PyCAMA report generated by tropl2-proc

tropl2-proc

2024-12-30 (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]	0.599 ± 0.364	19345009	5.000×10^{-3}	0.600	0.700	0.0	1.000
cloud fraction [1]	0.570 ± 0.336	19345009	0.995	0.688	0.556	5.035×10^{-3}	1.000
cloud top height [m]	$(0.402 \pm 0.259) \times 10^4$	19345009	1.575×10^3	3.681×10^3	3.625×10^3	0.0	2.000×10^4
cloud optical thickness [1]	20.3 ± 38.0	19345009	9.34	10.9	9.21	1.000	250
cloud fraction crb [1]	0.570 ± 0.336	19345009	0.995	0.689	0.555	8.260×10^{-3}	1.000
cloud height crb [m]	$(0.304 \pm 0.222) \times 10^4$	19345009	75.0	3.070×10^3	2.664×10^3	0.0	2.000×10^4
cloud albedo crb [1]	0.620 ± 0.217	19345009	0.995	0.312	0.603	0.0	1.000
surface albedo fitted [1]	0.296 ± 0.349	19345009	2.500×10^{-2}	0.528	6.707×10^{-2}	0.0	1.000
surface albedo fitted crb [1]	0.283 ± 0.336	19345009	1.500×10^{-2}	0.533	5.375×10^{-2}	0.0	1.000
fitted root mean square [1]	$(7.850 \pm 21.610) \times 10^{-4}$	19345009	5.000×10^{-5}	9.825×10^{-4}	4.472×10^{-4}	8.249×10^{-7}	1.29
fitted root mean square crb [1]	$(6.929 \pm 23.216) \times 10^{-4}$	19345009	5.000×10^{-5}	9.466×10^{-4}	3.400×10^{-4}	7.737×10^{-7}	1.55
wavelength shift [nm]	$(8.513 \pm 7.177) \times 10^{-3}$	19345009	3.000×10^{-4}	1.073×10^{-2}	8.028×10^{-3}	-0.212	0.540
cloud fraction apriori [1]	0.580 ± 0.340	19345009	0.995	0.729	0.575	0.0	1.000
reflectance blue ocra [1]	0.596 ± 0.236	19345009	0.265	0.420	0.583	0.137	1.93
reflectance green ocra [1]	0.549 ± 0.266	19345009	0.185	0.491	0.544	8.102×10^{-2}	1.94
reflectance continuum aband [1]	0.500 ± 0.291	19345009	4.500×10^{-2}	0.503	0.504	1.286×10^{-2}	4.69

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]	2.825×10^{-2}	7.256×10^{-2}	0.113	0.165	0.261	0.950	1.000	1.000	1.000	1.000
cloud top height [m]	300	753	1.106×10^{3}	1.427×10^{3}	1.898×10^{3}	5.579×10^{3}	6.586×10^{3}	7.571×10^{3}	8.928×10^{3}	1.141×10^{4}
cloud optical thickness [1]	1.04	2.72	3.84	4.72	5.61	16.5	25.4	38.9	73.6	250
cloud fraction crb [1]	2.779×10^{-2}	7.186×10^{-2}	0.112	0.164	0.260	0.949	1.000	1.000	1.000	1.000
cloud height crb [m]	0.0	243	556	842	1.247×10^{3}	4.317×10^{3}	5.295×10^{3}	6.185×10^{3}	7.365×10^{3}	9.434×10^{3}
cloud albedo crb [1]	3.568×10^{-2}	0.263	0.375	0.429	0.474	0.785	0.870	0.925	0.988	1.000
surface albedo fitted [1]	0.0	8.803×10^{-3}	1.450×10^{-2}	1.965×10^{-2}	2.719×10^{-2}	0.555	0.832	0.921	0.965	1.000
surface albedo fitted crb [1]	2.612×10^{-5}	6.617×10^{-3}	1.056×10^{-2}	1.449×10^{-2}	2.049×10^{-2}	0.553	0.808	0.868	0.908	0.952
fitted root mean square [1]	1.552×10^{-5}	3.114×10^{-5}	5.099×10^{-5}	8.162×10^{-5}	1.420×10^{-4}	1.125×10^{-3}	1.577×10^{-3}	1.991×10^{-3}	2.517×10^{-3}	3.622×10^{-3}
fitted root mean square crb [1]	8.703×10^{-6}	1.942×10^{-5}	3.238×10^{-5}	5.005×10^{-5}	8.798×10^{-5}	1.035×10^{-3}	1.471×10^{-3}	1.865×10^{-3}	2.375×10^{-3}	3.385×10^{-3}
wavelength shift [nm]	-6.957×10^{-3}	-5.509×10^{-4}	2.388×10^{-4}	1.153×10^{-3}	2.828×10^{-3}	1.356×10^{-2}	1.592×10^{-2}	1.788×10^{-2}	2.041×10^{-2}	2.606×10^{-2}
cloud fraction apriori [1]	3.261×10^{-2}	6.882×10^{-2}	0.107	0.161	0.263	0.993	1.000	1.000	1.000	1.000
reflectance blue ocra [1]	0.235	0.261	0.289	0.324	0.382	0.802	0.874	0.910	0.946	1.08
reflectance green ocra [1]	0.153	0.177	0.200	0.232	0.294	0.785	0.864	0.908	0.945	1.04
reflectance continuum aband [1]	3.146×10^{-2}	5.916×10^{-2}	9.673×10^{-2}	0.147	0.245	0.749	0.830	0.879	0.924	1.06

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]	0.552 ± 0.397	7375266	0.850	0.680	0.0	1.000	5.000×10^{-2}	0.900
cloud fraction [1]	0.545 ± 0.337	7375266	0.673	0.525	5.035×10^{-3}	1.000	0.228	0.900
cloud top height [m]	$(0.441 \pm 0.271) \times 10^4$	7375266	4.071×10^3	4.024×10^3	0.0	2.000×10^4	2.139×10^3	6.209×10^3
cloud optical thickness [1]	30.2 ± 51.2	7375266	19.6	10.9	1.000	250	6.52	26.1
cloud fraction crb [1]	0.543 ± 0.337	7375266	0.671	0.521	8.260×10^{-3}	1.000	0.226	0.897
cloud height crb [m]	$(0.365 \pm 0.229) \times 10^4$	7375266	3.571×10^3	3.431×10^3	0.0	2.000×10^4	1.668×10^3	5.239×10^3
cloud albedo crb [1]	0.607 ± 0.206	7375266	0.265	0.593	0.0	1.000	0.477	0.742
surface albedo fitted [1]	0.180 ± 0.201	7375266	0.269	6.619×10^{-2}	0.0	1.000	3.076×10^{-2}	0.300
surface albedo fitted crb [1]	0.171 ± 0.200	7375266	0.271	5.247×10^{-2}	0.0	1.000	2.189×10^{-2}	0.293
fitted root mean square [1]	$(4.173 \pm 5.775) \times 10^{-4}$	7375266	4.284×10^{-4}	2.323×10^{-4}	8.249×10^{-7}	0.205	9.316×10^{-5}	5.215×10^{-4}
fitted root mean square crb [1]	$(3.328 \pm 4.967) \times 10^{-4}$	7375266	3.512×10^{-4}	1.320×10^{-4}	7.737×10^{-7}	0.114	4.824×10^{-5}	3.994×10^{-4}
wavelength shift [nm]	$(6.148 \pm 6.438) \times 10^{-3}$	7375266	8.663×10^{-3}	4.917×10^{-3}	-4.348×10^{-2}	0.100	1.314×10^{-3}	9.977×10^{-3}
cloud fraction apriori [1]	0.548 ± 0.342	7375266	0.698	0.528	0.0	1.000	0.222	0.920
reflectance blue ocra [1]	0.552 ± 0.213	7375266	0.319	0.530	0.137	1.93	0.376	0.695
reflectance green ocra [1]	0.495 ± 0.236	7375266	0.382	0.477	8.422×10^{-2}	1.94	0.285	0.667
reflectance continuum aband [1]	0.443 ± 0.268	7375266	0.404	0.428	1.387×10^{-2}	4.69	0.226	0.630

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]	0.628 ± 0.339	11969743	0.500	0.700	0.0	1.000	0.400	0.900
cloud fraction [1]	0.586 ± 0.334	11969743	0.691	0.574	5.146×10^{-3}	1.000	0.284	0.975
cloud top height [m]	$(0.378 \pm 0.247) \times 10^4$	11969743	3.440×10^3	3.421×10^3	0.0	2.000×10^4	1.772×10^3	5.212×10^3
cloud optical thickness [1]	14.1 ± 25.0	11969743	7.98	8.56	1.000	250	5.26	13.2
cloud fraction crb [1]	0.586 ± 0.334	11969743	0.692	0.575	8.463×10^{-3}	1.000	0.284	0.975
cloud height crb [m]	$(0.267 \pm 0.209) \times 10^4$	11969743	2.623×10^3	2.328×10^3	0.0	2.000×10^4	1.044×10^3	3.668×10^3
cloud albedo crb [1]	0.628 ± 0.223	11969743	0.340	0.613	0.0	1.000	0.472	0.812
surface albedo fitted [1]	0.367 ± 0.398	11969743	0.809	6.810×10^{-2}	0.0	1.000	2.507×10^{-2}	0.834
surface albedo fitted crb [1]	0.351 ± 0.382	11969743	0.789	5.500×10^{-2}	0.0	1.000	1.956×10^{-2}	0.808
fitted root mean square [1]	$(1.012 \pm 2.685) \times 10^{-3}$	11969743	1.272×10^{-3}	7.214×10^{-4}	1.071×10^{-6}	1.29	2.246×10^{-4}	1.496×10^{-3}
fitted root mean square crb [1]	$(9.148 \pm 29.034) \times 10^{-4}$	11969743	1.226×10^{-3}	6.280×10^{-4}	9.084×10^{-7}	1.55	1.681×10^{-4}	1.394×10^{-3}
wavelength shift [nm]	$(9.970 \pm 7.221) \times 10^{-3}$	11969743	1.037×10^{-2}	1.018×10^{-2}	-0.212	0.540	4.617×10^{-3}	1.499×10^{-2}
cloud fraction apriori [1]	0.599 ± 0.338	11969743	0.707	0.602	0.0	1.000	0.293	1.000
reflectance blue ocra [1]	0.623 ± 0.246	11969743	0.463	0.640	0.137	1.92	0.387	0.851
reflectance green ocra [1]	0.582 ± 0.278	11969743	0.540	0.612	8.102×10^{-2}	1.94	0.302	0.841
reflectance continuum aband [1]	0.534 ± 0.299	11969743	0.540	0.573	1.286×10^{-2}	4.04	0.263	0.803

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]	0.685 ± 0.341	11763282	0.550	0.850	0.0	1.000	0.400	0.950
cloud fraction [1]	0.594 ± 0.357	11763282	0.766	0.622	5.146×10^{-3}	1.000	0.234	1.000
cloud top height [m]	$(0.360 \pm 0.258) \times 10^4$	11763282	3.458×10^3	2.863×10^3	0.0	2.000×10^4	1.602×10^3	5.059×10^3
cloud optical thickness [1]	18.3 ± 29.8	11763282	9.94	10.0	1.000	250	6.98	16.9
cloud fraction crb [1]	0.593 ± 0.358	11763282	0.767	0.619	8.472×10^{-3}	1.000	0.232	1.000
cloud height crb [m]	$(0.284 \pm 0.230) \times 10^4$	11763282	3.134×10^3	2.197×10^3	0.0	2.000×10^4	1.030×10^3	4.164×10^3
cloud albedo crb [1]	0.560 ± 0.177	11763282	0.223	0.541	0.0	1.000	0.453	0.676
surface albedo fitted [1]	0.101 ± 0.194	11763282	3.487×10^{-2}	3.227×10^{-2}	0.0	1.000	1.919×10^{-2}	5.406×10^{-2}
surface albedo fitted crb [1]	$(9.603 \pm 19.788) \times 10^{-2}$	11763282	2.875×10^{-2}	2.466×10^{-2}	0.0	1.000	1.412×10^{-2}	4.287×10^{-2}
fitted root mean square [1]	$(7.080 \pm 15.778) \times 10^{-4}$	11763282	9.363×10^{-4}	3.094×10^{-4}	8.249×10^{-7}	0.871	9.421×10^{-5}	1.030×10^{-3}
fitted root mean square crb [1]	$(6.632 \pm 13.831) \times 10^{-4}$	11763282	9.260×10^{-4}	2.685×10^{-4}	7.737×10^{-7}	0.763	7.119×10^{-5}	9.972×10^{-4}
wavelength shift [nm]	$(7.893 \pm 7.454) \times 10^{-3}$	11763282	1.070×10^{-2}	7.025×10^{-3}	-4.599×10^{-2}	0.540	2.229×10^{-3}	1.293×10^{-2}
cloud fraction apriori [1]	0.597 ± 0.363	11763282	0.774	0.629	0.0	1.000	0.226	1.000
reflectance blue ocra [1]	0.514 ± 0.201	11763282	0.319	0.477	0.165	1.92	0.344	0.662
reflectance green ocra [1]	0.454 ± 0.228	11763282	0.387	0.417	9.654×10^{-2}	1.94	0.247	0.634
reflectance continuum aband [1]	0.388 ± 0.265	11763282	0.458	0.359	1.286×10^{-2}	4.69	0.143	0.601

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]	0.480 ± 0.349	6214142	0.690	0.600	0.0	1.000	1.000×10^{-2}	0.700
cloud fraction [1]	0.518 ± 0.289	6214142	0.460	0.486	5.265×10^{-3}	1.000	0.285	0.745
cloud top height [m]	$(0.464 \pm 0.235) \times 10^4$	6214142	2.848×10^3	4.542×10^3	0.0	2.000×10^4	3.062×10^3	5.910×10^3
cloud optical thickness [1]	17.8 ± 38.5	6214142	7.77	6.35	1.000	250	4.72	12.5
cloud fraction crb [1]	0.519 ± 0.289	6214142	0.460	0.488	8.260×10^{-3}	1.000	0.285	0.746
cloud height crb [m]	$(0.321 \pm 0.195) \times 10^4$	6214142	2.321×10^3	3.059×10^3	0.0	2.000×10^4	1.863×10^3	4.184×10^3
cloud albedo crb [1]	0.723 ± 0.239	6214142	0.334	0.781	0.0	1.000	0.579	0.913
surface albedo fitted [1]	0.652 ± 0.314	6214142	0.630	0.807	0.0	1.000	0.309	0.939
surface albedo fitted crb [1]	0.624 ± 0.294	6214142	0.577	0.786	0.0	1.000	0.305	0.882
fitted root mean square [1]	$(9.835 \pm 30.609) \times 10^{-4}$	6214142	1.040×10^{-3}	7.042×10^{-4}	1.760×10^{-6}	1.29	3.306×10^{-4}	1.370×10^{-3}
fitted root mean square crb [1]	$(8.258 \pm 35.884) \times 10^{-4}$	6214142	1.013×10^{-3}	5.525×10^{-4}	2.150×10^{-6}	1.55	1.929×10^{-4}	1.206×10^{-3}
wavelength shift [nm]	$(1.027 \pm 0.643) \times 10^{-2}$	6214142	9.545×10^{-3}	1.050×10^{-2}	-0.212	0.103	5.348×10^{-3}	1.489×10^{-2}
cloud fraction apriori [1]	0.540 ± 0.295	6214142	0.479	0.517	0.0	1.000	0.304	0.783
reflectance blue ocra [1]	0.735 ± 0.229	6214142	0.331	0.822	0.137	1.89	0.575	0.906
reflectance green ocra [1]	0.711 ± 0.254	6214142	0.373	0.812	8.102×10^{-2}	1.90	0.534	0.907
reflectance continuum aband [1]	0.692 ± 0.235	6214142	0.367	0.771	1.744×10^{-2}	4.63	0.508	0.875

3 Granule outlines

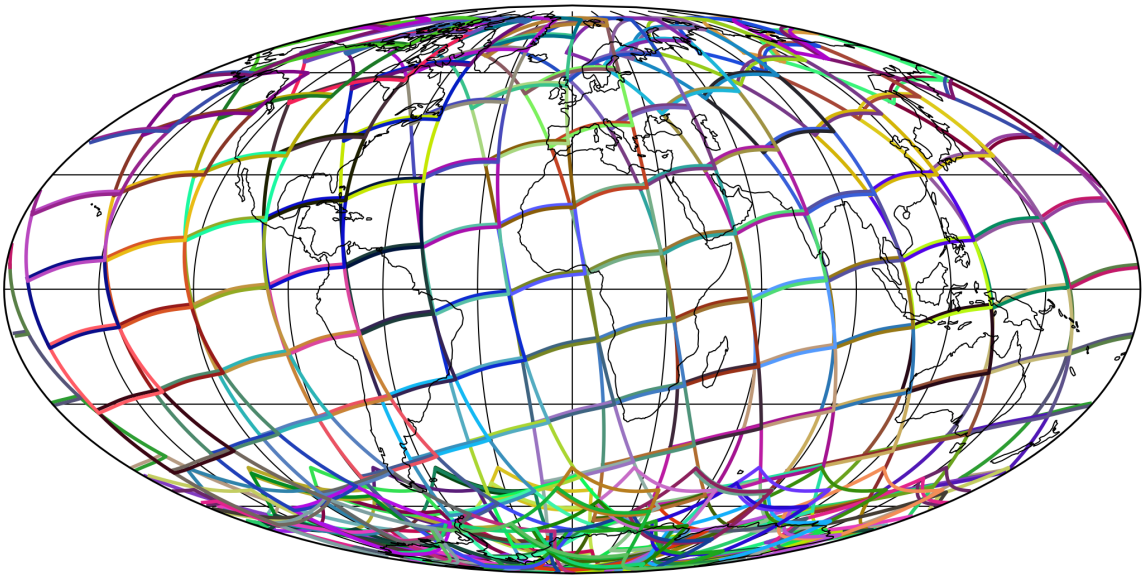

Figure 1: Outline of the granules.

