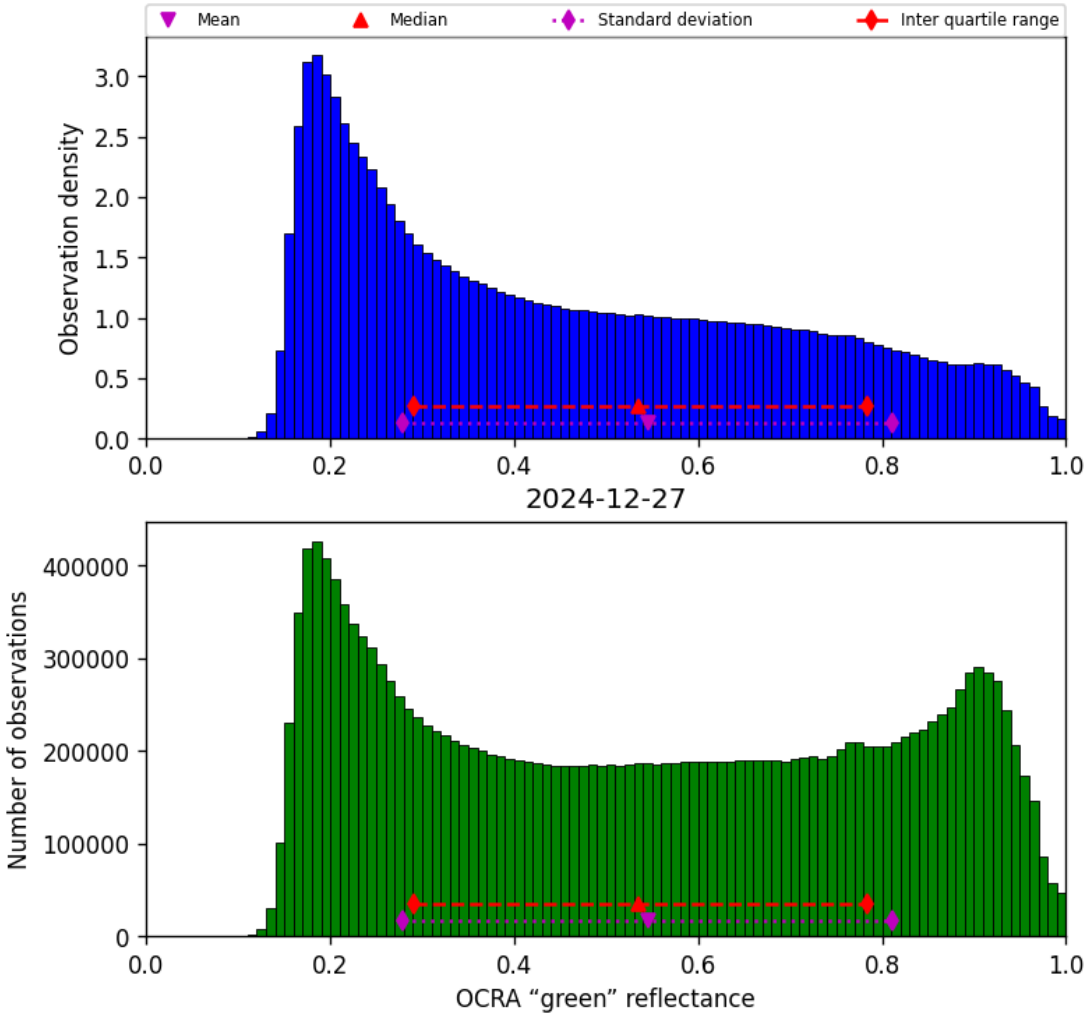

Figure 50: Histogram of “OCRA “green” reflectance” for 2024-12-27 to 2024-12-28

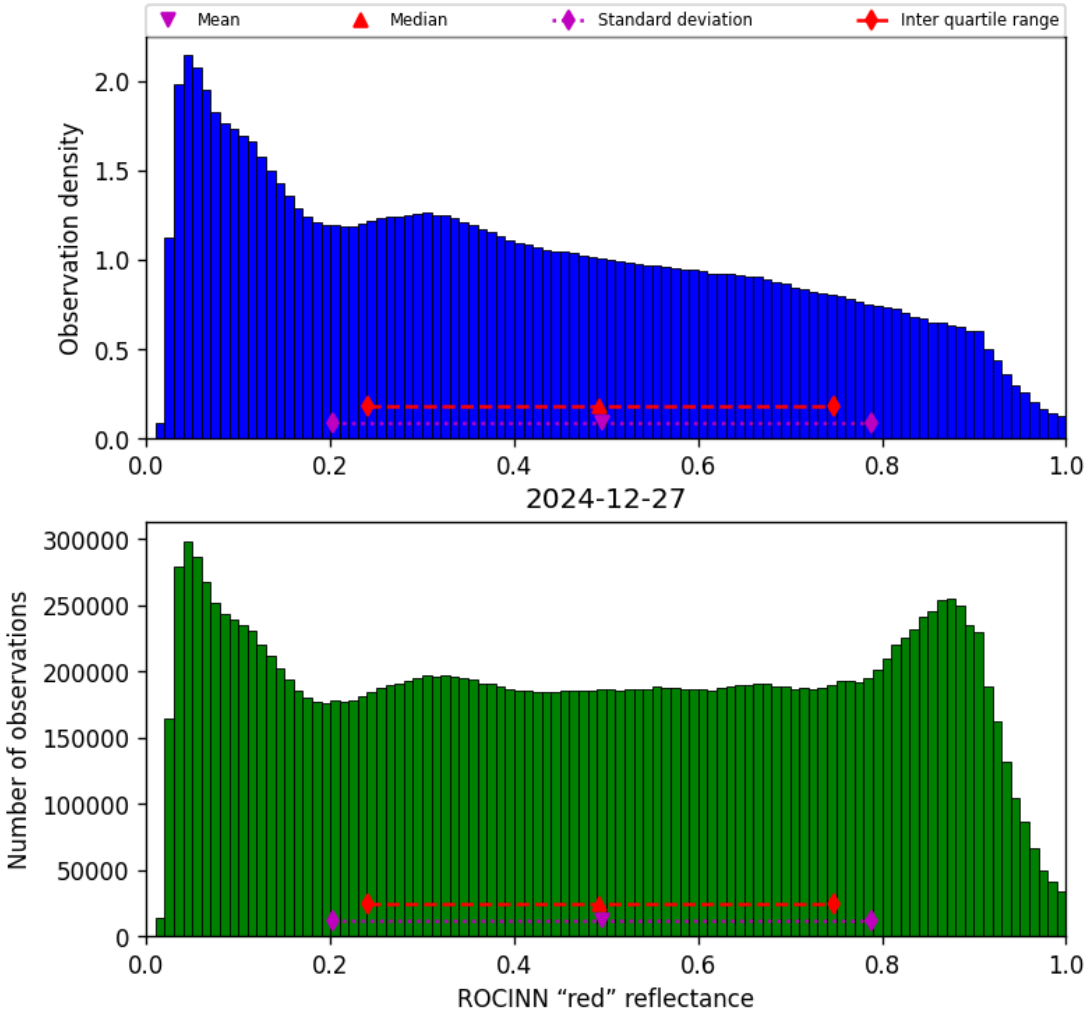

Figure 51: Histogram of “ROCINN “red” reflectance” for 2024-12-27 to 2024-12-28

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.

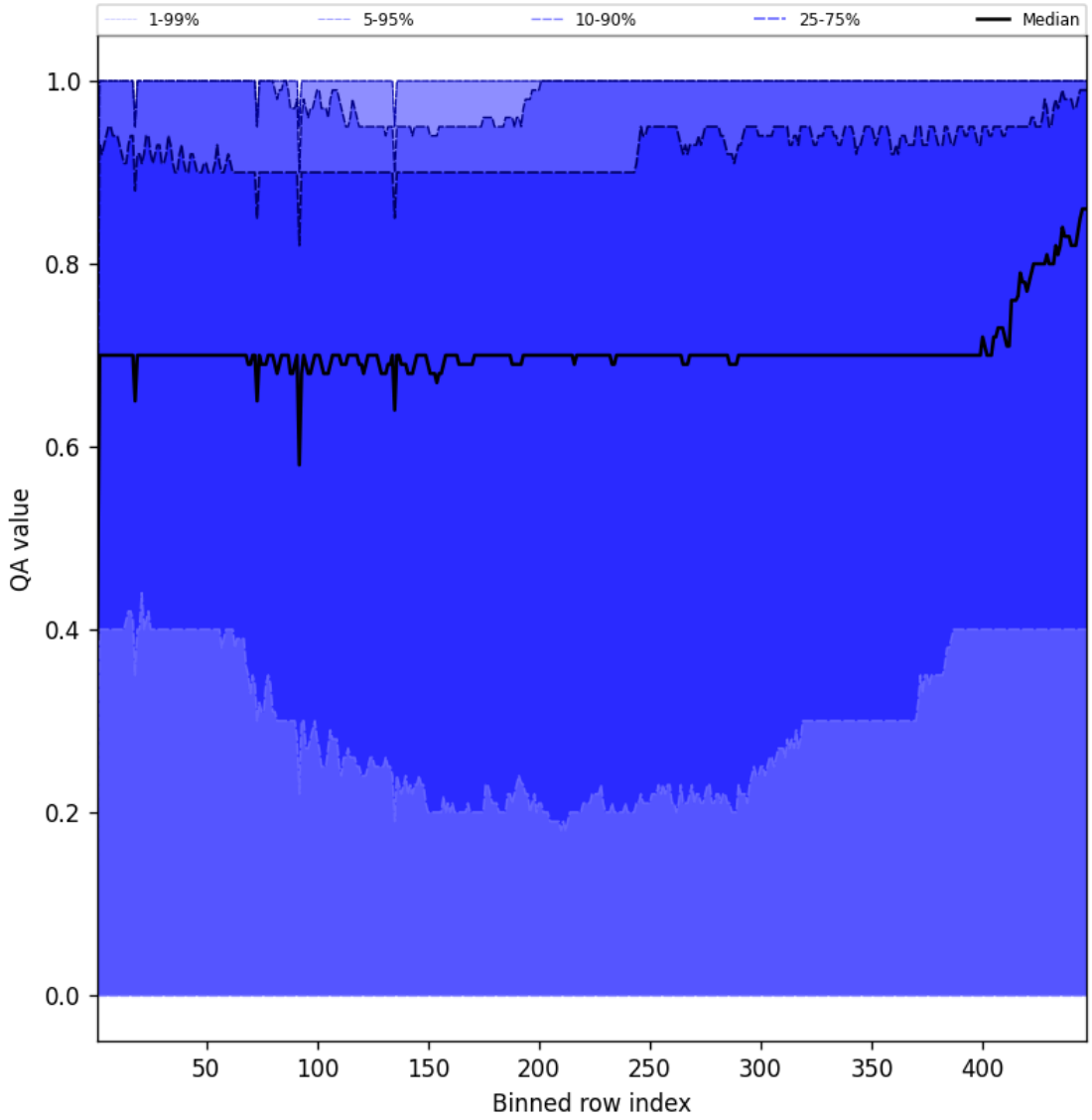

Figure 52: Along track statistics of “QA value” for 2024-12-27 to 2024-12-28

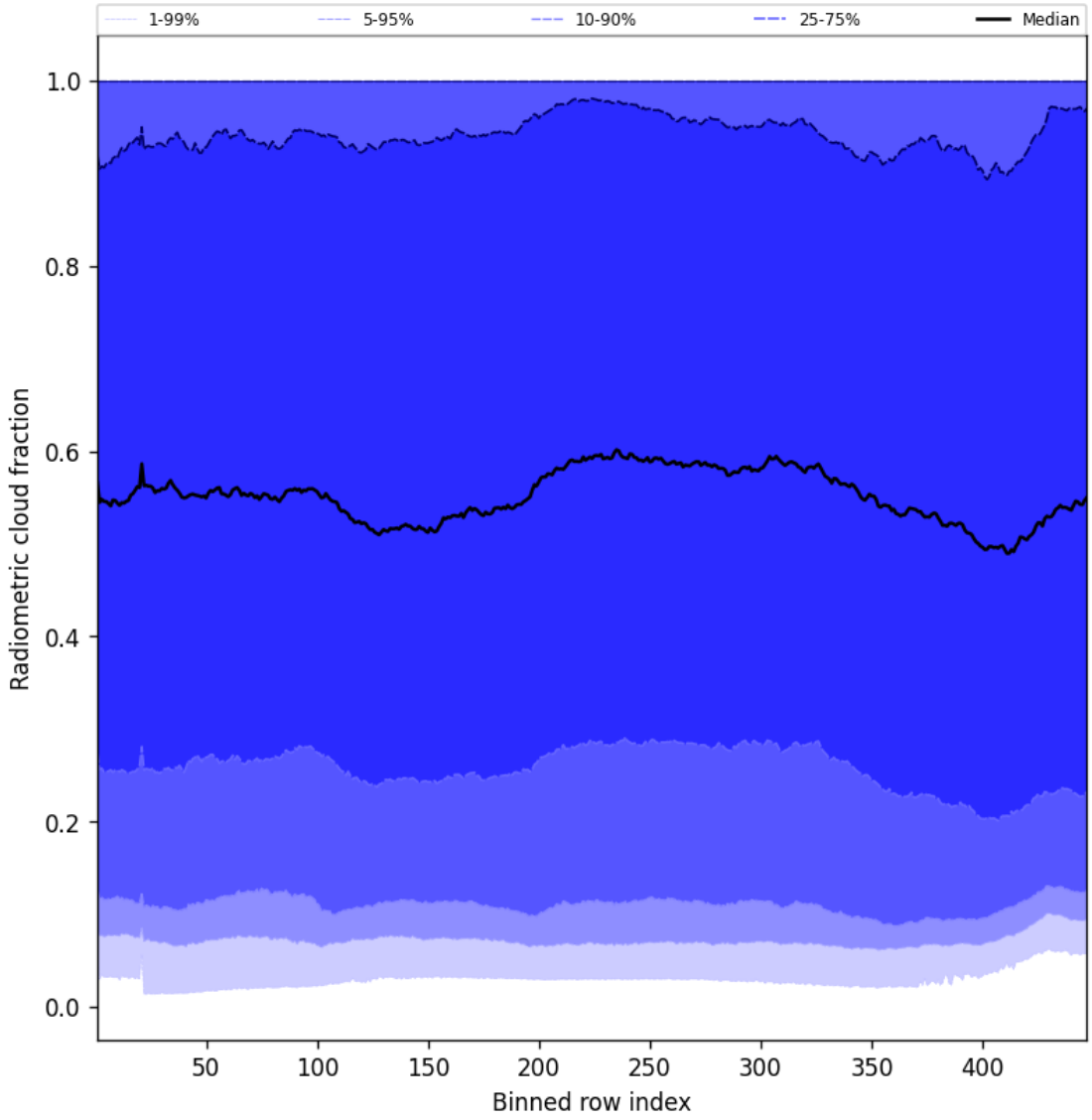

Figure 53: Along track statistics of “Radiometric cloud fraction” for 2024-12-27 to 2024-12-28