4 Input data monitoring

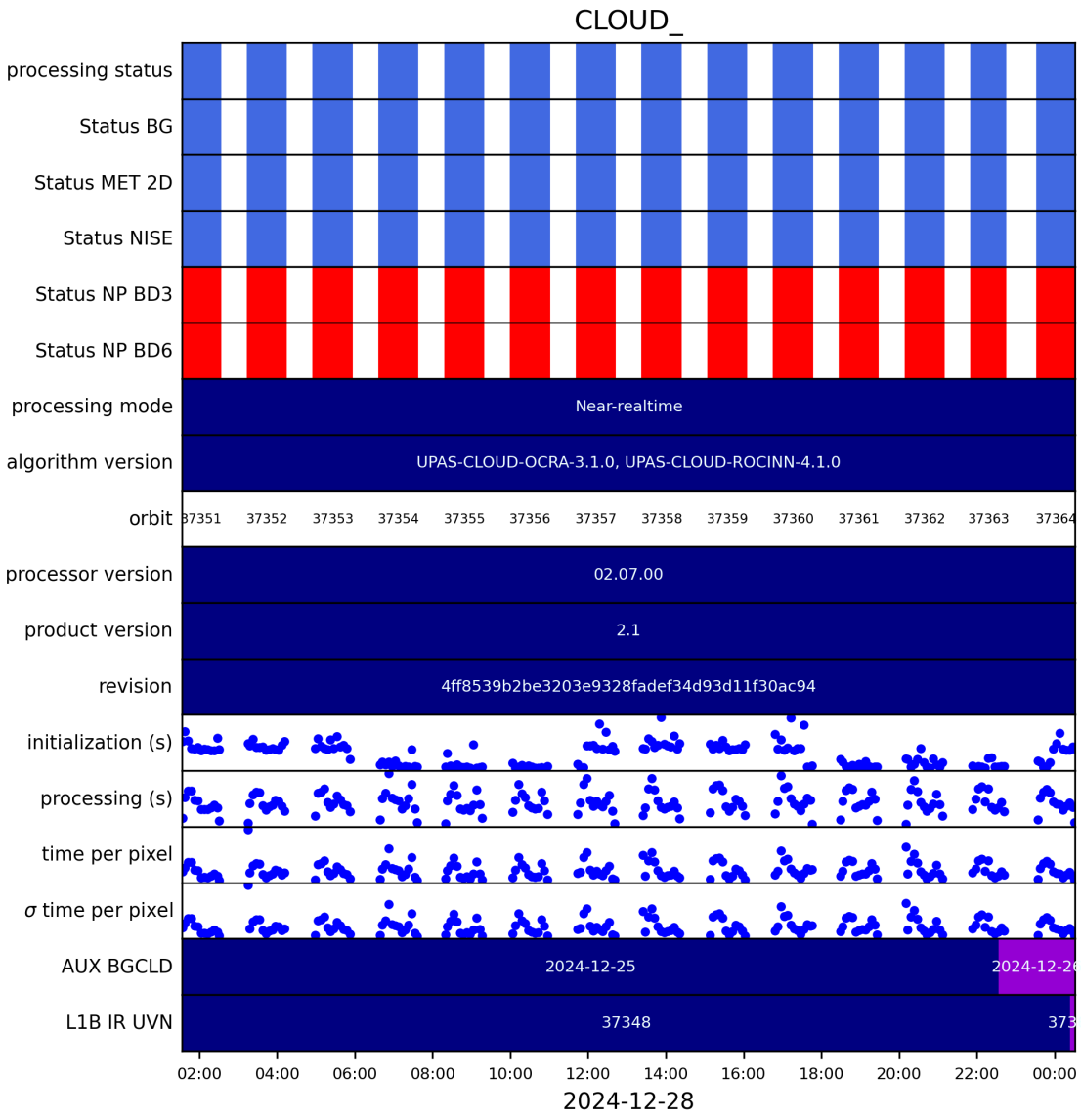

Figure 2: Input data per granule

5 Warnings and errors

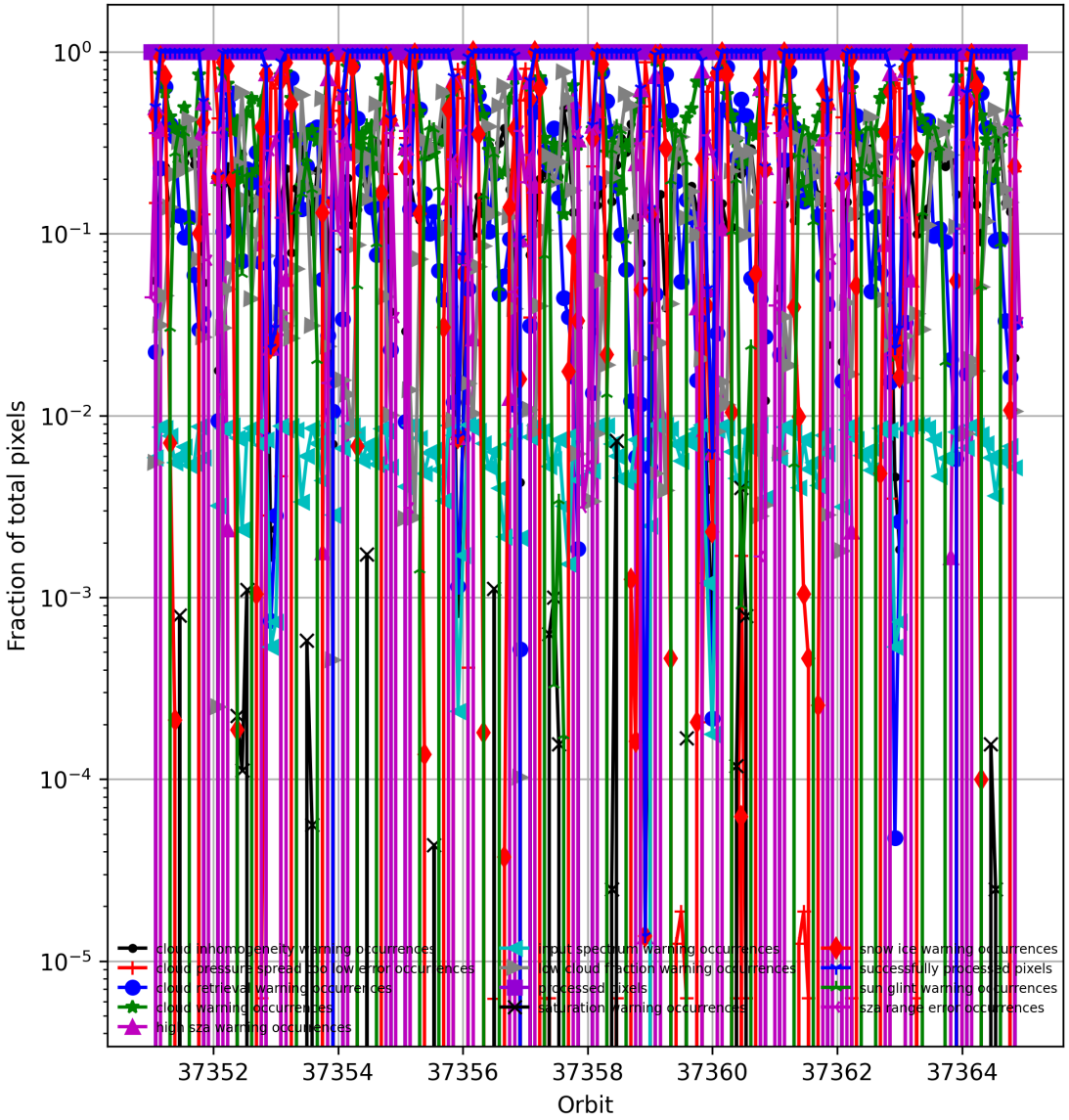

Figure 3: Fraction of pixels with specific warnings and errors during processing

6 World maps

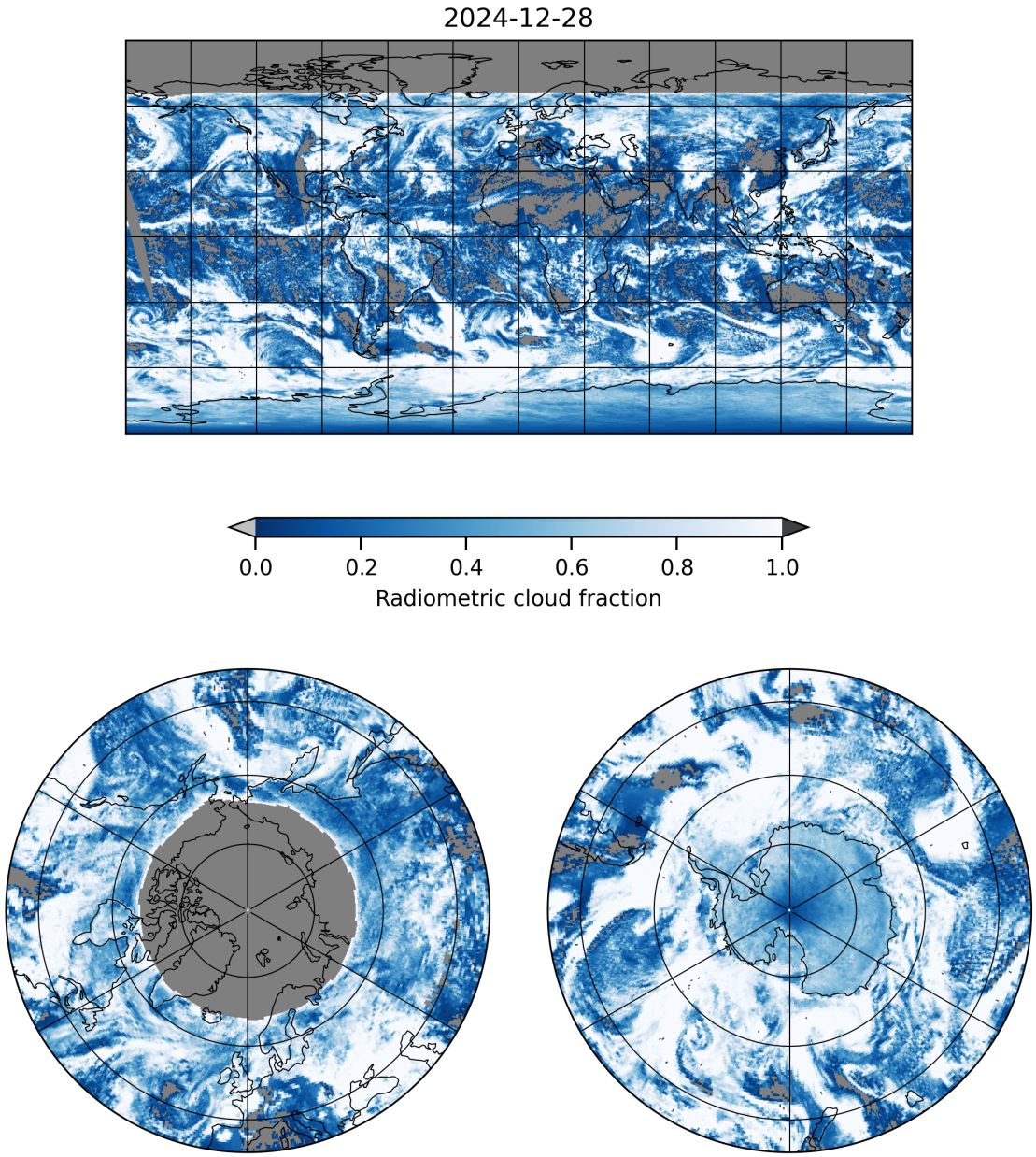

Figure 4: Map of “Radiometric cloud fraction” for 2024-12-28 to 2024-12-29

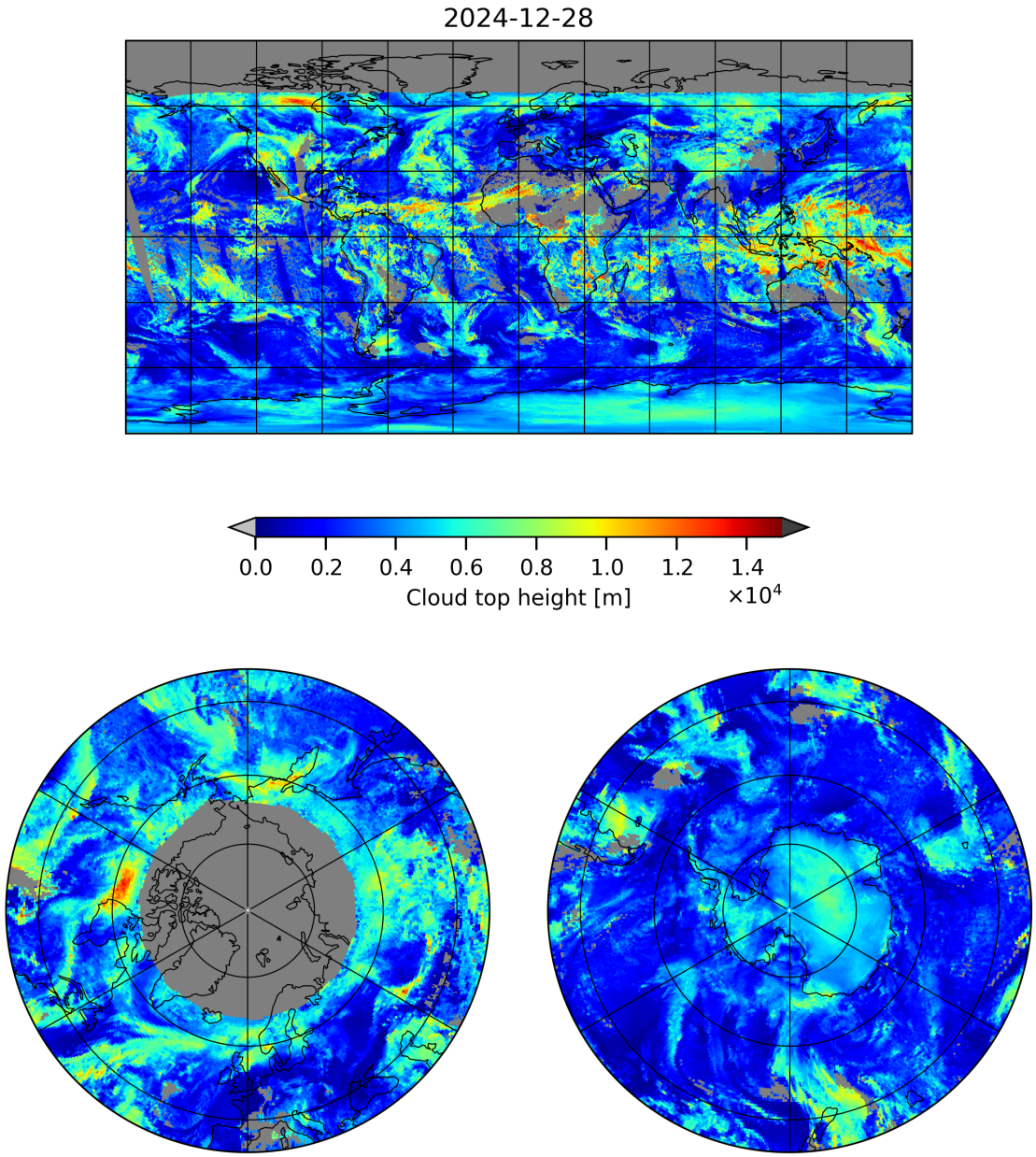

Figure 5: Map of “Cloud top height” for 2024-12-28 to 2024-12-29