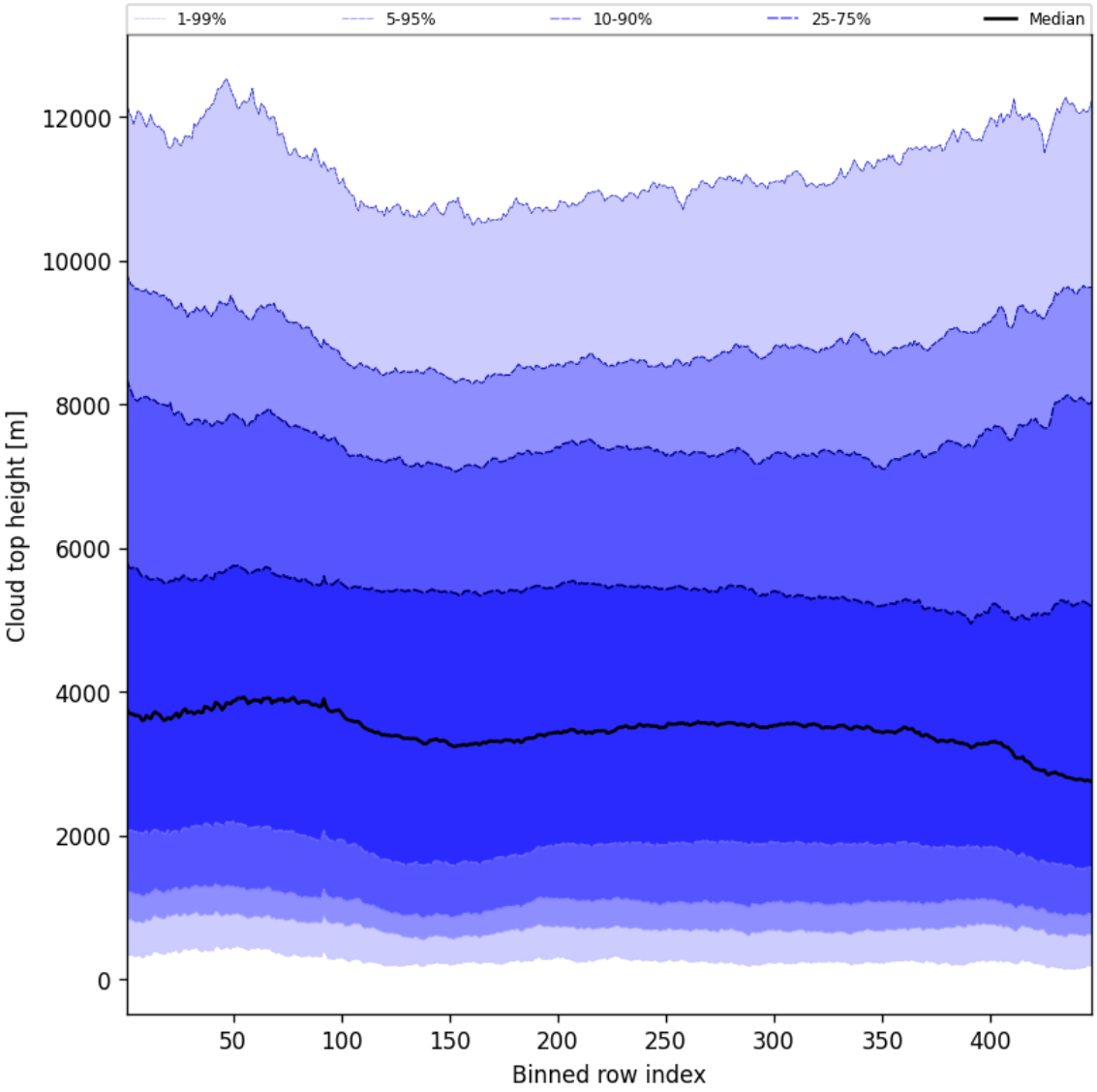

Figure 54: Along track statistics of “Cloud top height” for 2024-12-27 to 2024-12-28

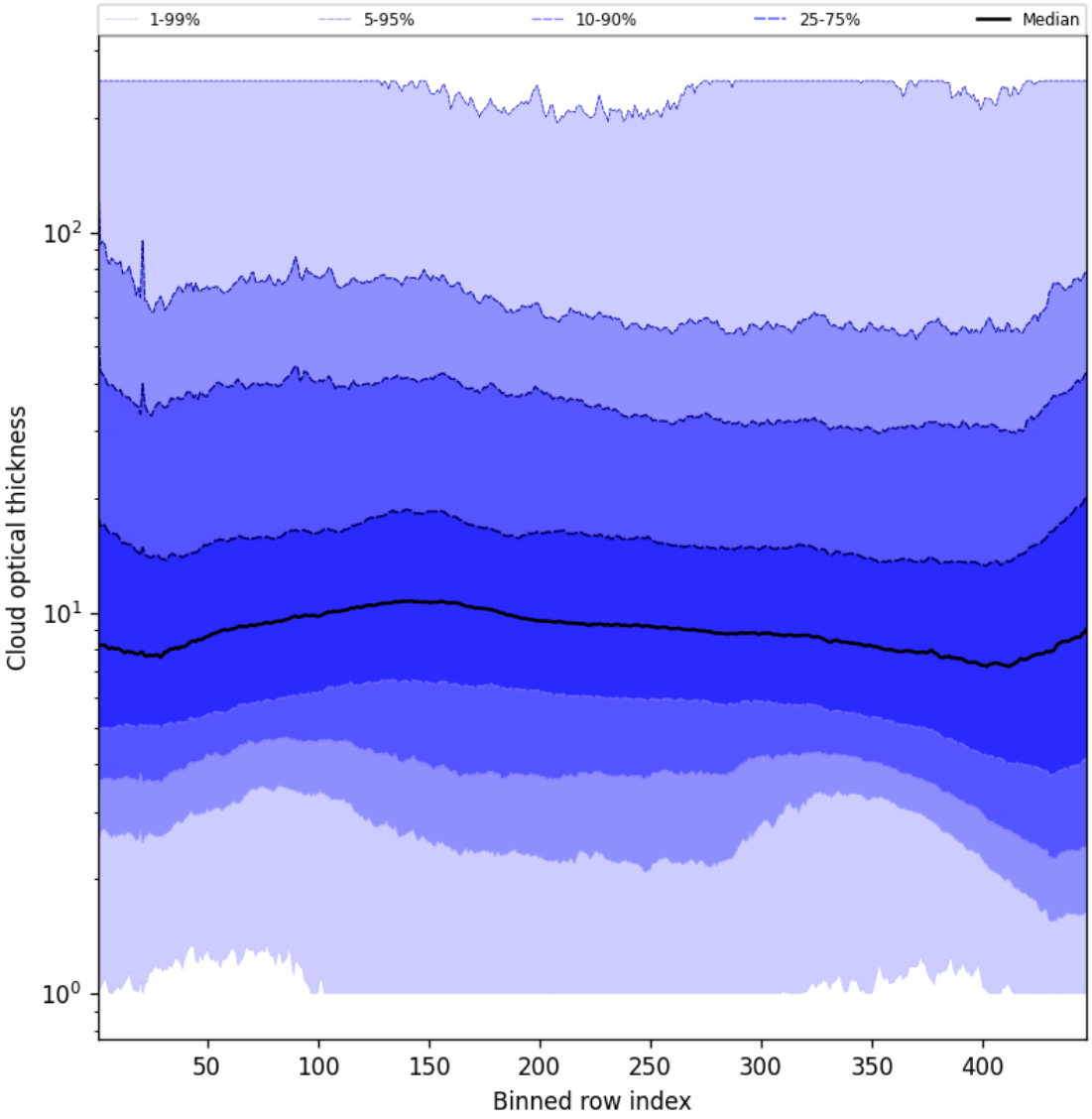

Figure 55: Along track statistics of “Cloud optical thickness” for 2024-12-27 to 2024-12-28

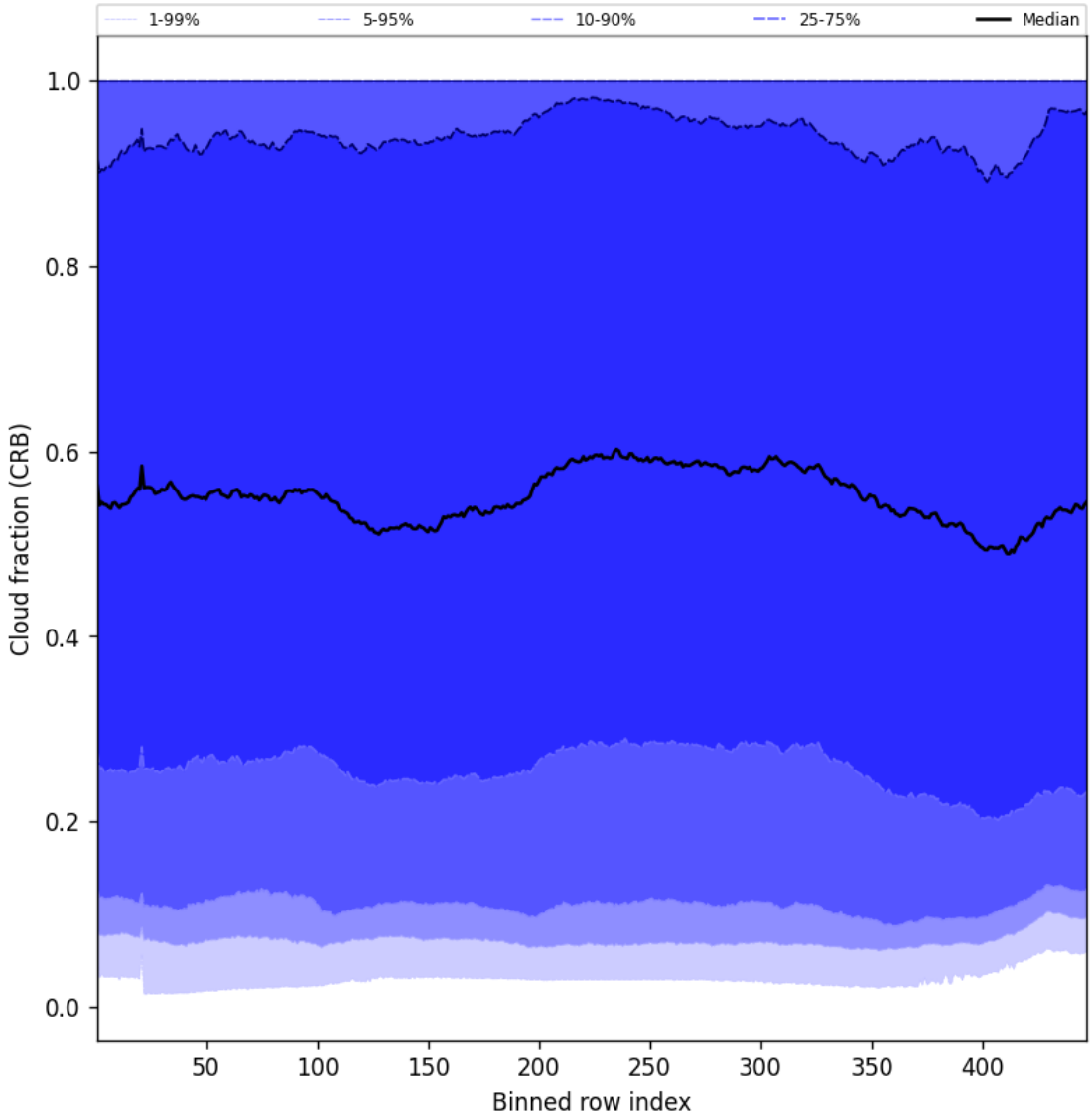

Figure 56: Along track statistics of “Cloud fraction (CRB)” for 2024-12-27 to 2024-12-28

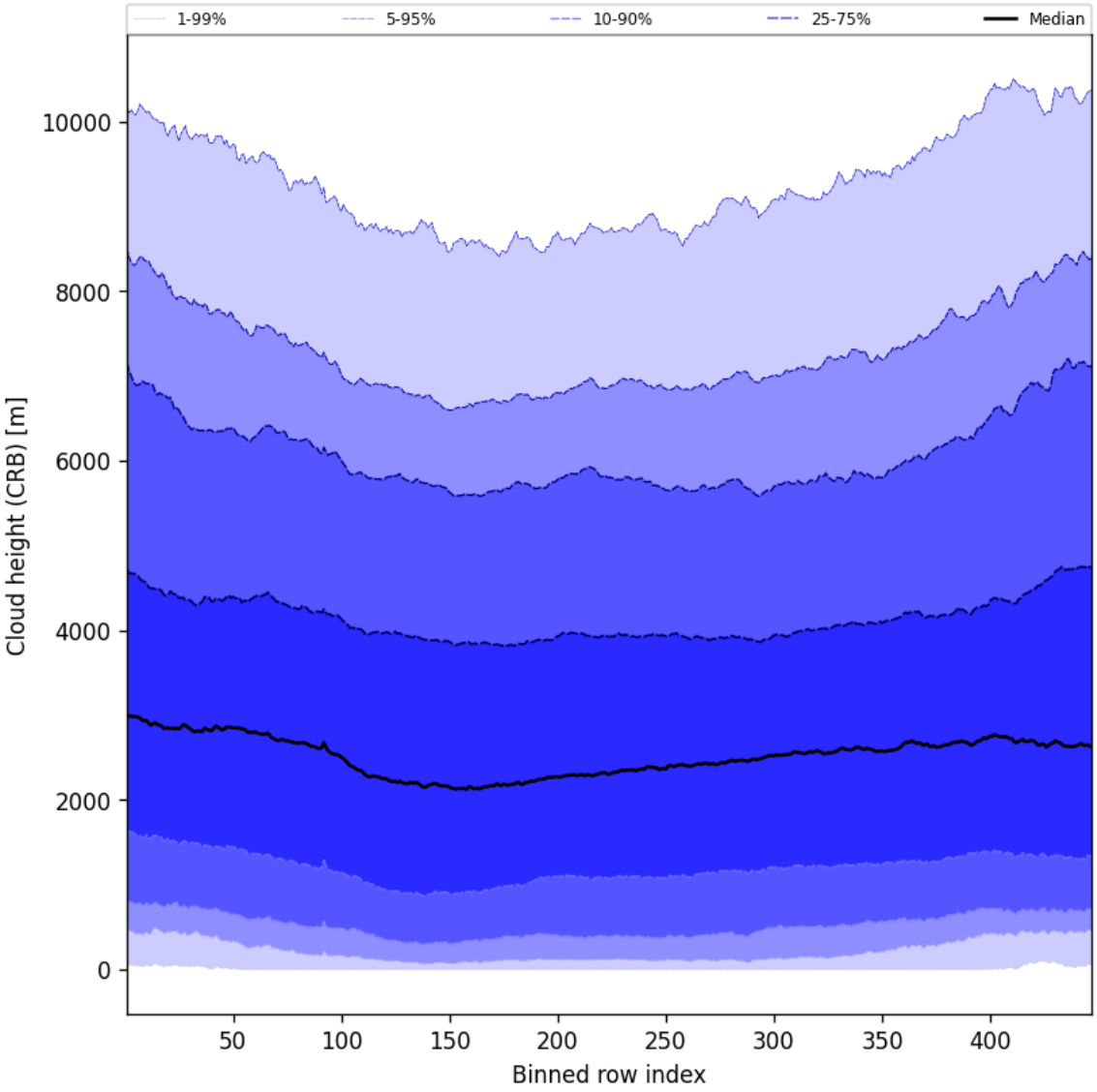

Figure 57: Along track statistics of “Cloud height (CRB)” for 2024-12-27 to 2024-12-28

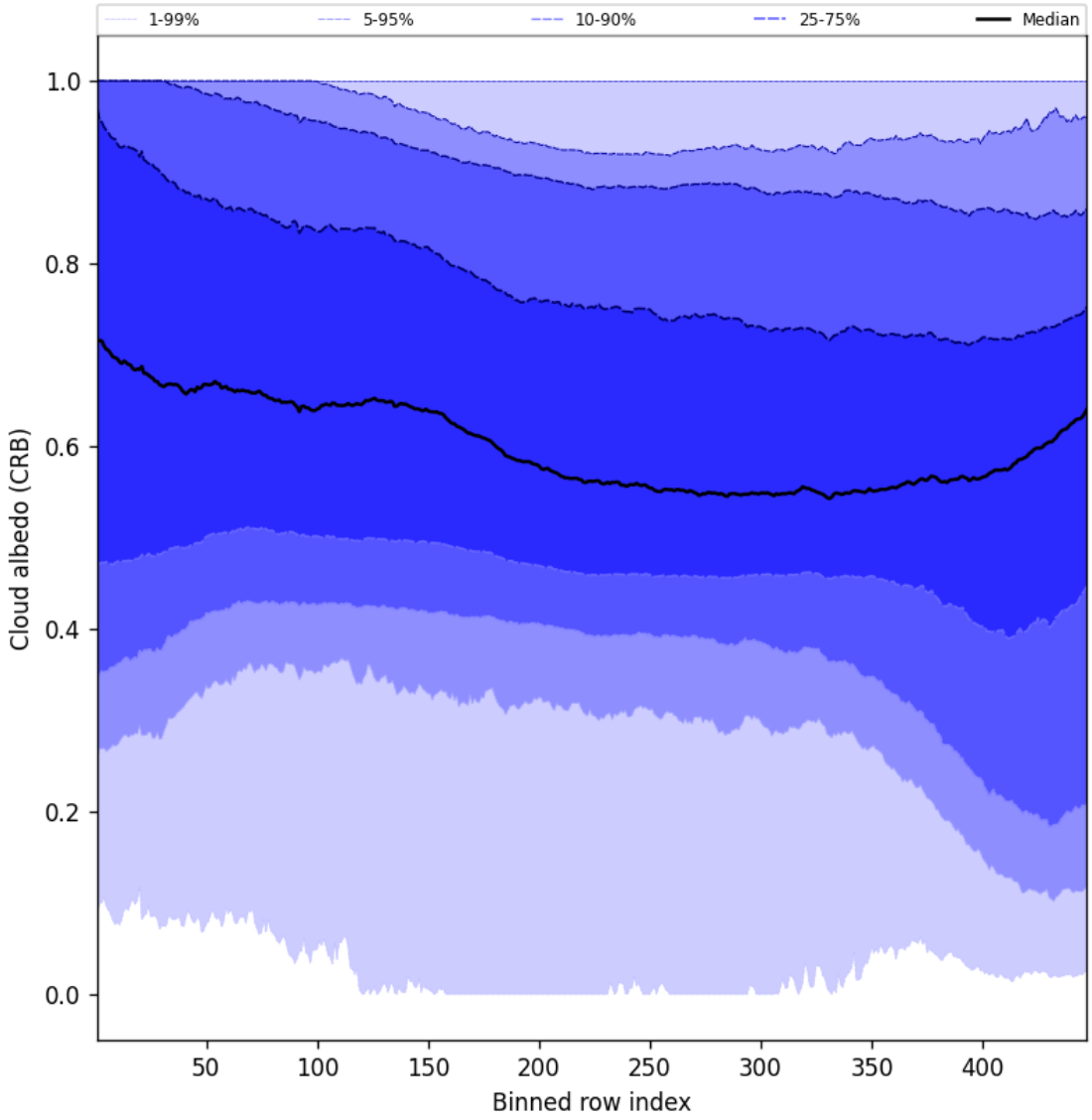

Figure 58: Along track statistics of “Cloud albedo (CRB)” for 2024-12-27 to 2024-12-28