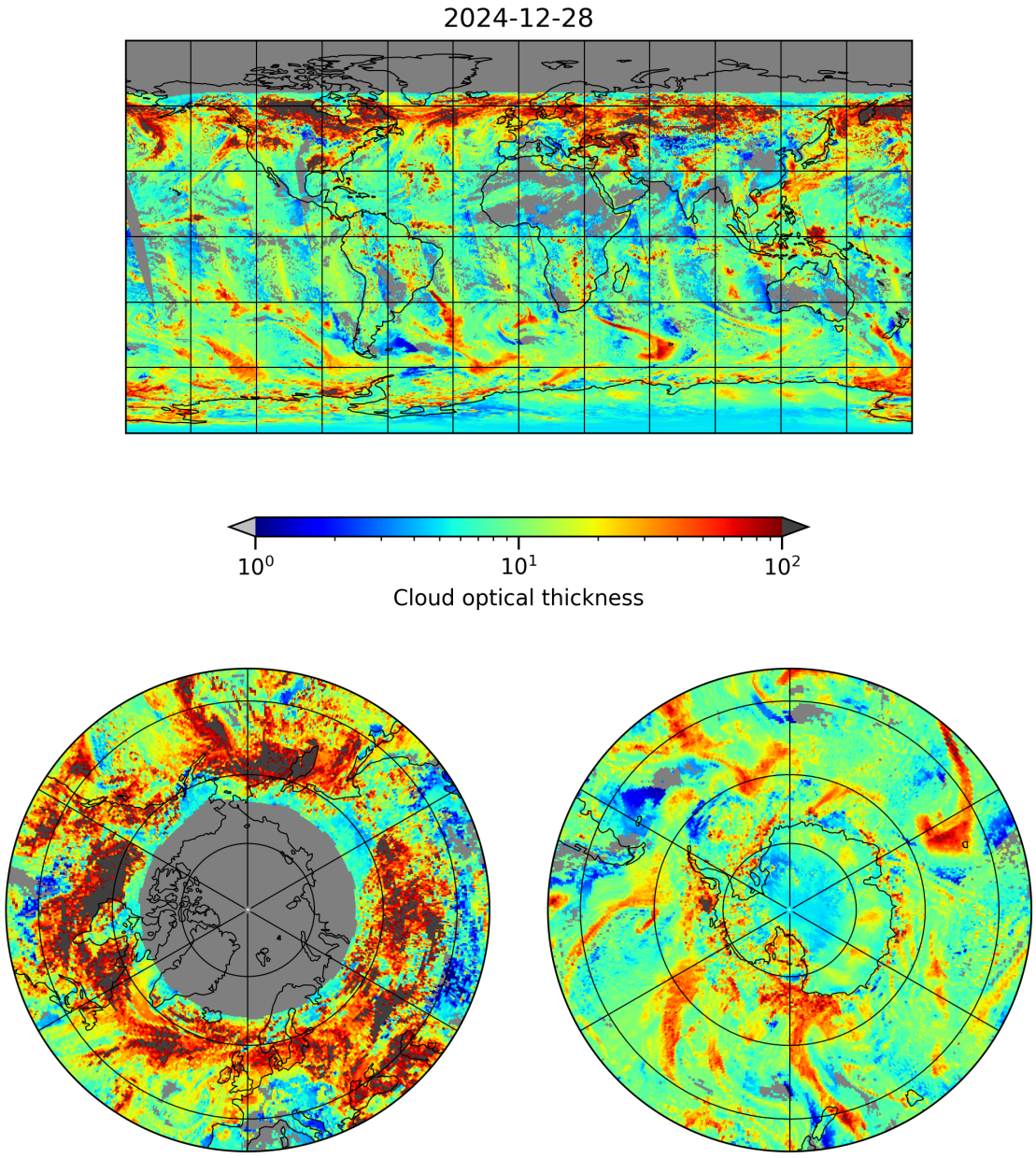

Figure 6: Map of “Cloud optical thickness” for 2024-12-28 to 2024-12-29

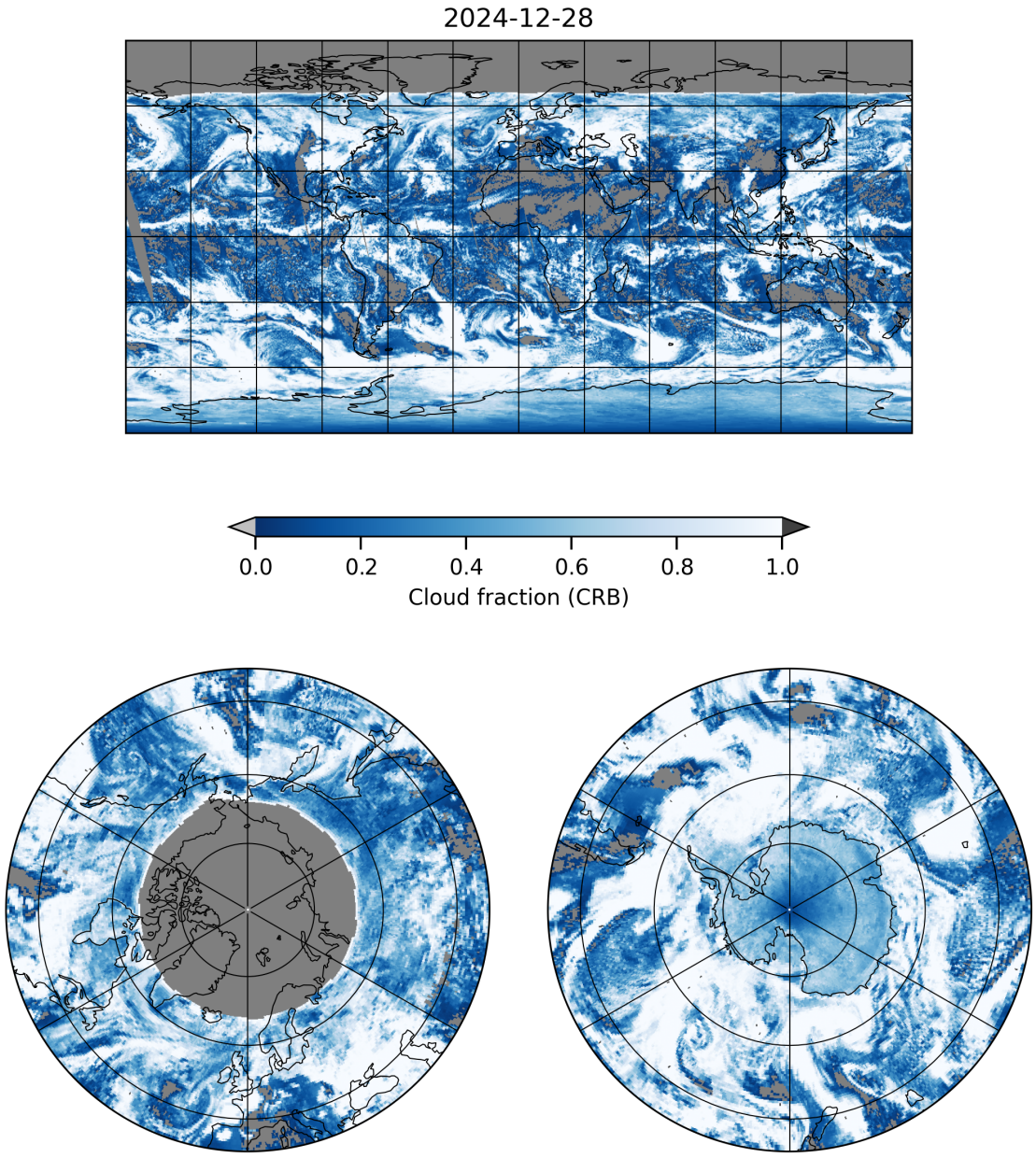

Figure 7: Map of “Cloud fraction (CRB)” for 2024-12-28 to 2024-12-29

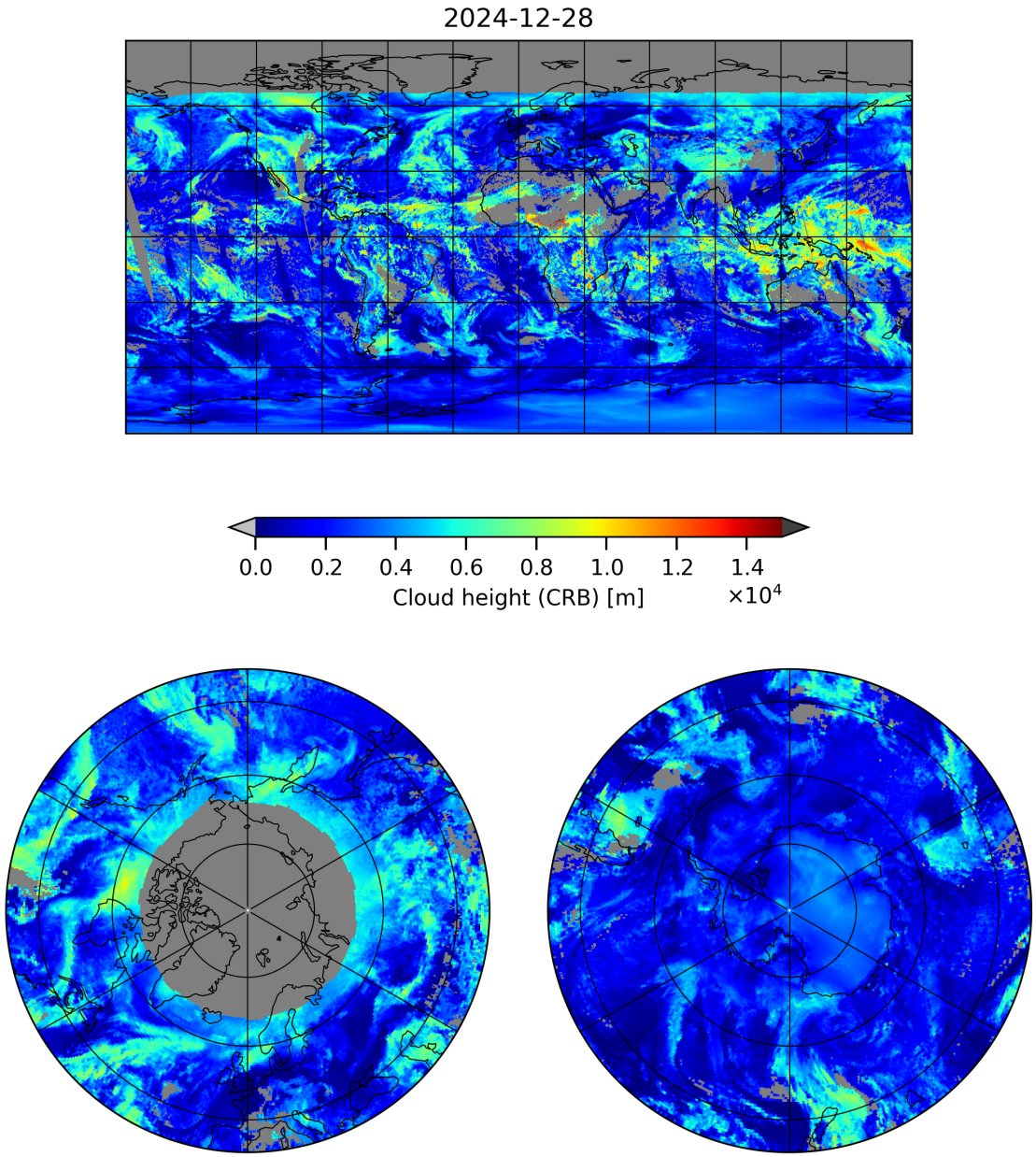

Figure 8: Map of “Cloud height (CRB)” for 2024-12-28 to 2024-12-29

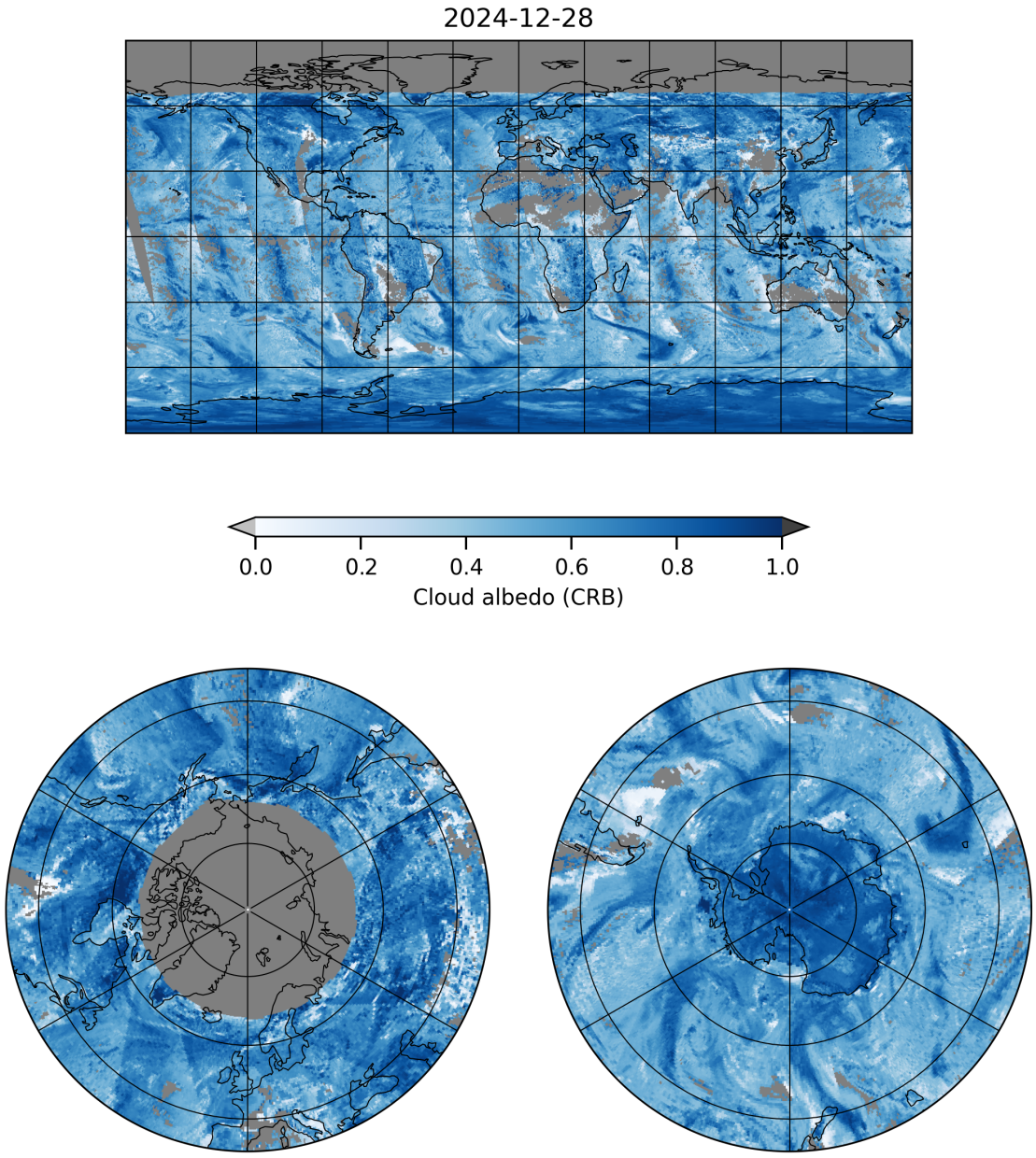

Figure 9: Map of “Cloud albedo (CRB)” for 2024-12-28 to 2024-12-29

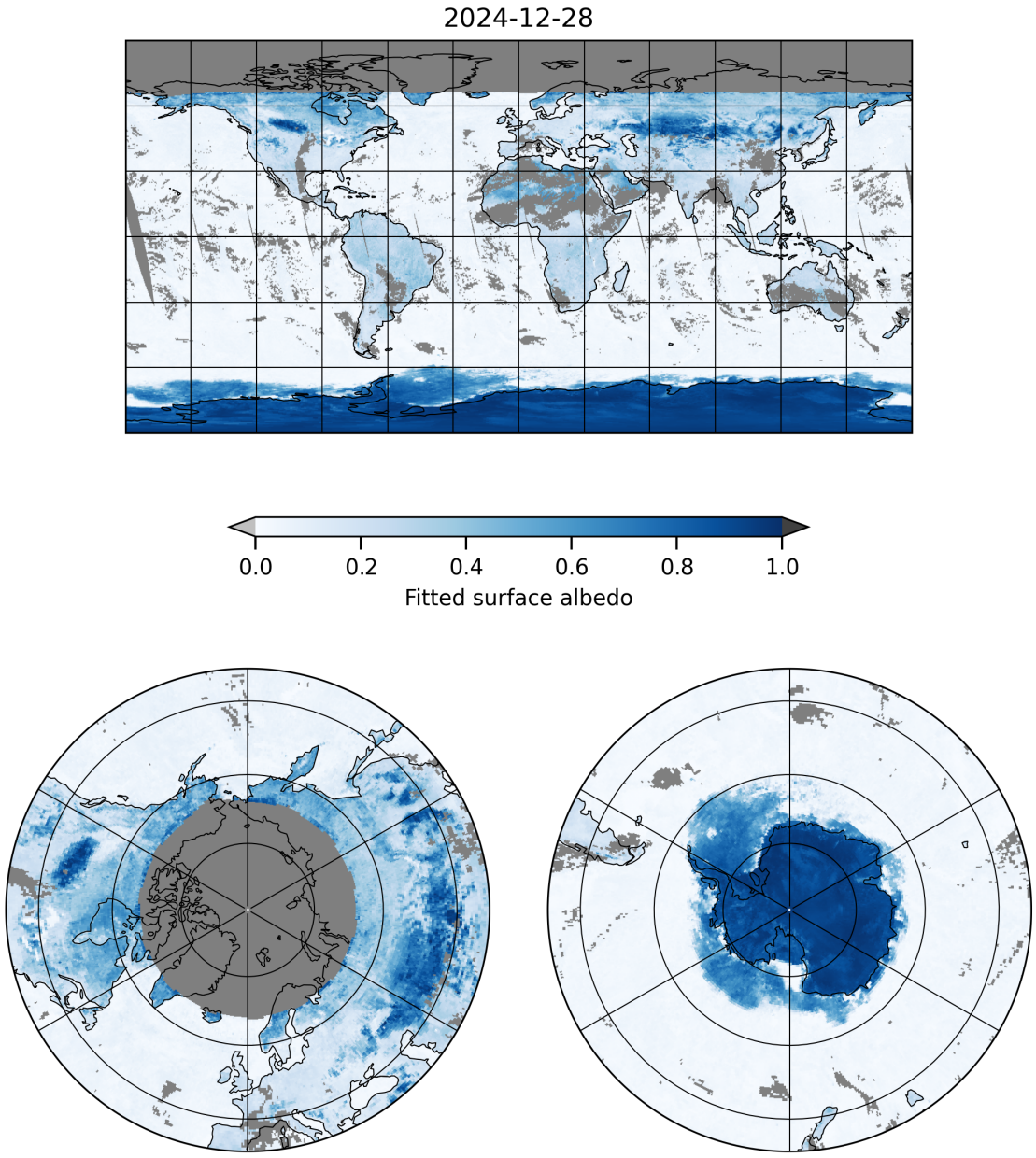