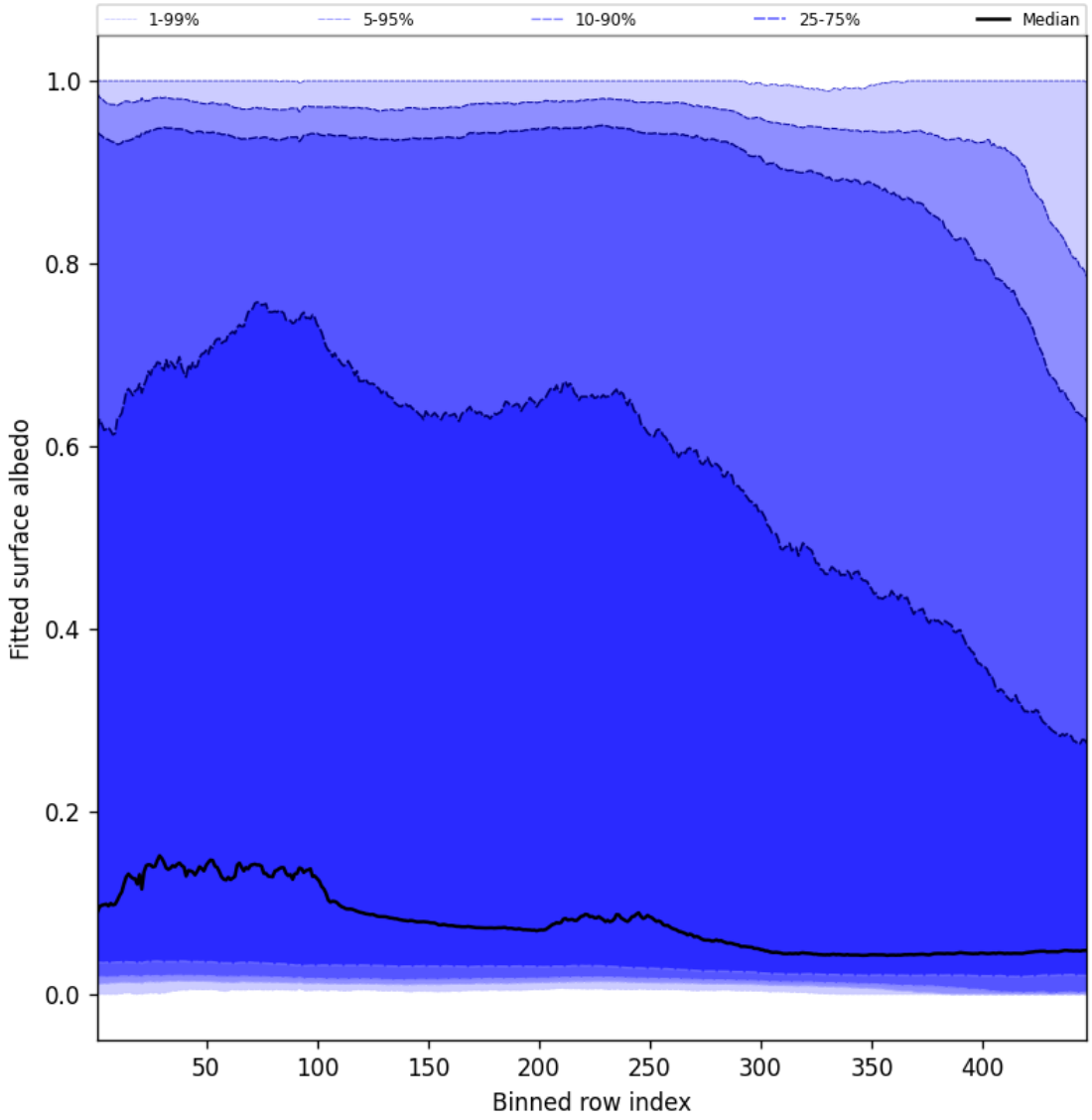

Figure 59: Along track statistics of “Fitted surface albedo” for 2024-12-27 to 2024-12-28

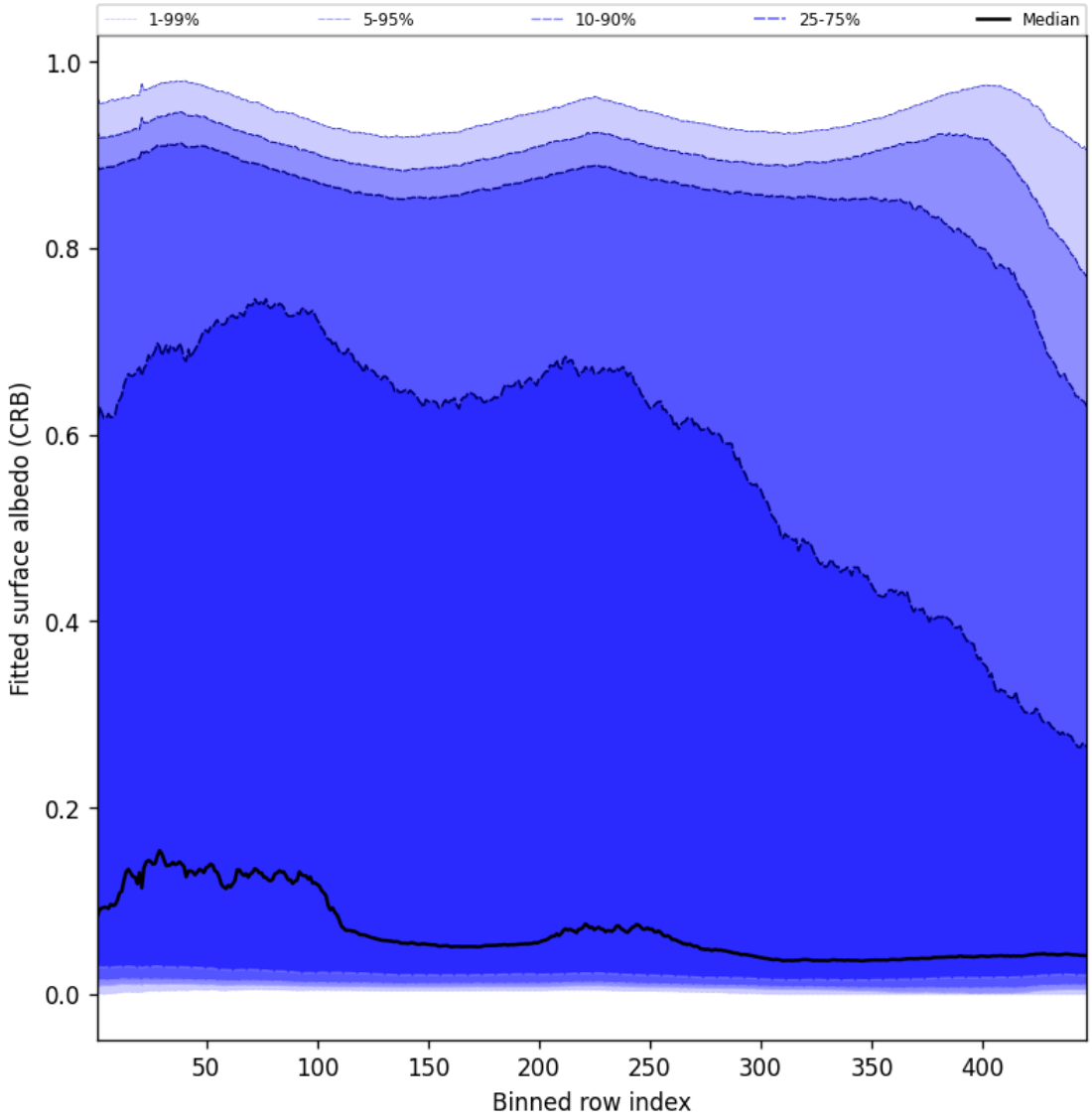

Figure 60: Along track statistics of “Fitted surface albedo (CRB)” for 2024-12-27 to 2024-12-28

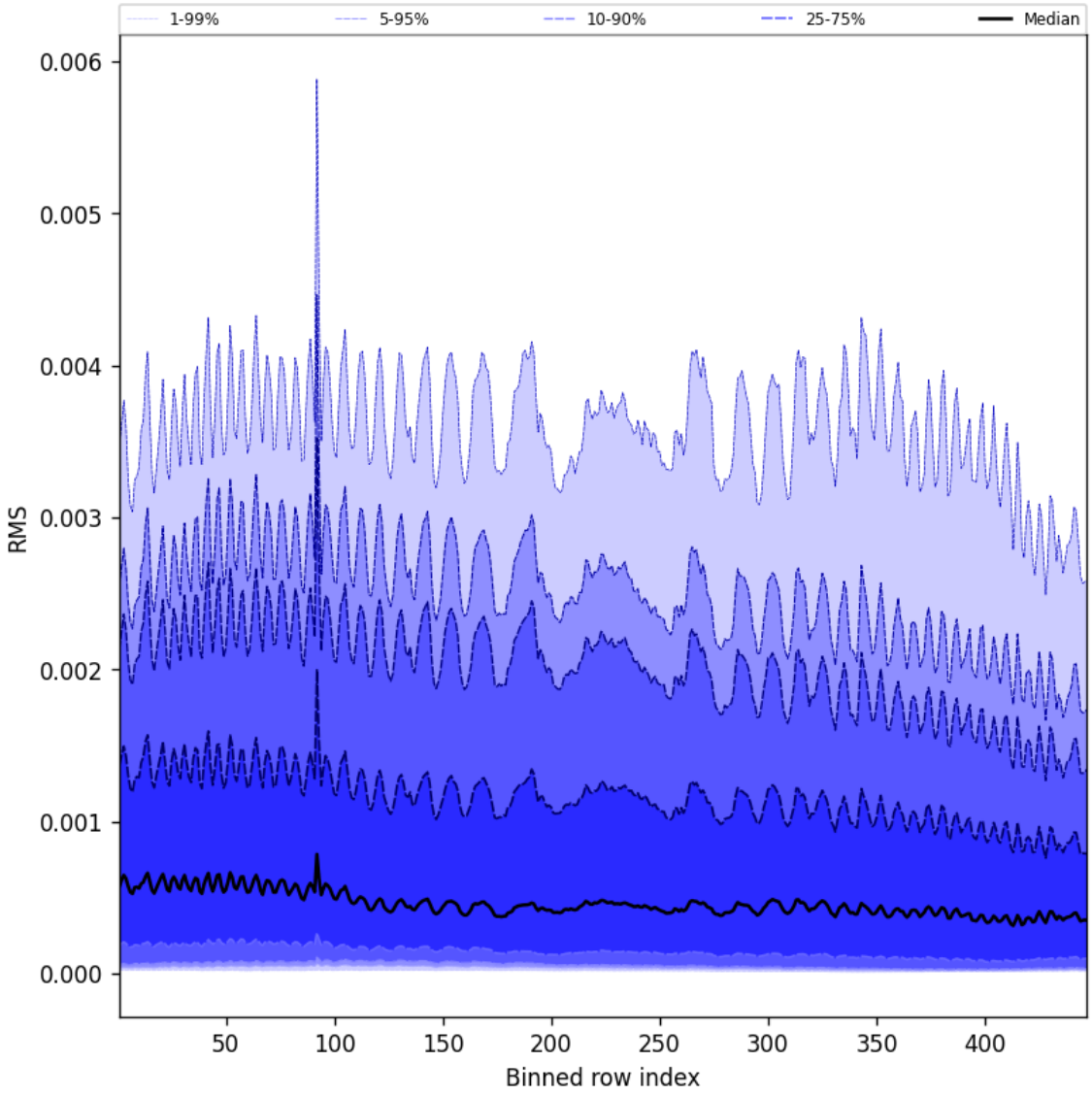

Figure 61: Along track statistics of “RMS” for 2024-12-27 to 2024-12-28

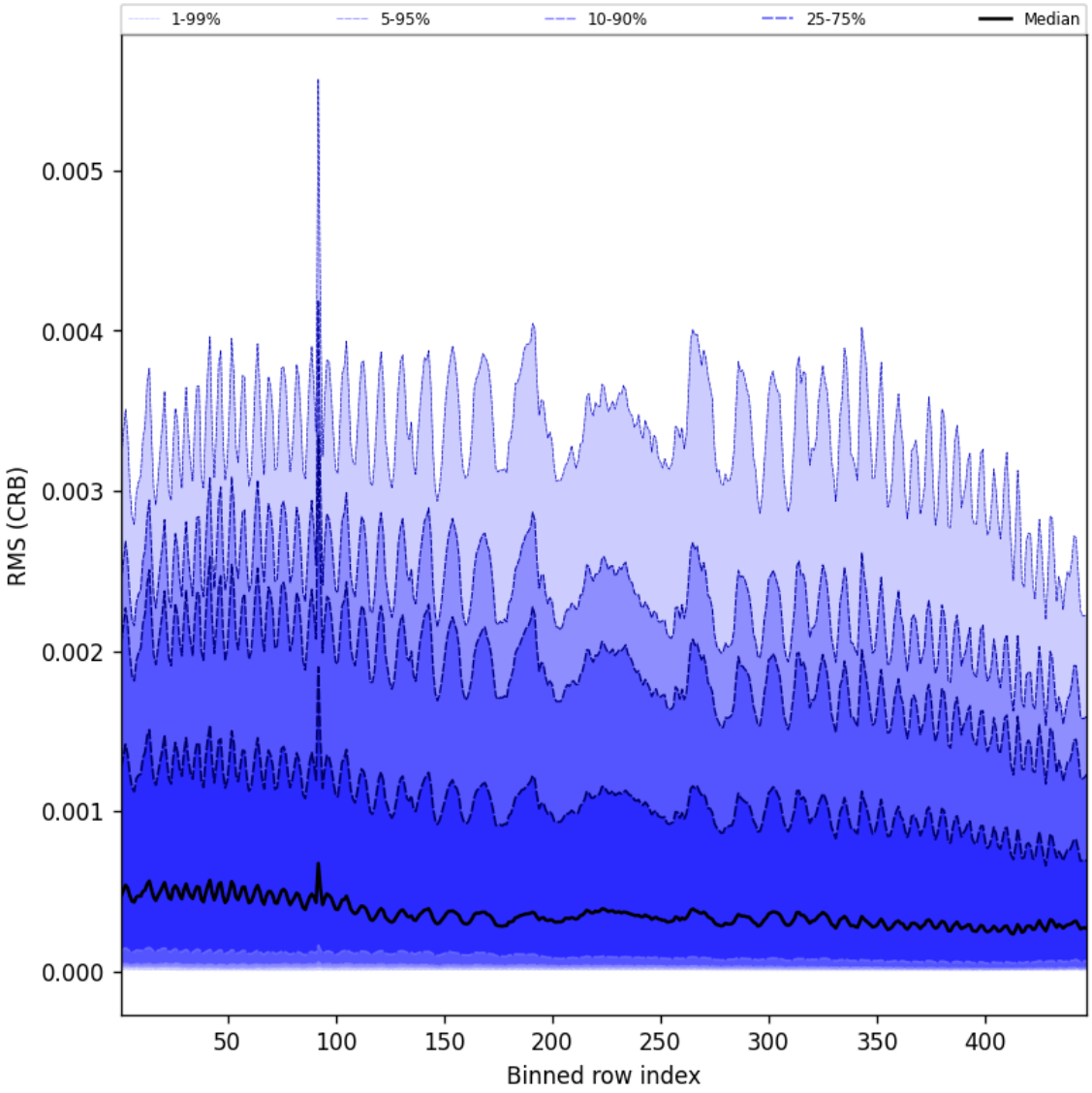

Figure 62: Along track statistics of “RMS (CRB)” for 2024-12-27 to 2024-12-28

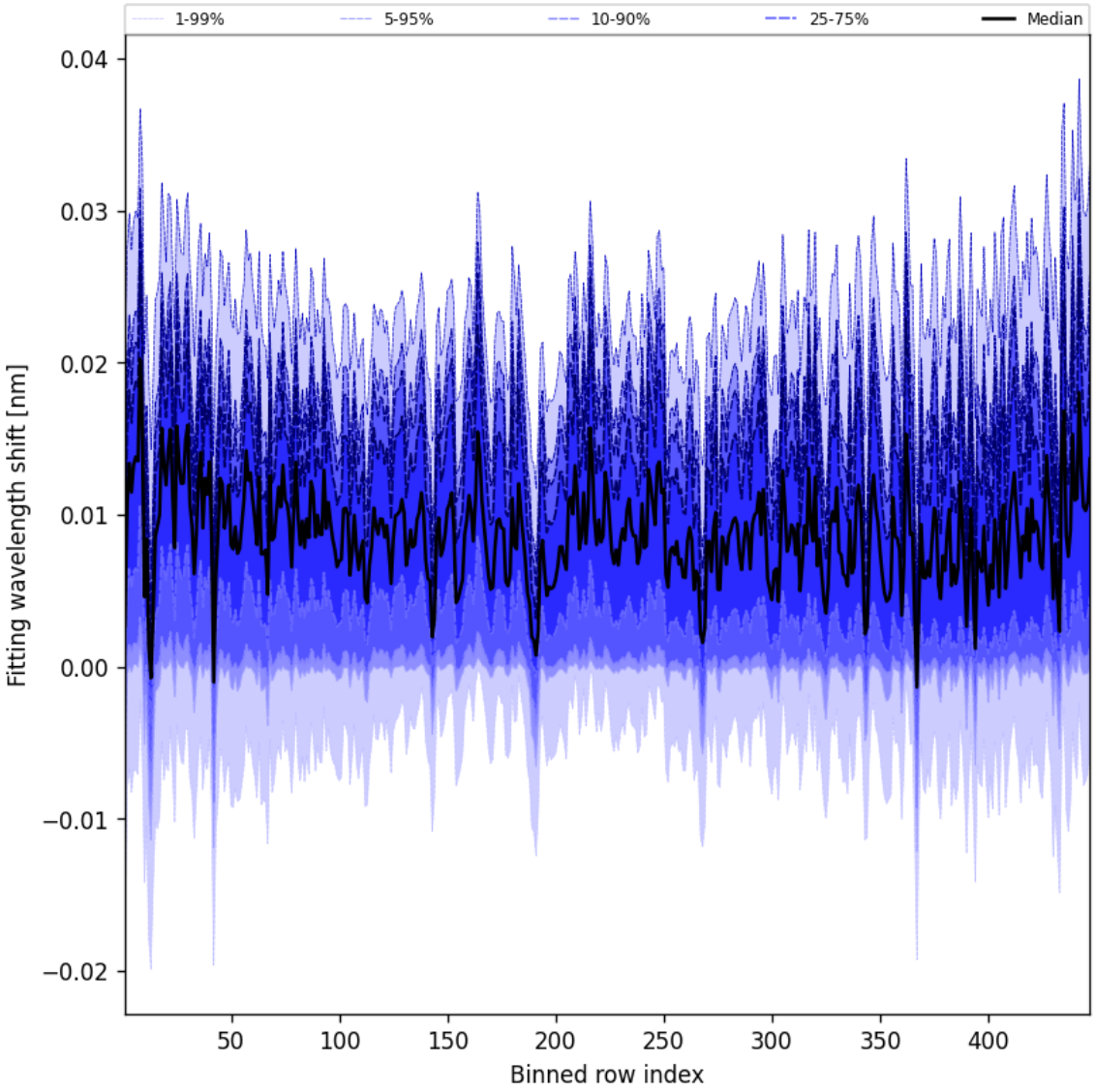