Figure 10: Map of “Fitted surface albedo” for 2024-12-28 to 2024-12-29

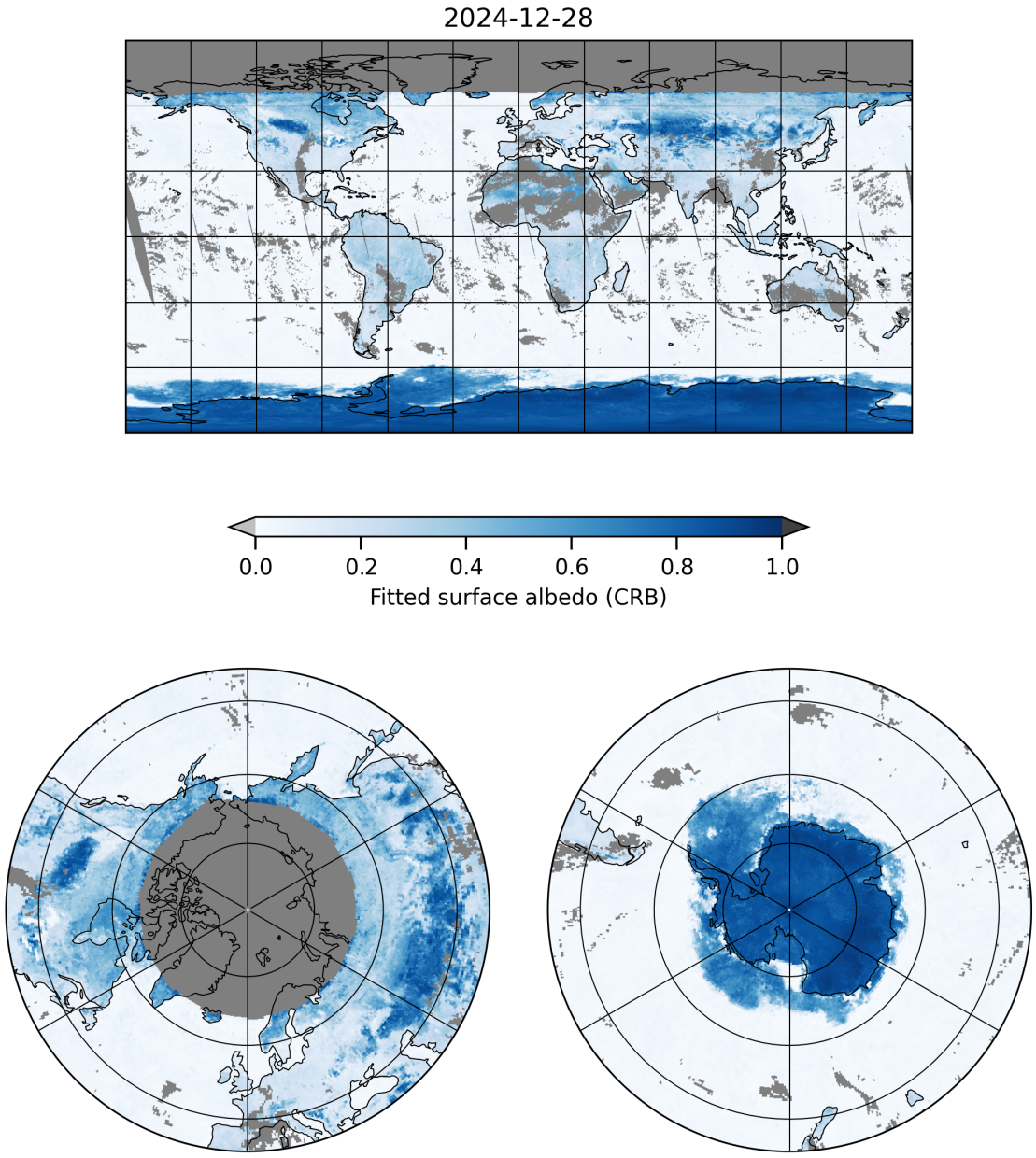

Figure 11: Map of “Fitted surface albedo (CRB)” for 2024-12-28 to 2024-12-29

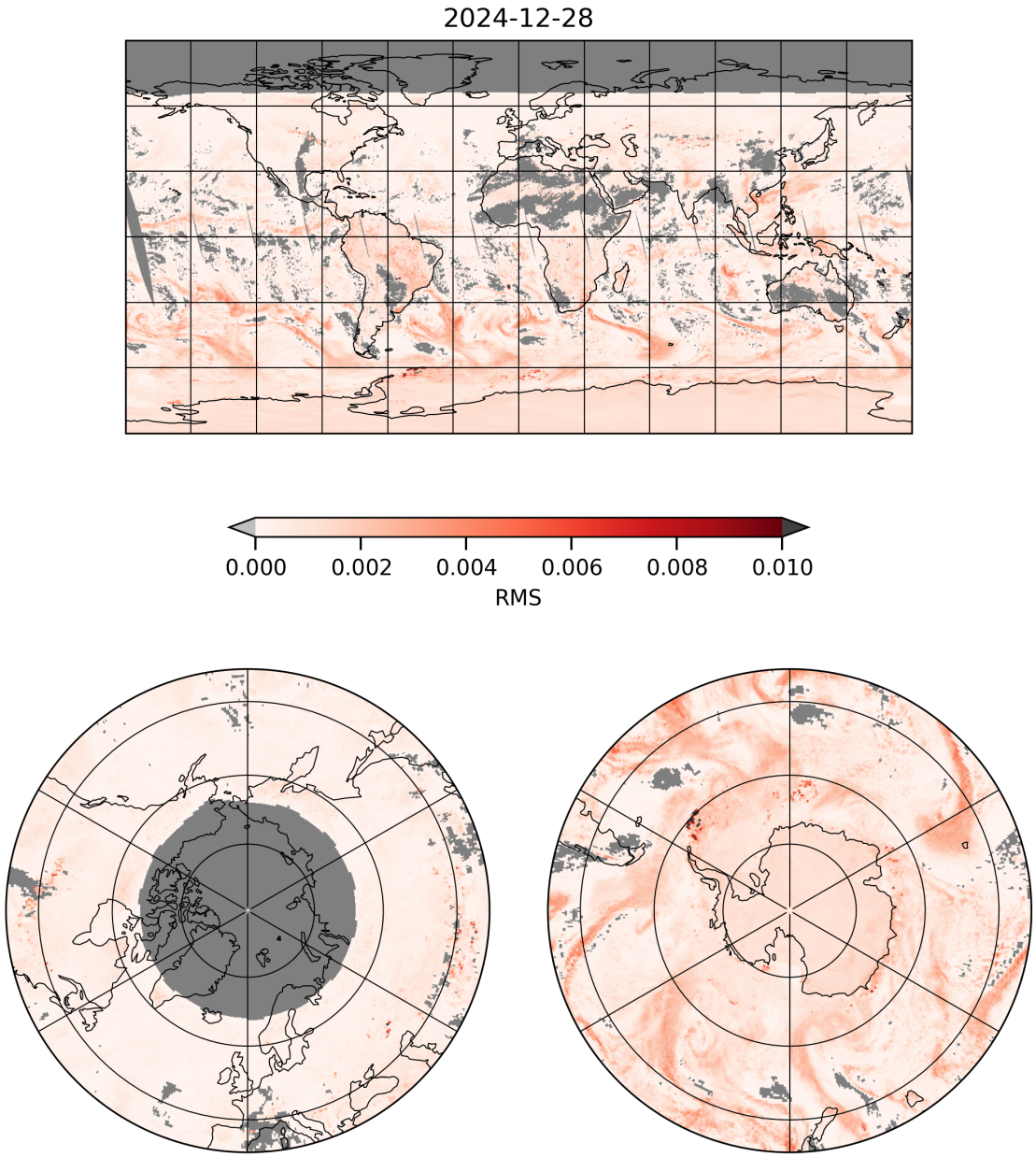

Figure 12: Map of “RMS” for 2024-12-28 to 2024-12-29

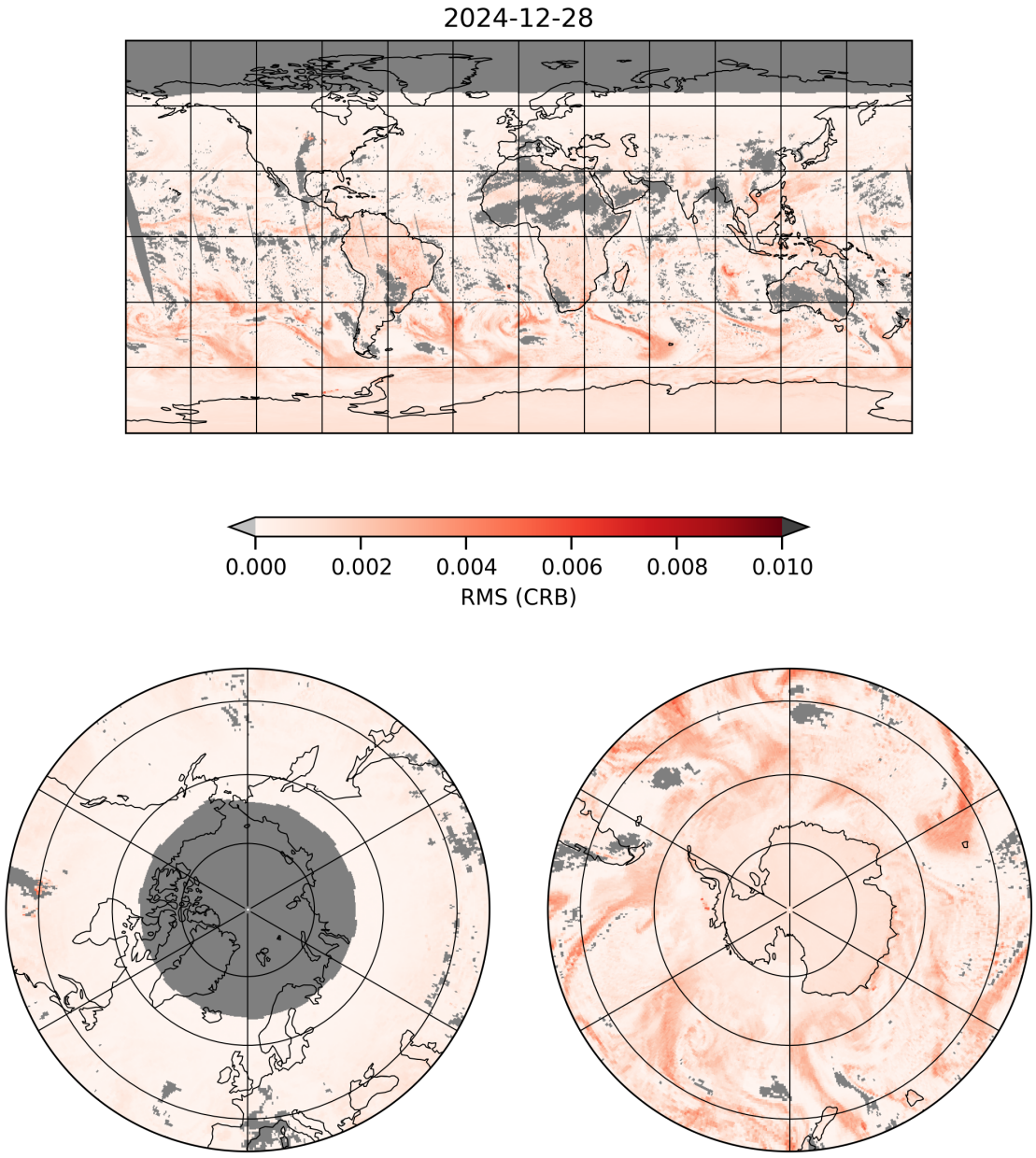

Figure 13: Map of “RMS (CRB)” for 2024-12-28 to 2024-12-29

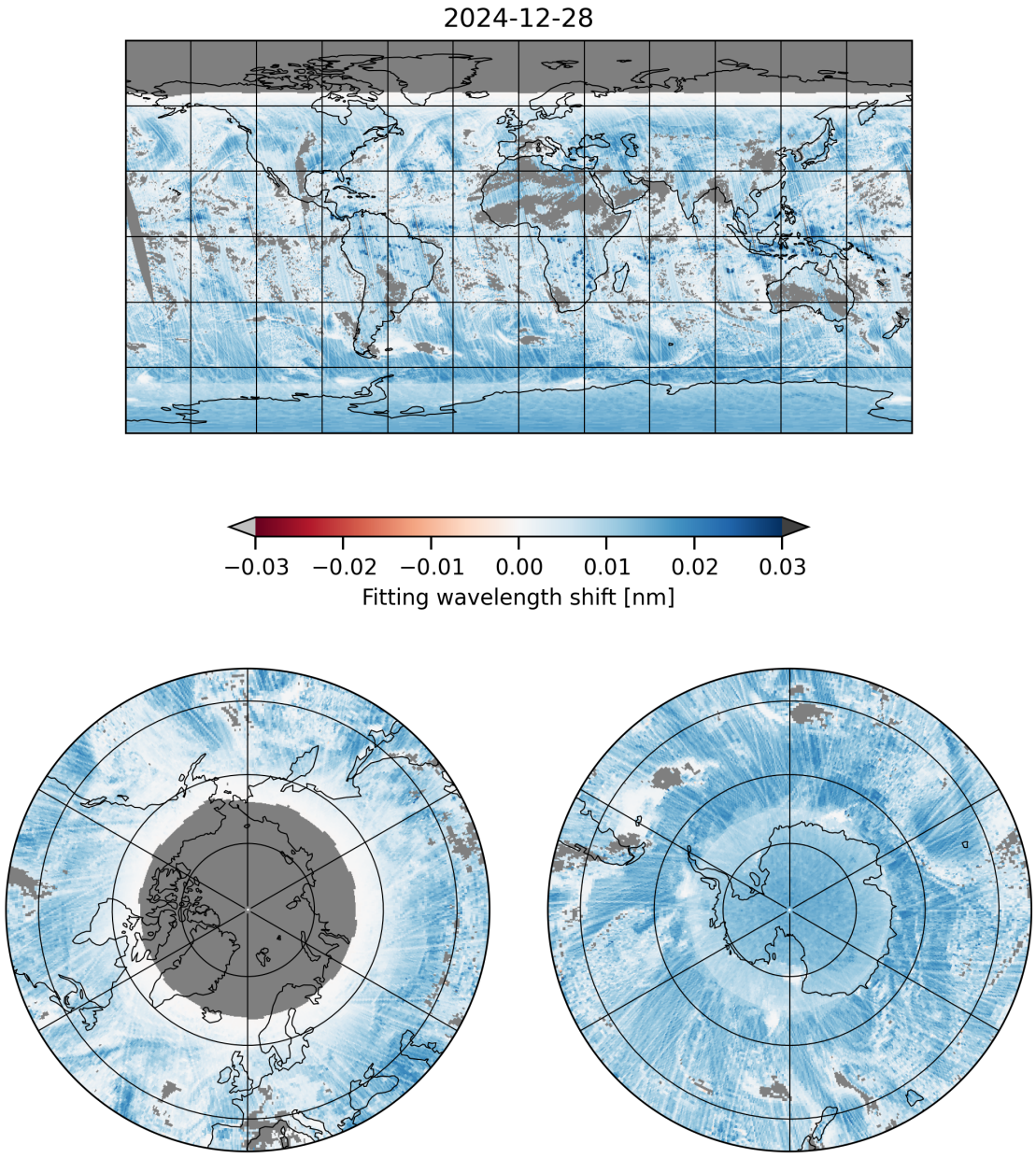

Figure 14: Map of “Fitting wavelength shift” for 2024-12-28 to 2024-12-29

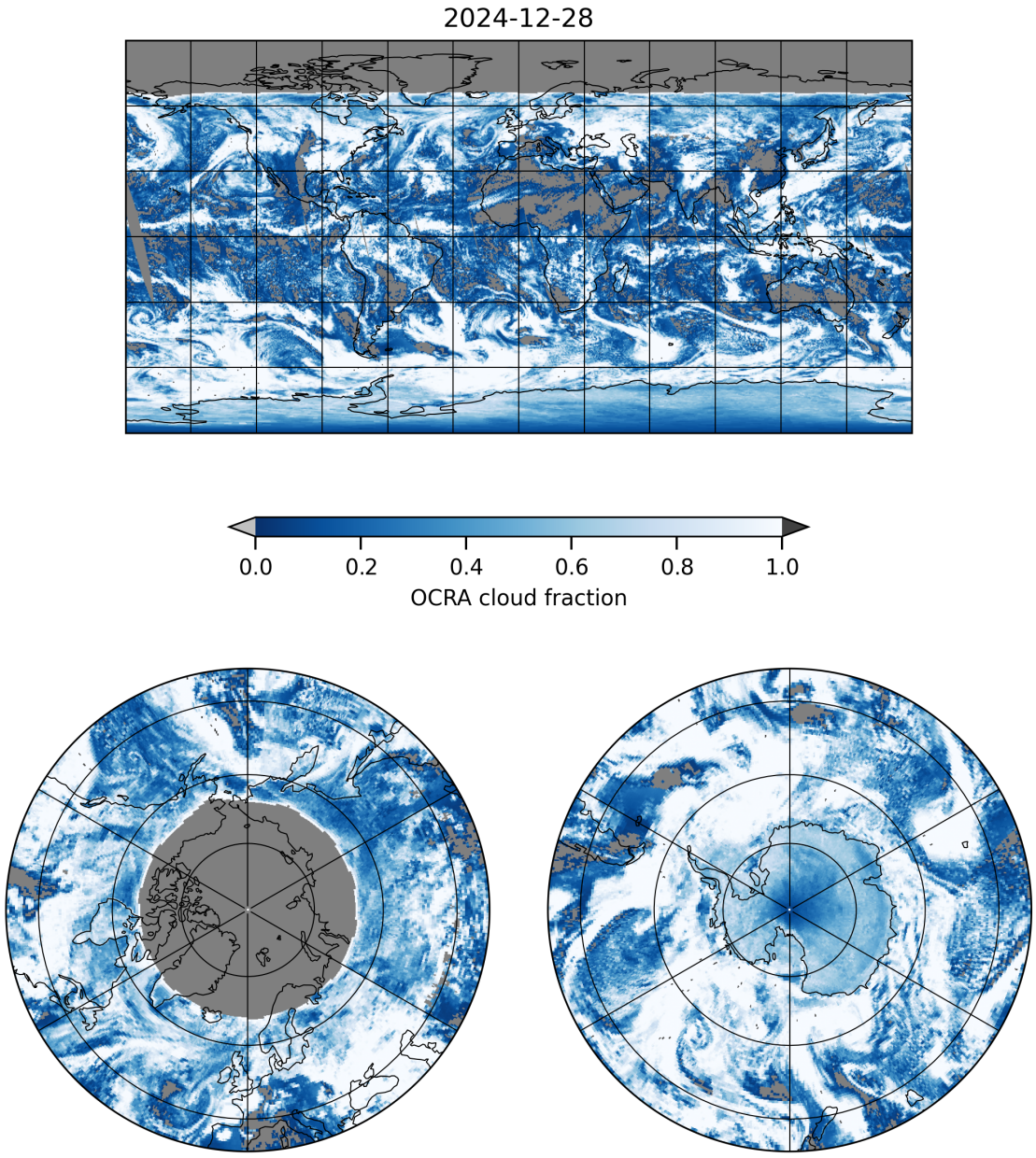

Figure 15: Map of “OCRA cloud fraction” for 2024-12-28 to 2024-12-29

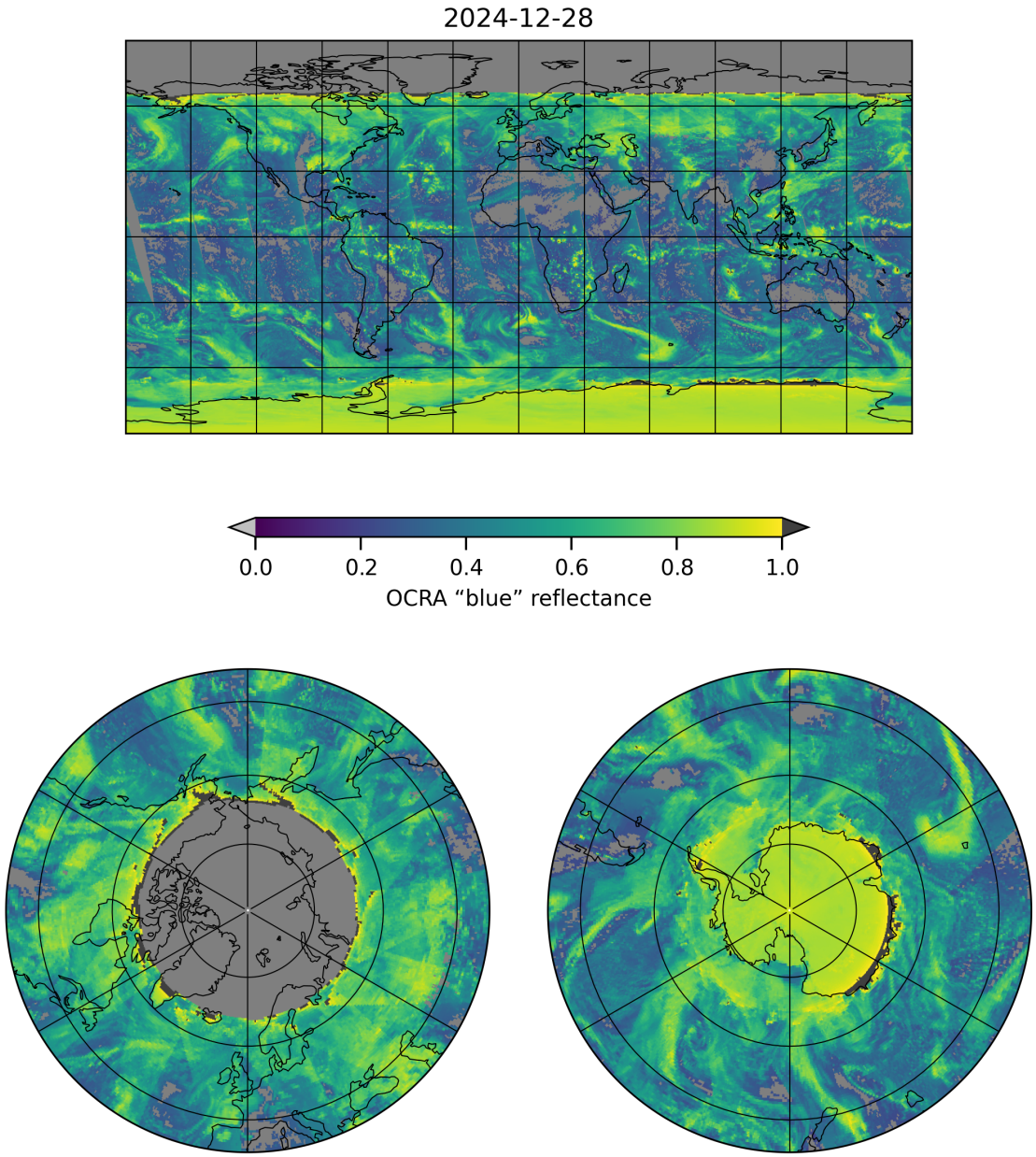

Figure 16: Map of “OCRA “blue” reflectance” for 2024-12-28 to 2024-12-29

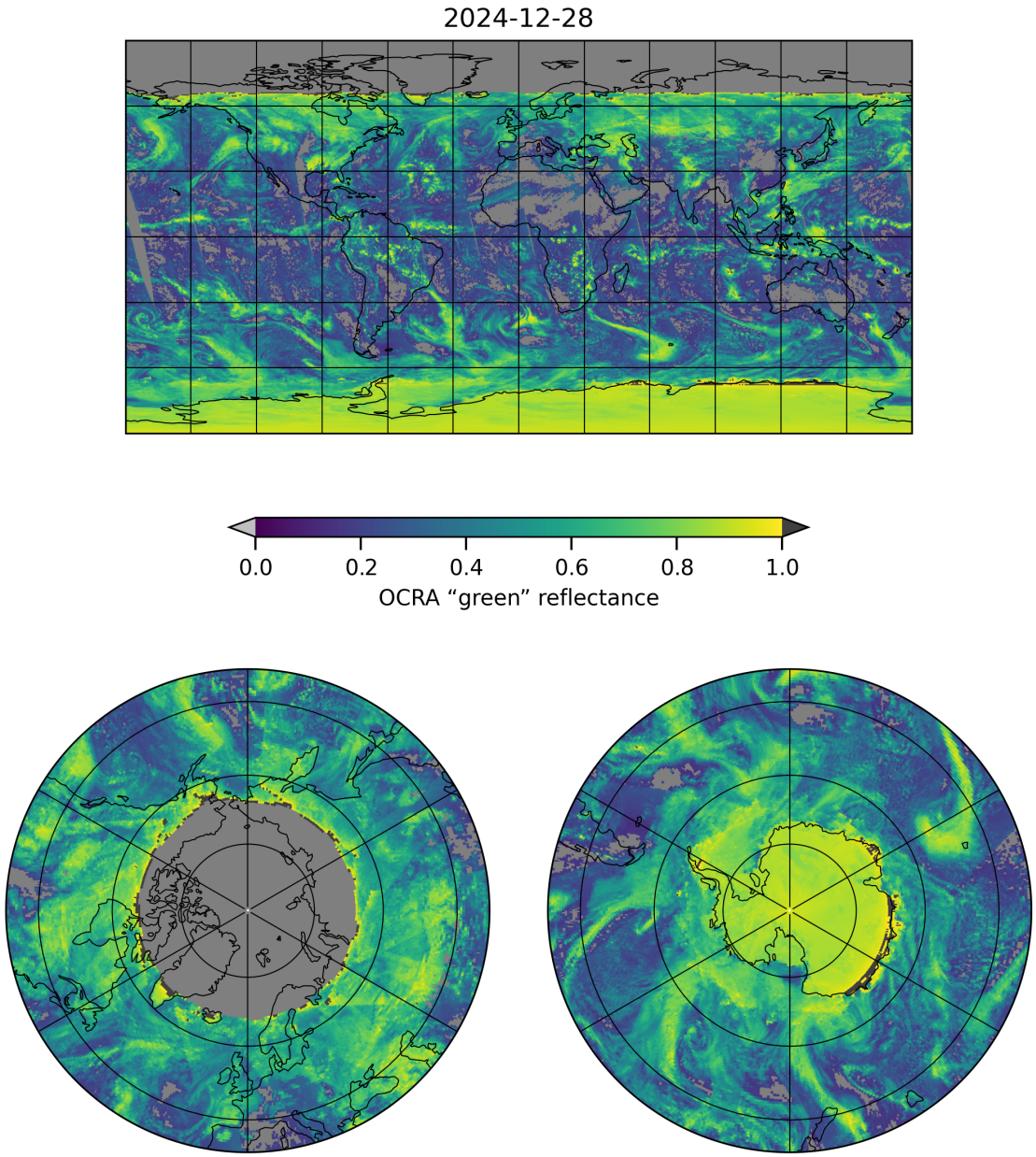

Figure 17: Map of “OCRA “green” reflectance” for 2024-12-28 to 2024-12-29

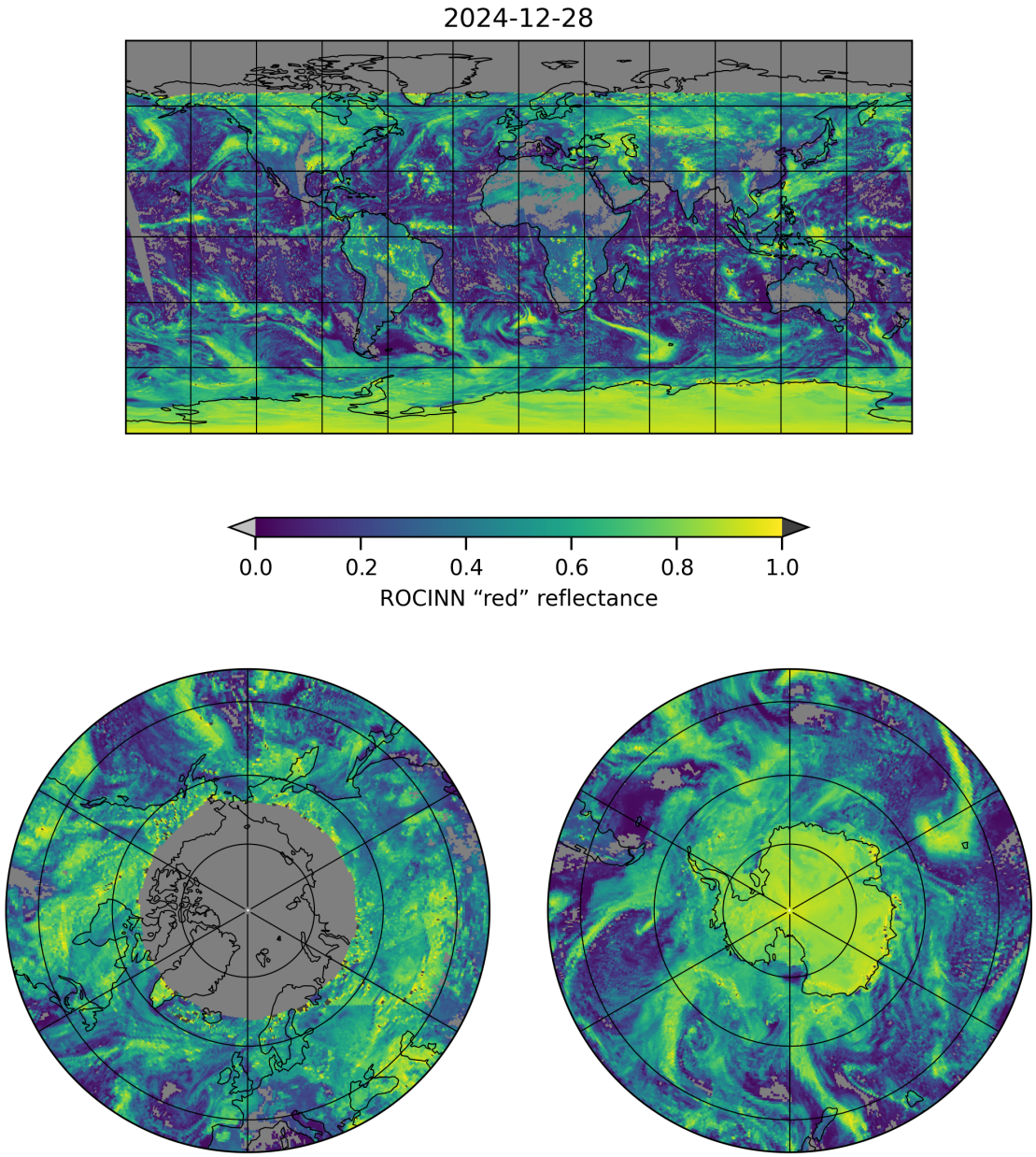

Figure 18: Map of “ROCINN “red” reflectance” for 2024-12-28 to 2024-12-29