Figure 63: Along track statistics of “Fitting wavelength shift” for 2024-12-27 to 2024-12-28

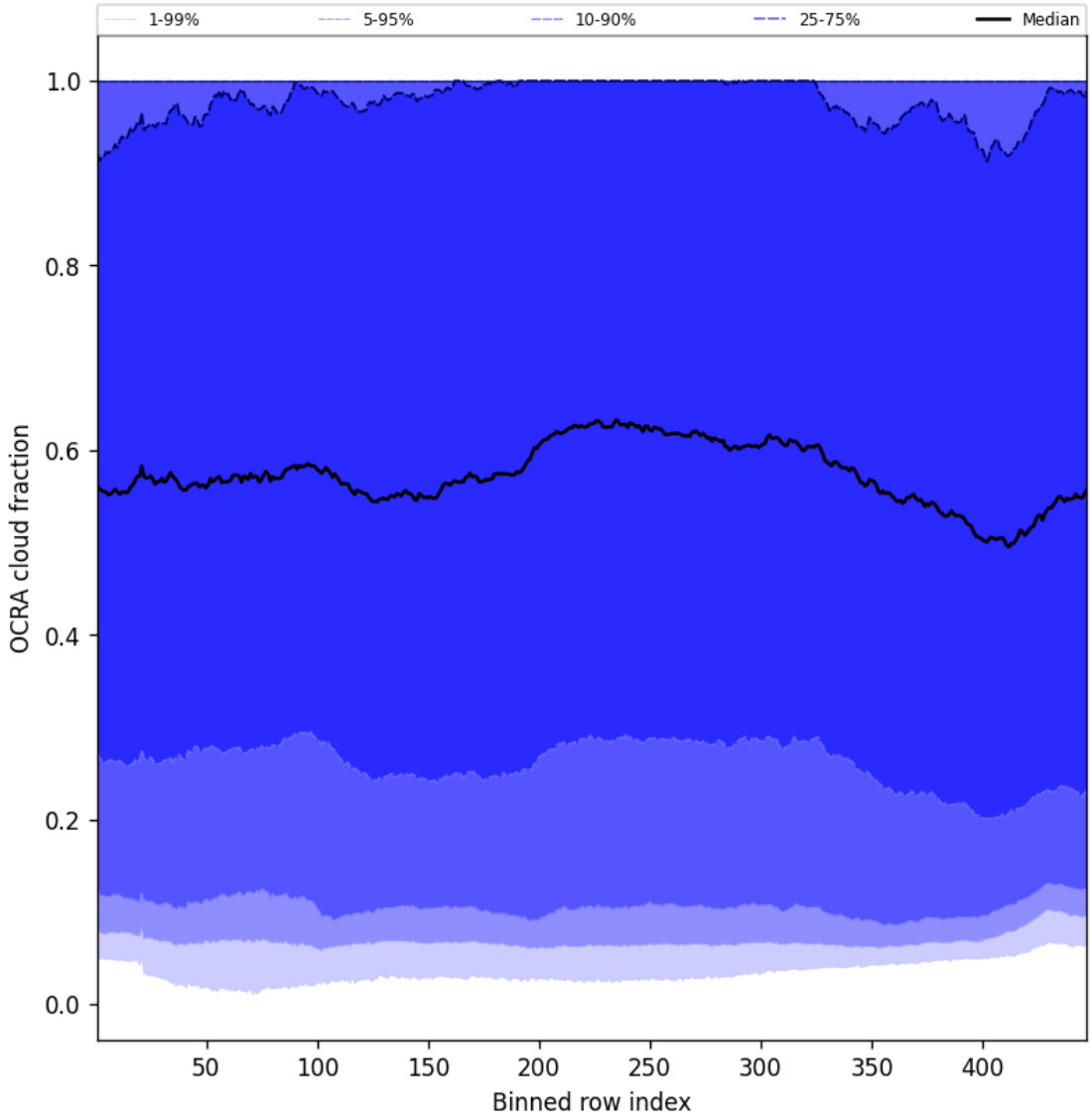

Figure 64: Along track statistics of “OCRA cloud fraction” for 2024-12-27 to 2024-12-28

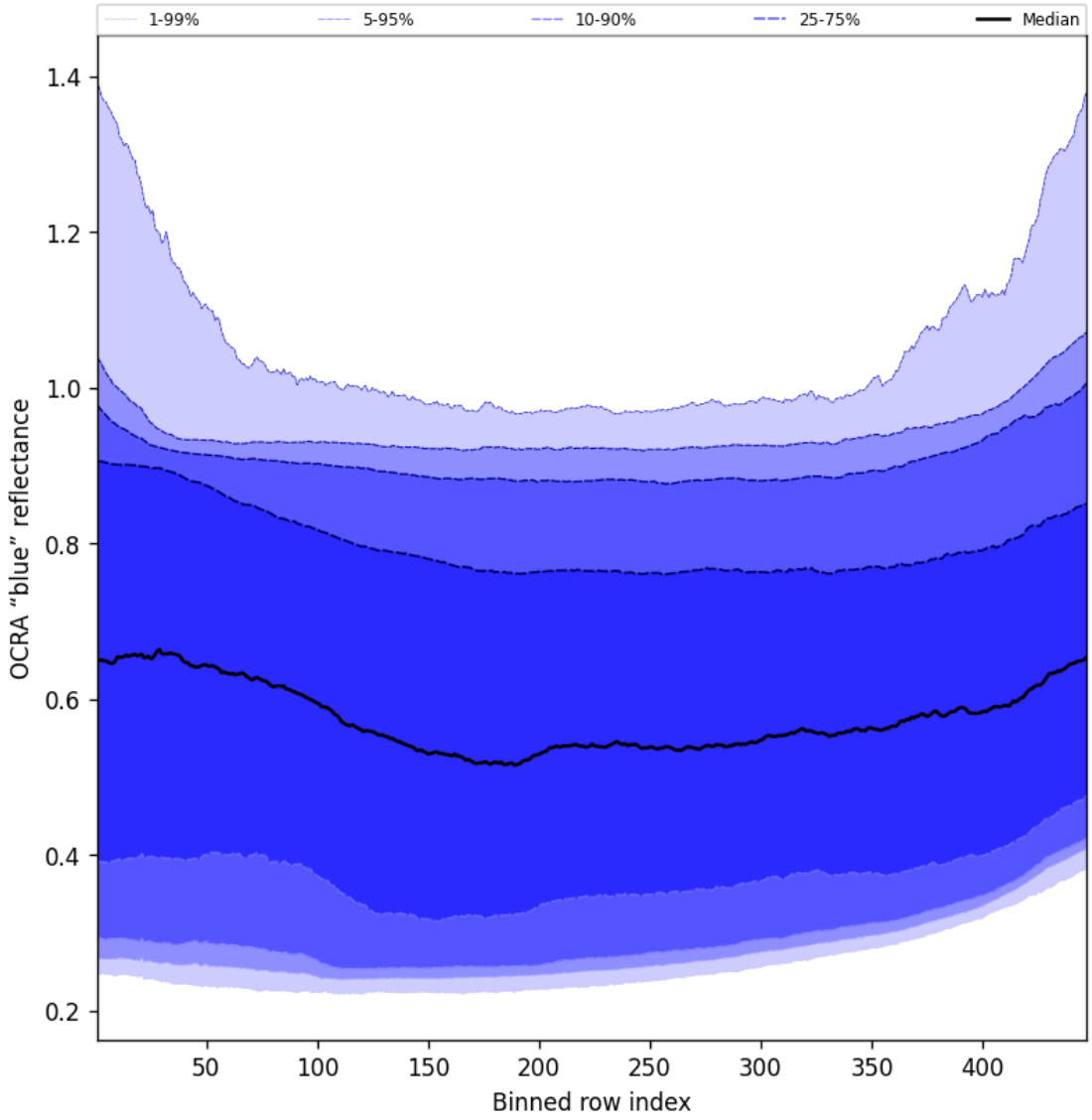

Figure 65: Along track statistics of “OCRA “blue” reflectance” for 2024-12-27 to 2024-12-28