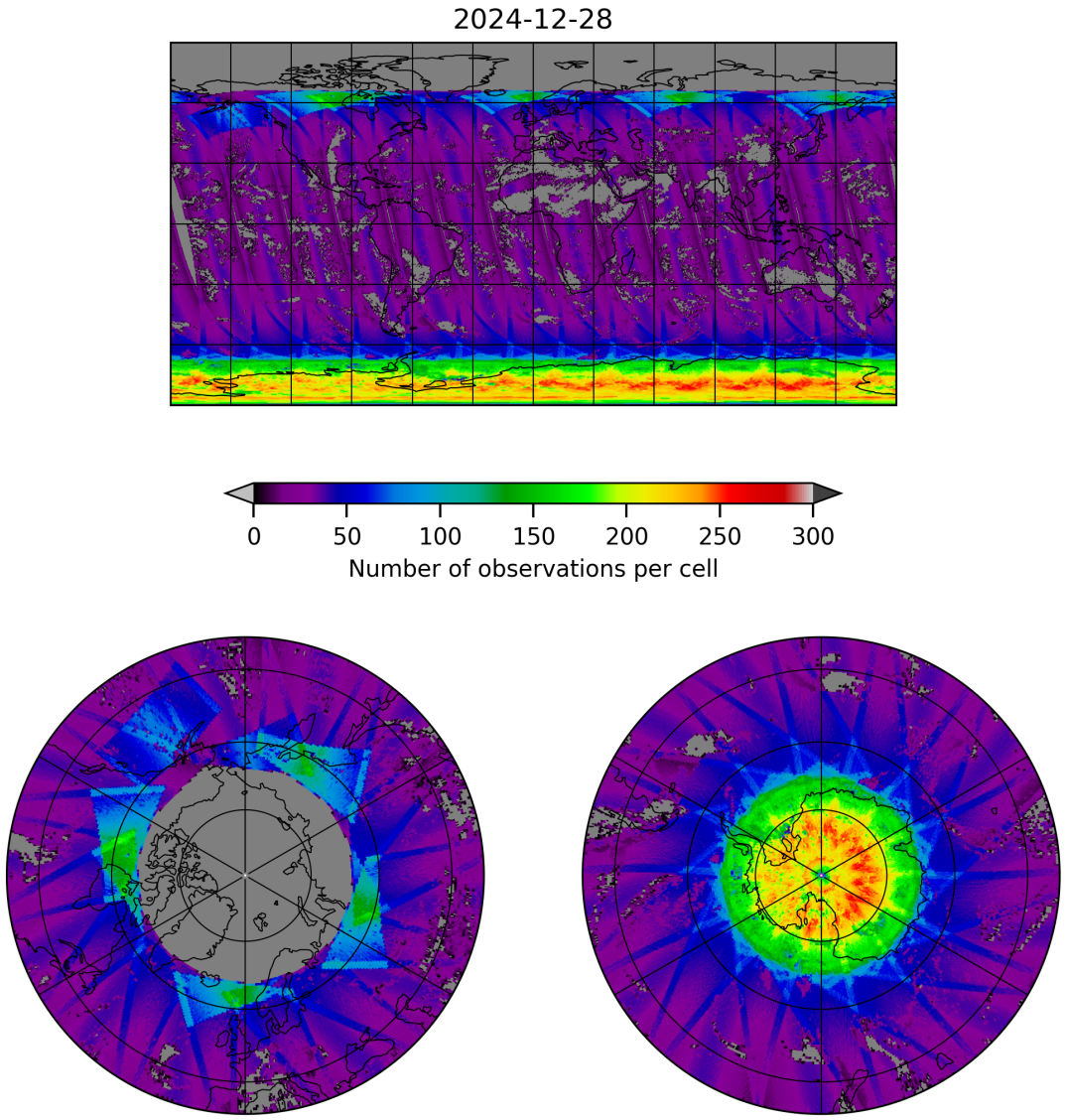

Figure 19: Map of the number of observations for 2024-12-28 to 2024-12-29

7 Zonal average

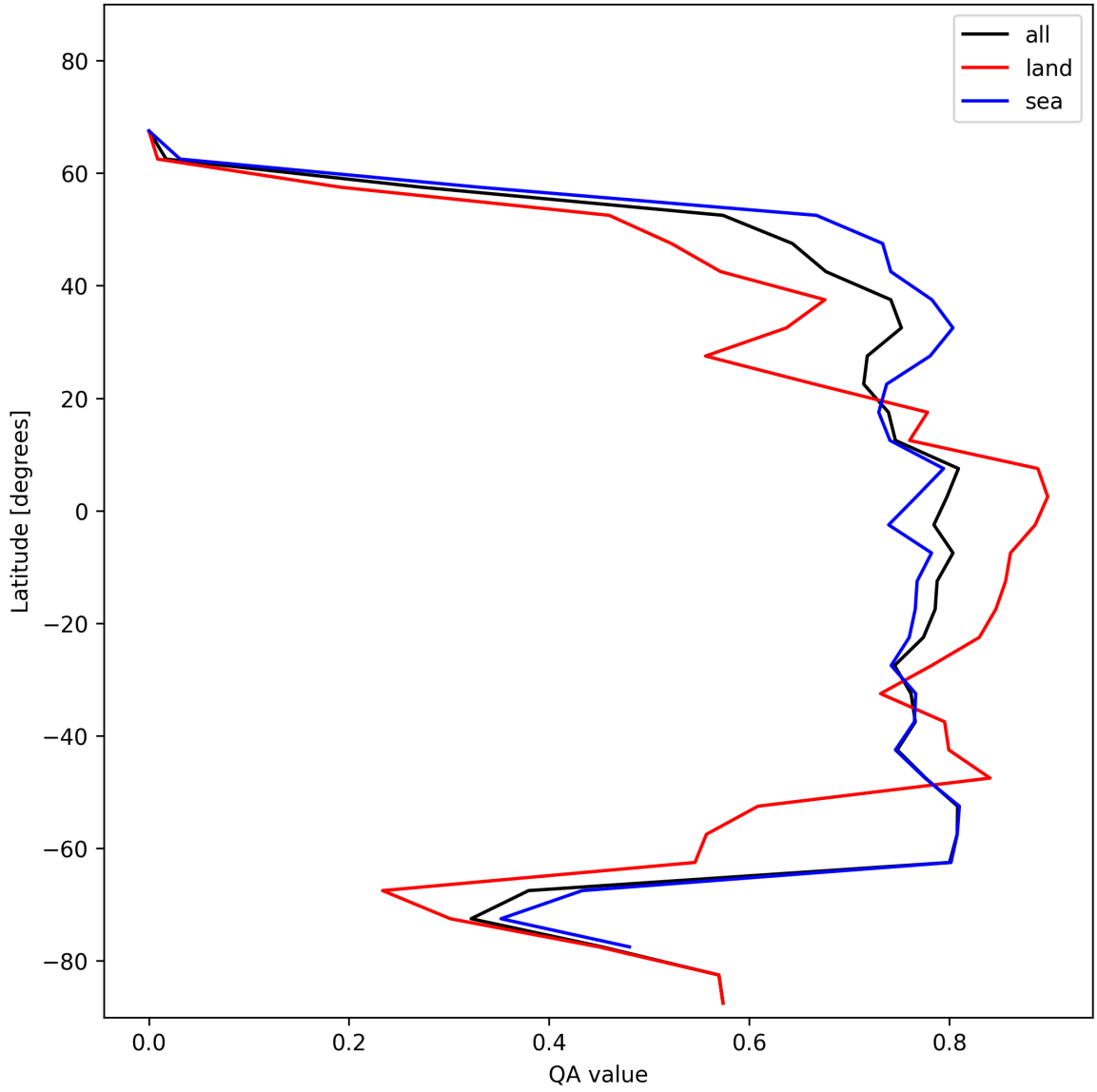

Figure 20: Zonal average of “QA value” for 2024-12-28 to 2024-12-29.

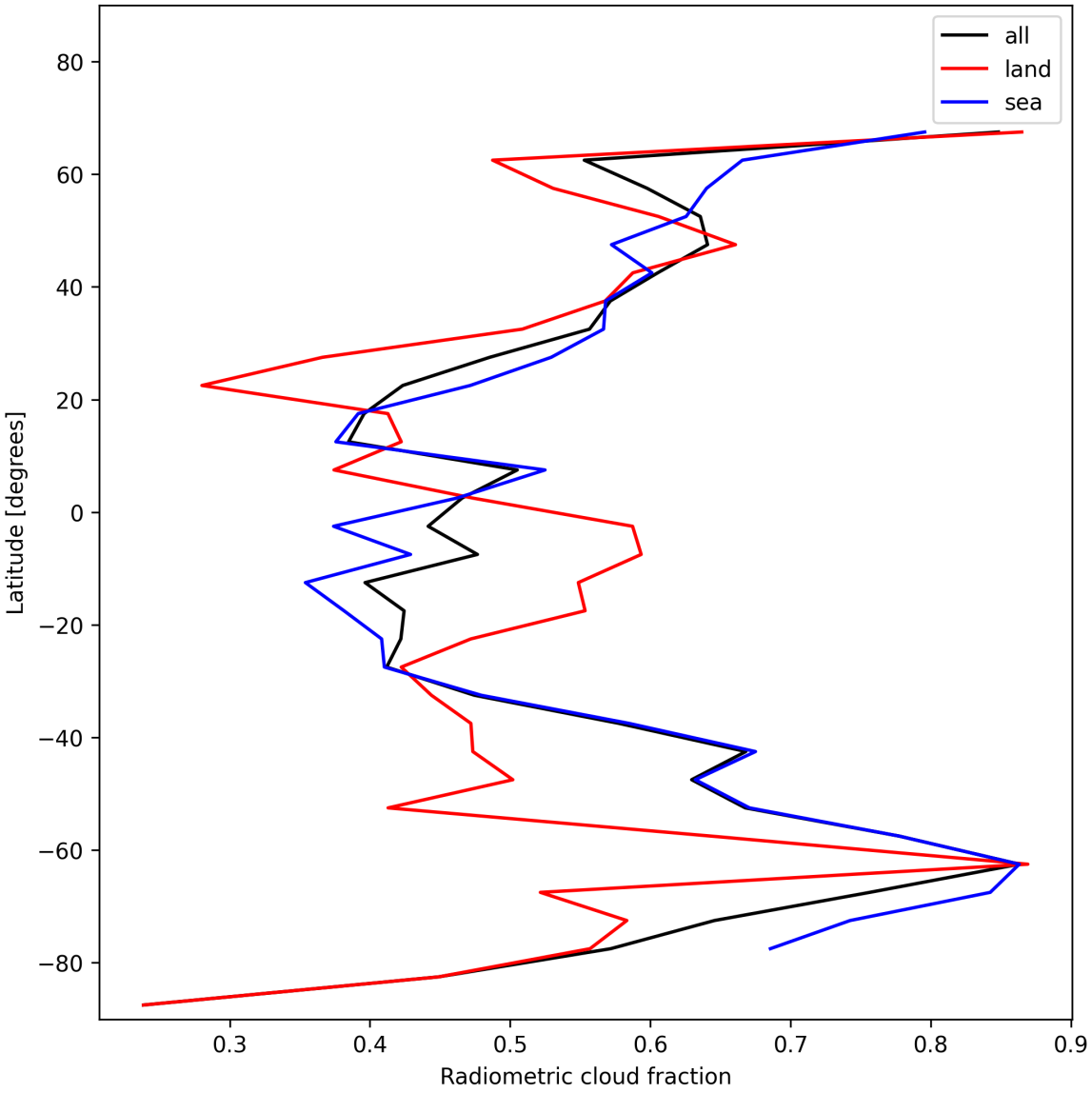

Figure 21: Zonal average of “Radiometric cloud fraction” for 2024-12-28 to 2024-12-29.

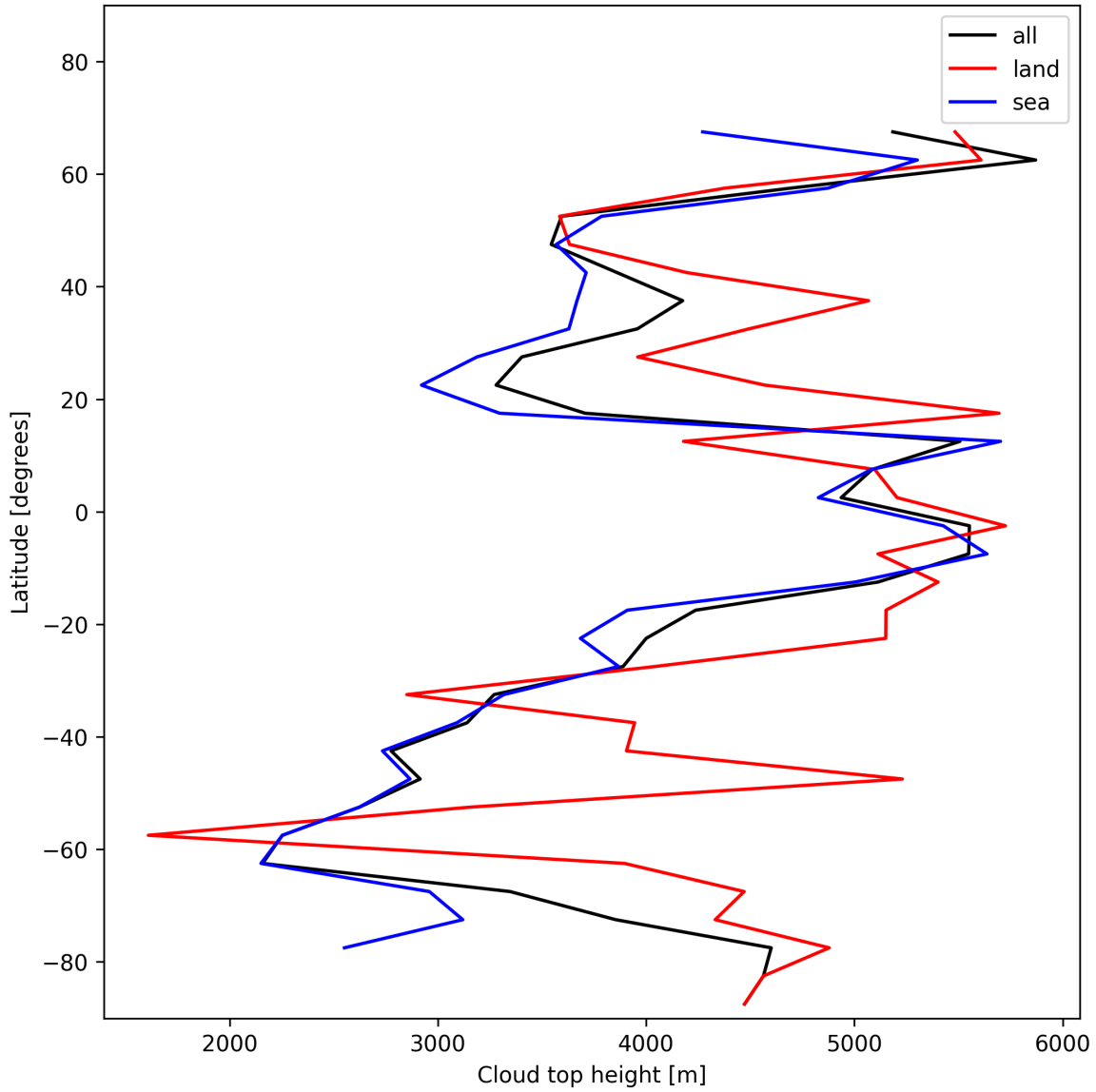

Figure 22: Zonal average of “Cloud top height” for 2024-12-28 to 2024-12-29.

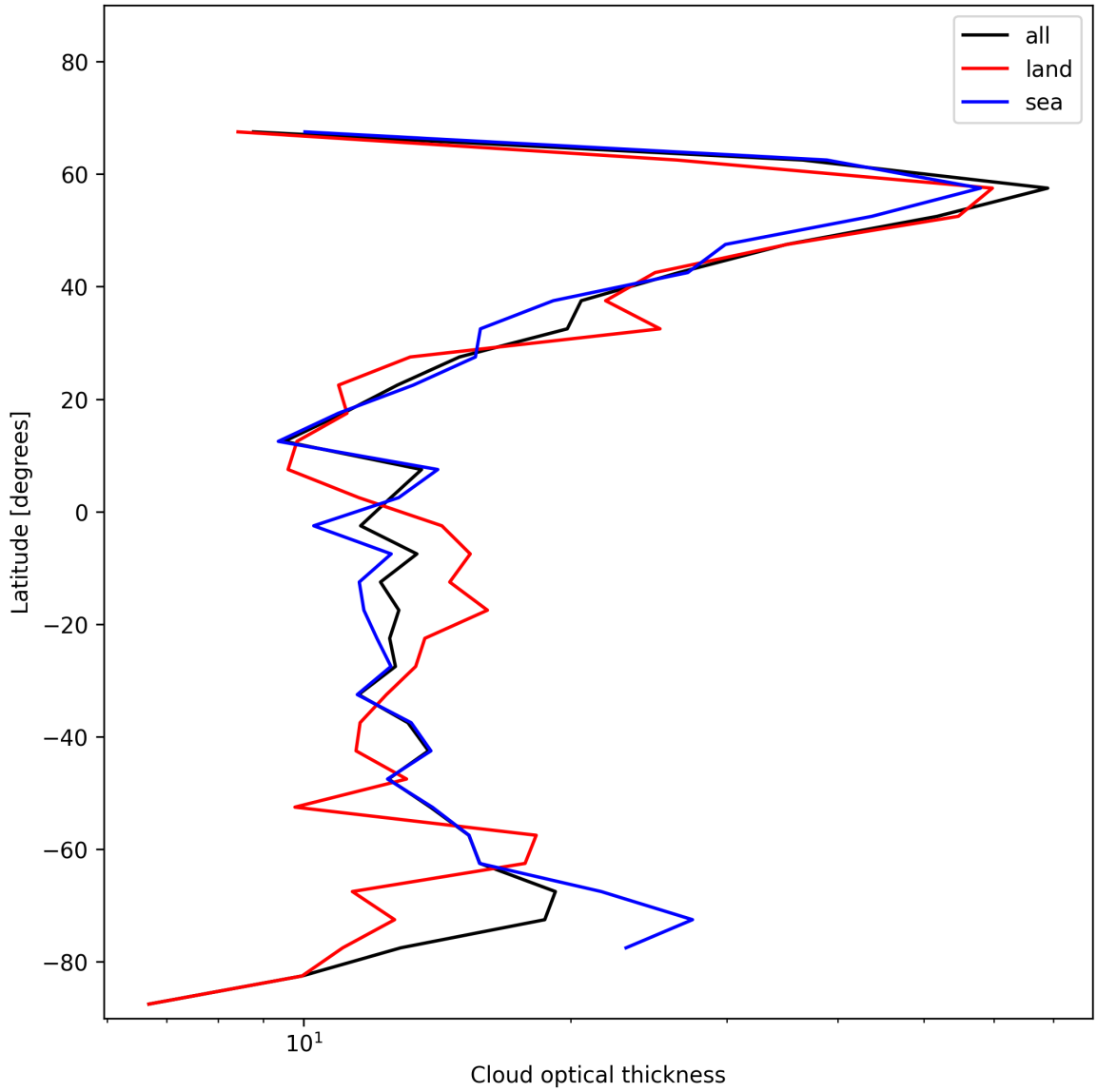

Figure 23: Zonal average of “Cloud optical thickness” for 2024-12-28 to 2024-12-29.

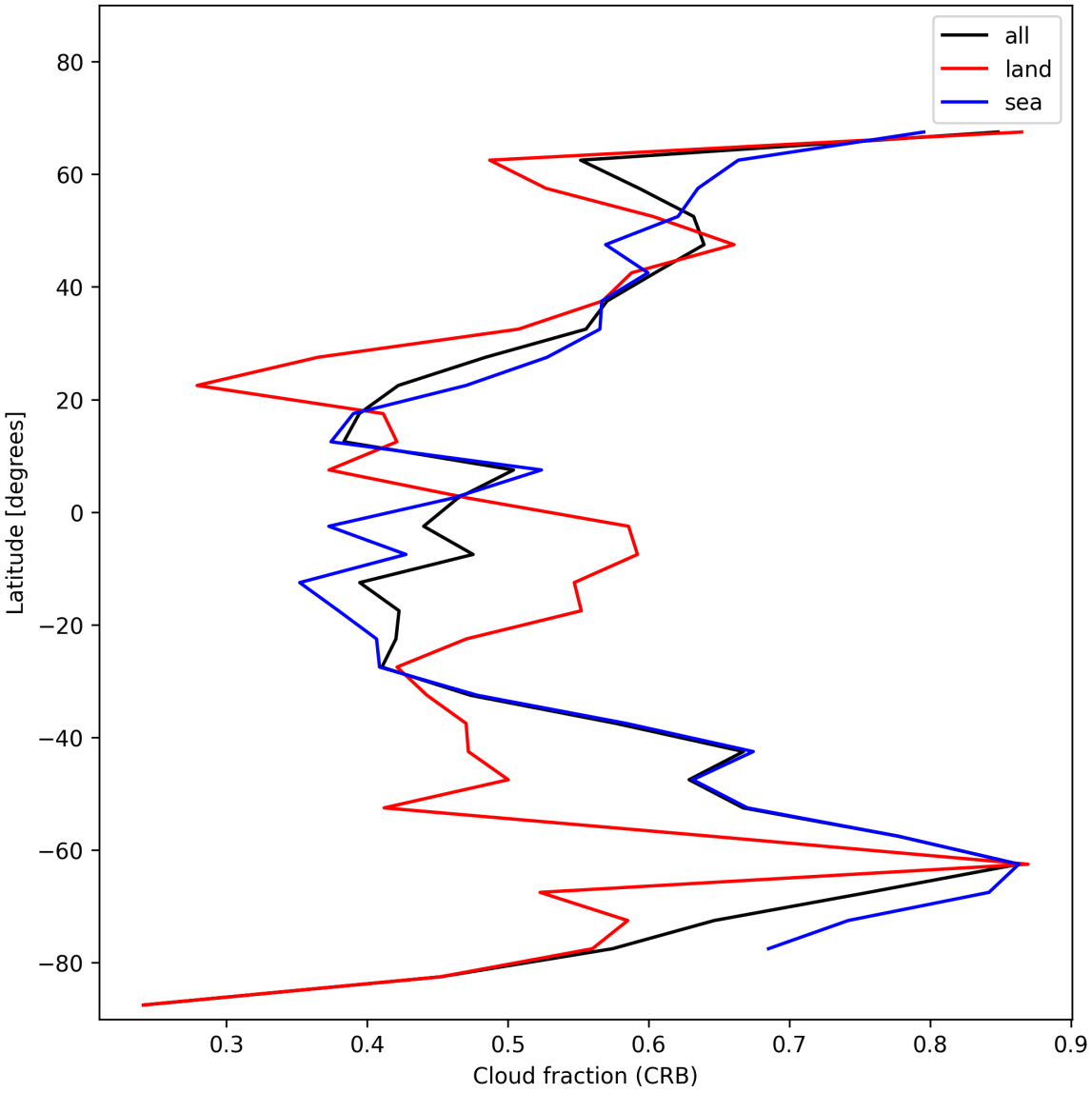

Figure 24: Zonal average of “Cloud fraction (CRB)” for 2024-12-28 to 2024-12-29.

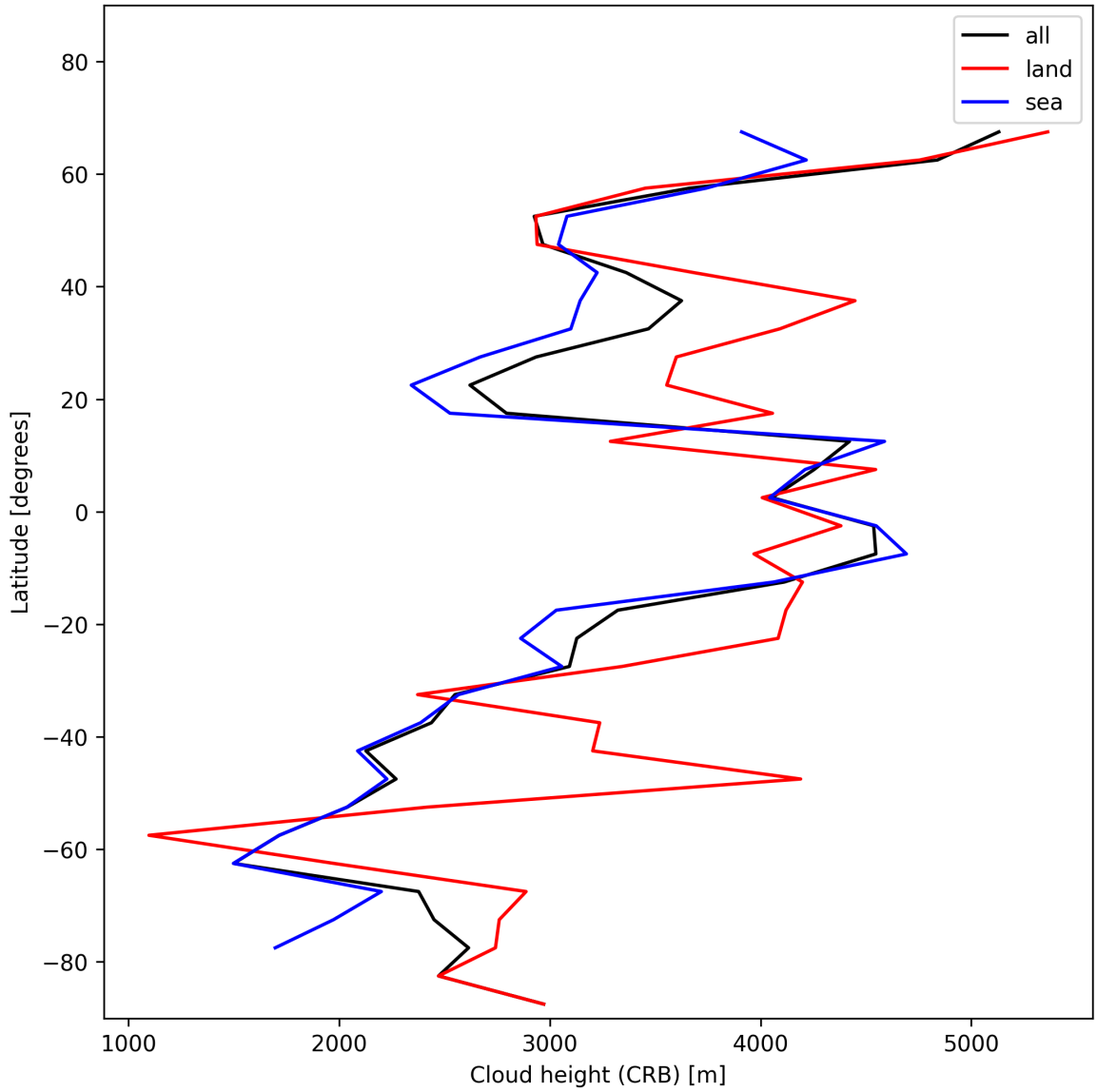

Figure 25: Zonal average of “Cloud height (CRB)” for 2024-12-28 to 2024-12-29.

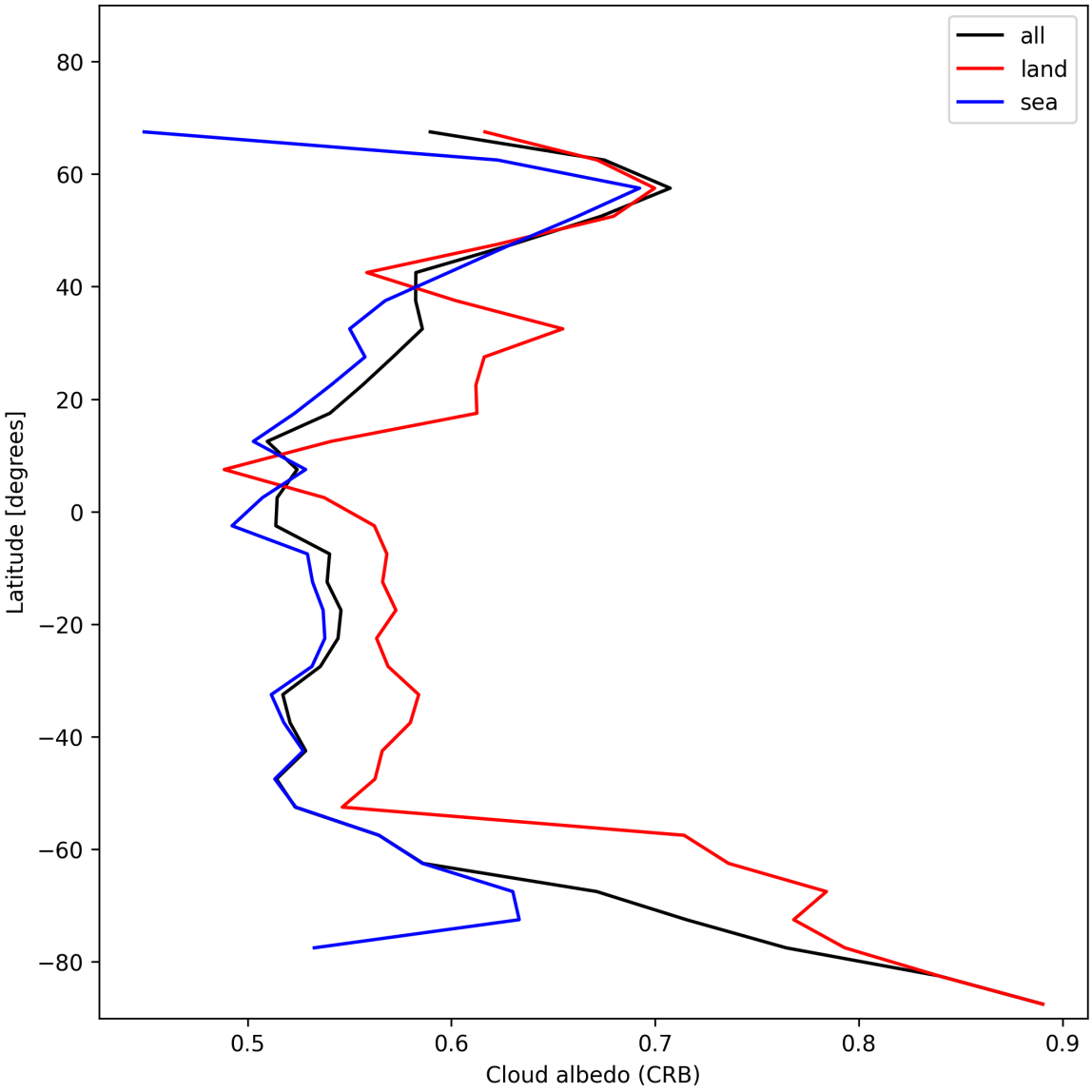

Figure 26: Zonal average of “Cloud albedo (CRB)” for 2024-12-28 to 2024-12-29.

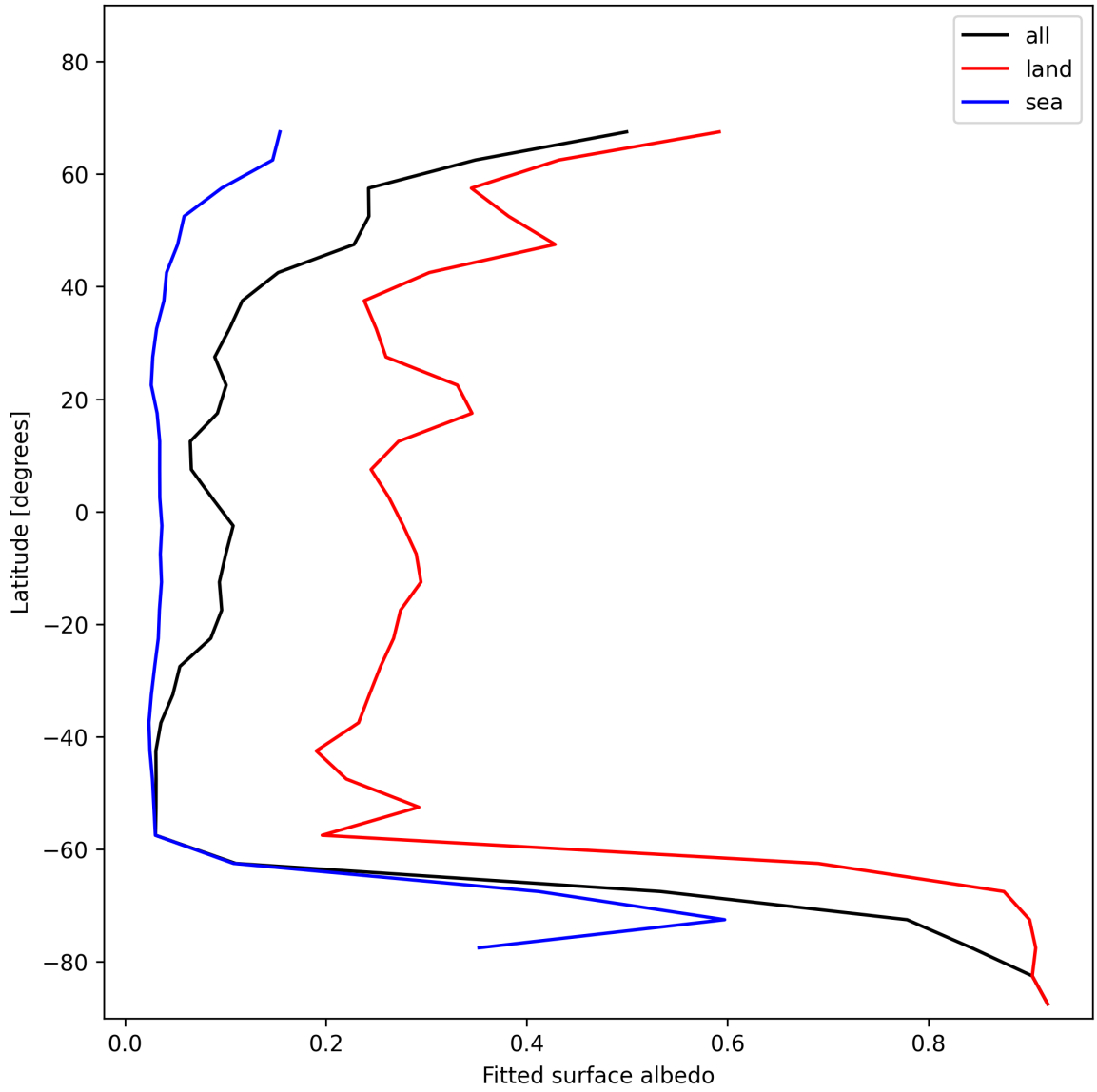

Figure 27: Zonal average of “Fitted surface albedo” for 2024-12-28 to 2024-12-29.