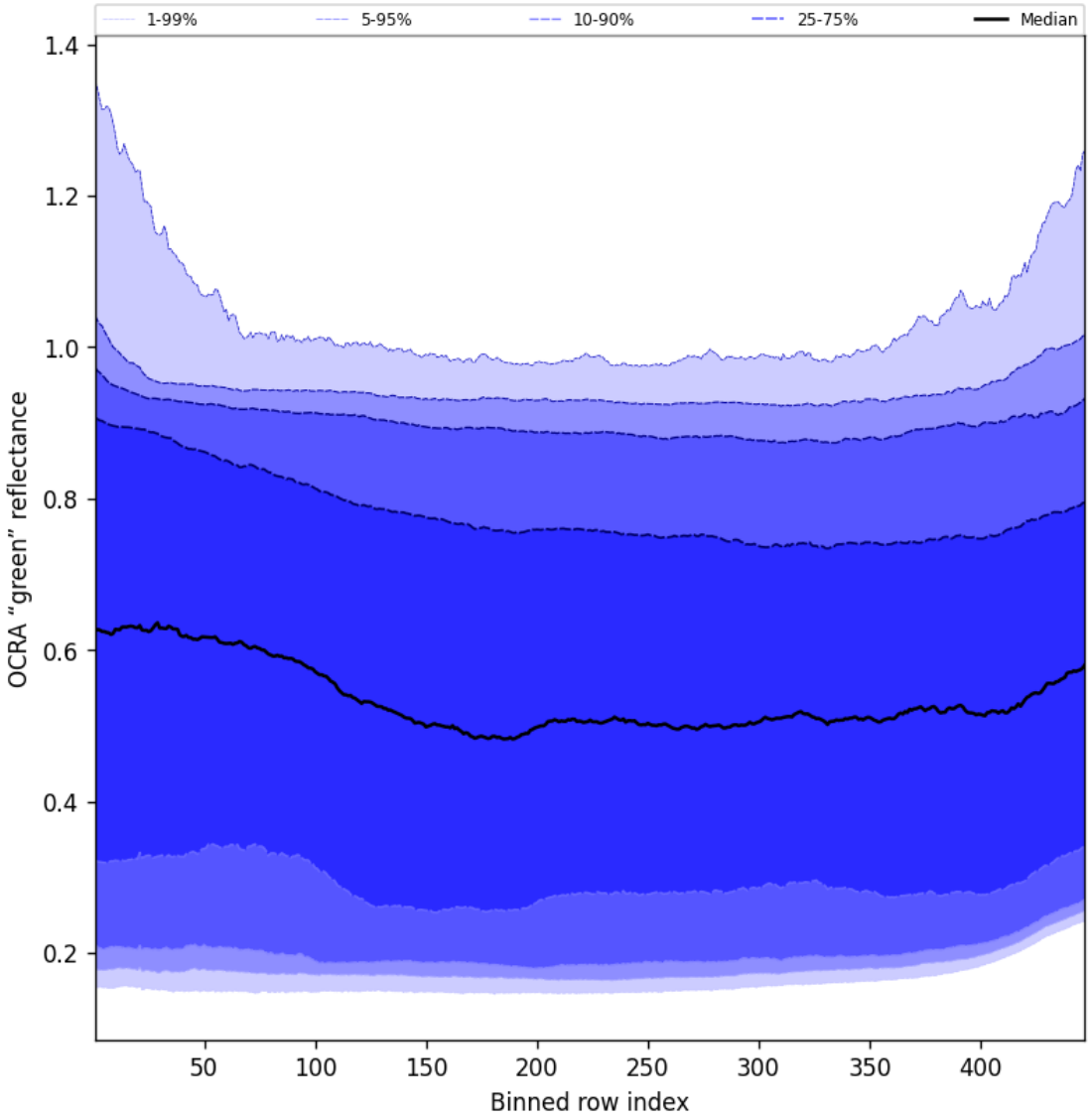

Figure 66: Along track statistics of "OCRA "green" reflectance" for 2024-12-27 to 2024-12-28

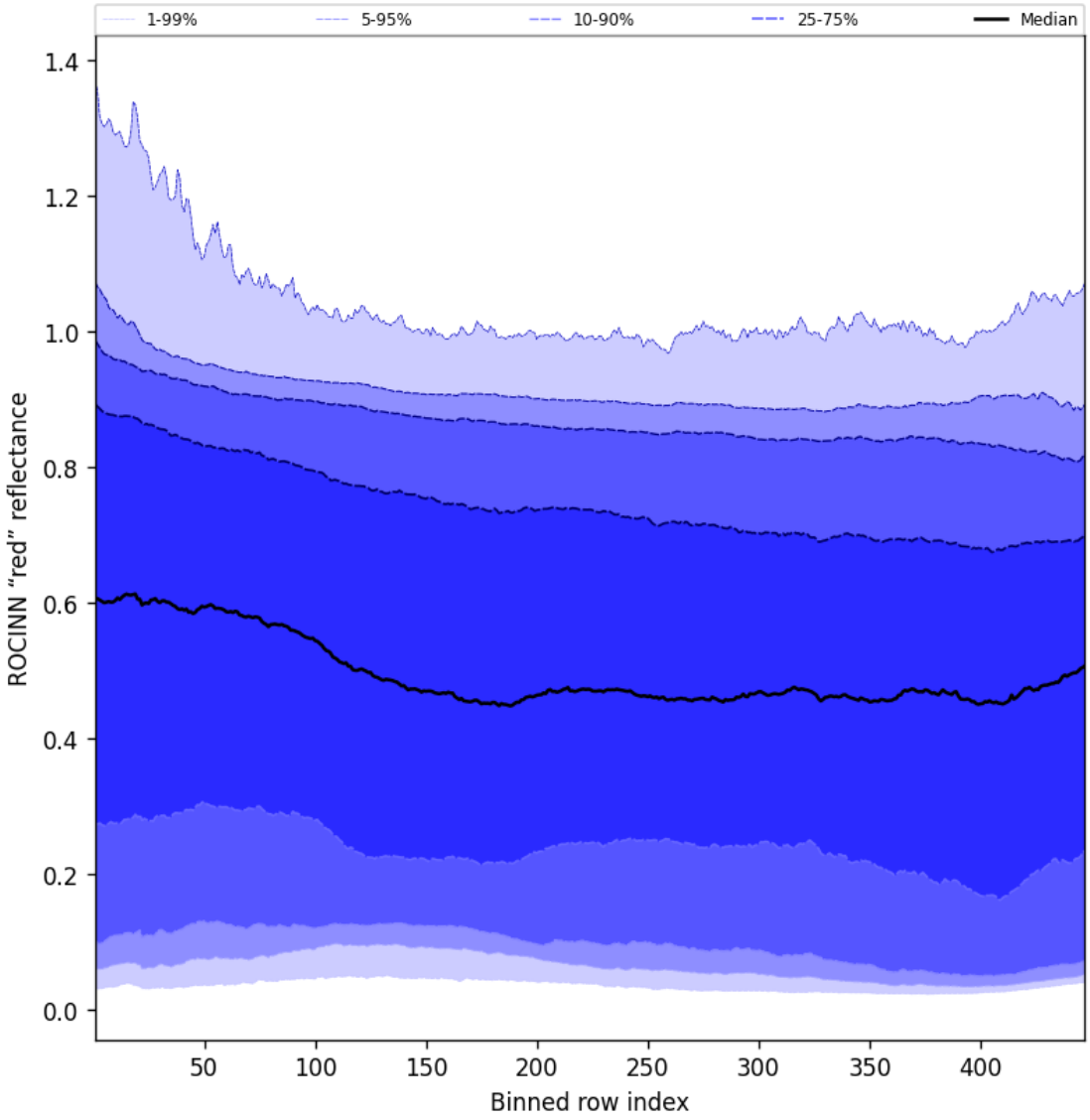

Figure 67: Along track statistics of “ROCINN “red” reflectance” for 2024-12-27 to 2024-12-28

10 Coincidence density

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

Contents

List of Figures

List of Tables

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