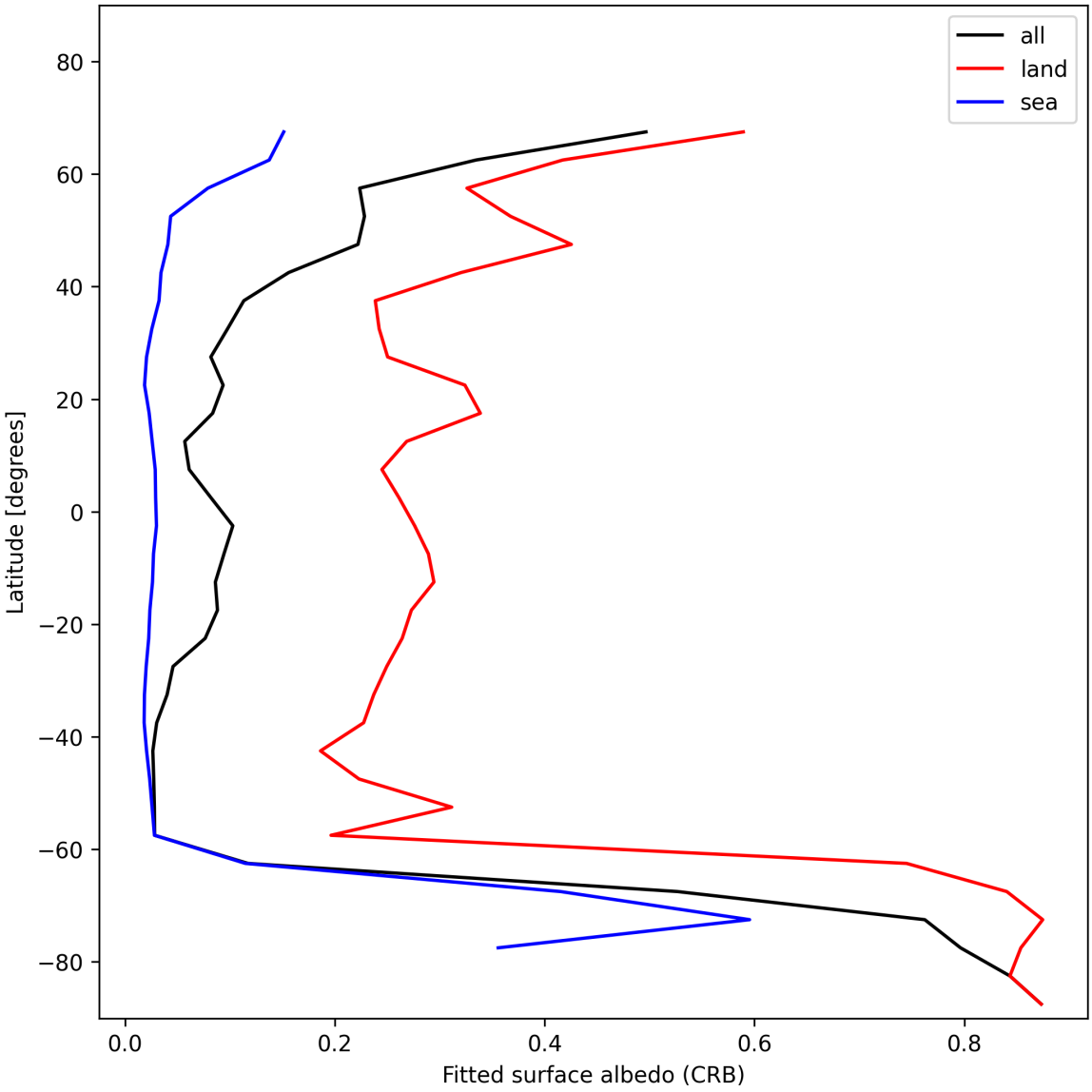

Figure 28: Zonal average of “Fitted surface albedo (CRB)” for 2024-12-28 to 2024-12-29.

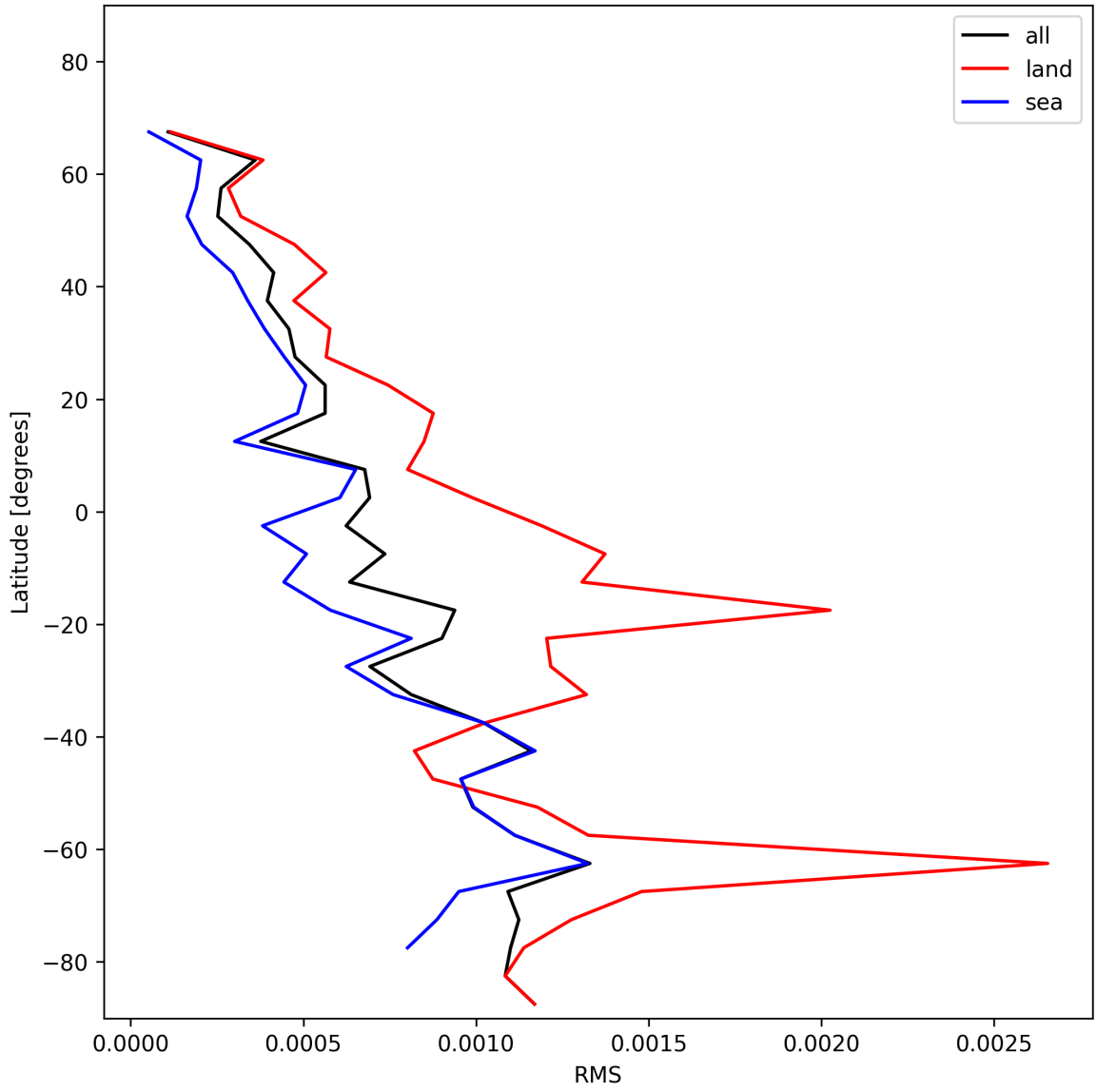

Figure 29: Zonal average of “RMS” for 2024-12-28 to 2024-12-29.

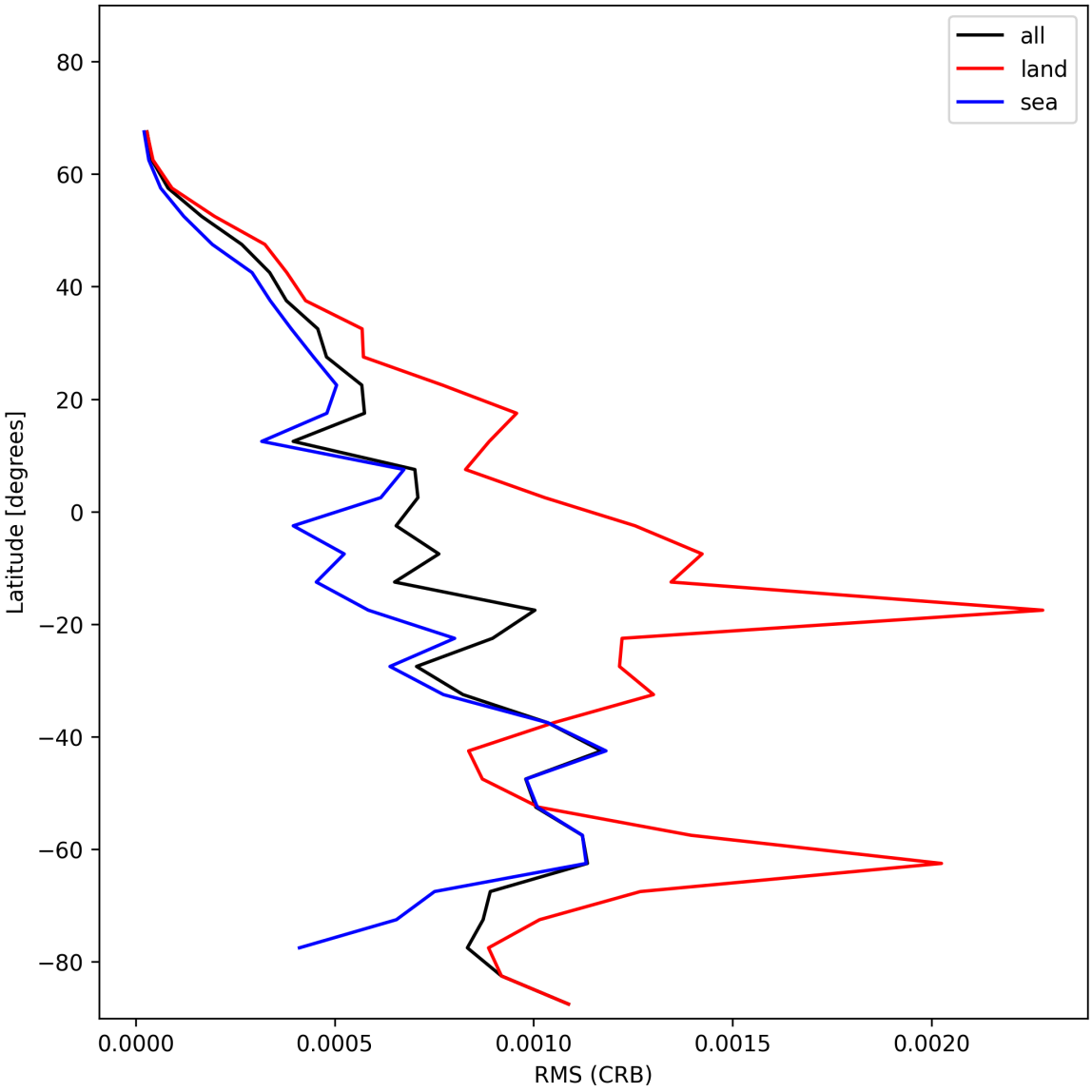

Figure 30: Zonal average of “RMS (CRB)” for 2024-12-28 to 2024-12-29.

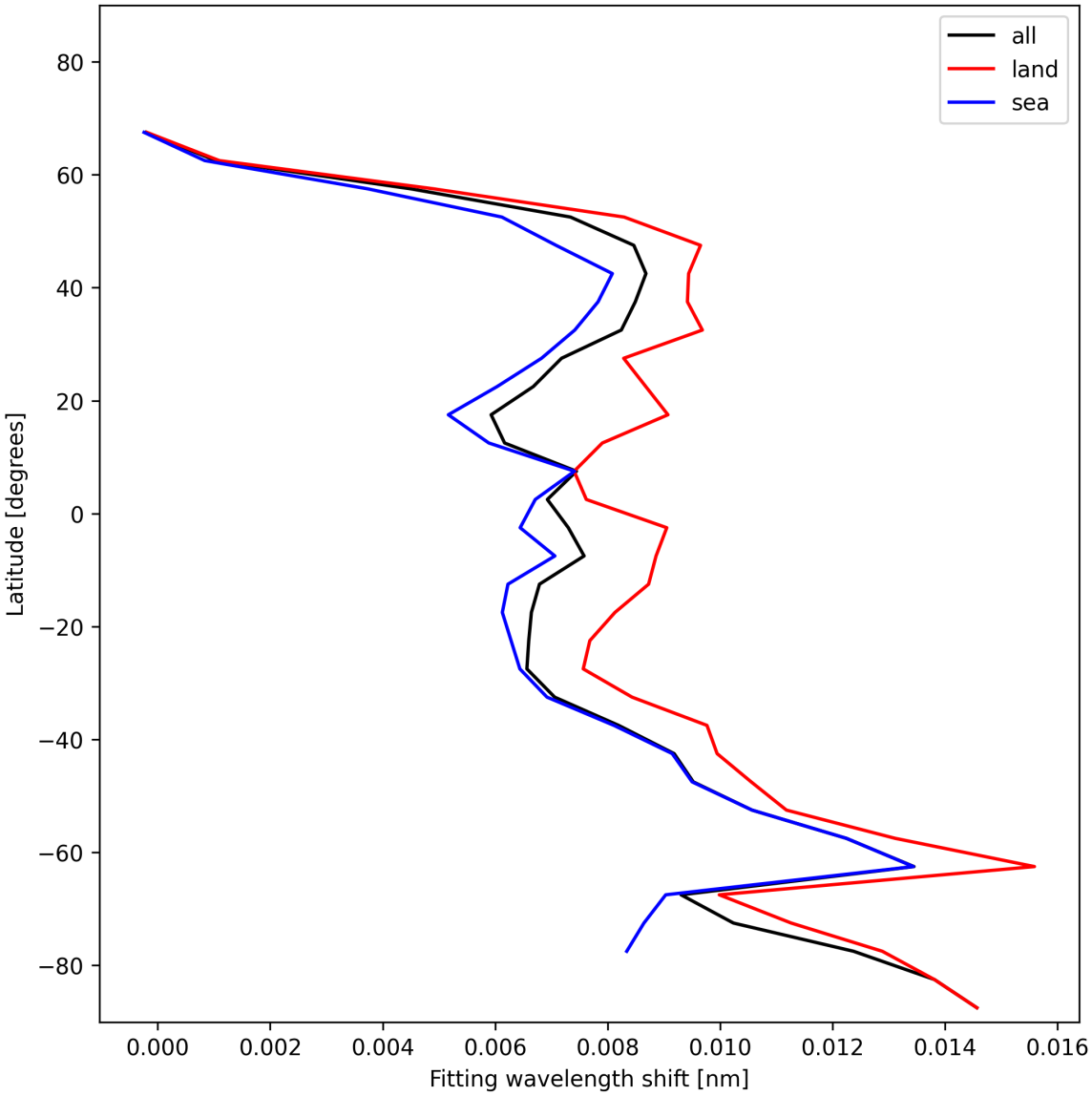

Figure 31: Zonal average of “Fitting wavelength shift” for 2024-12-28 to 2024-12-29.

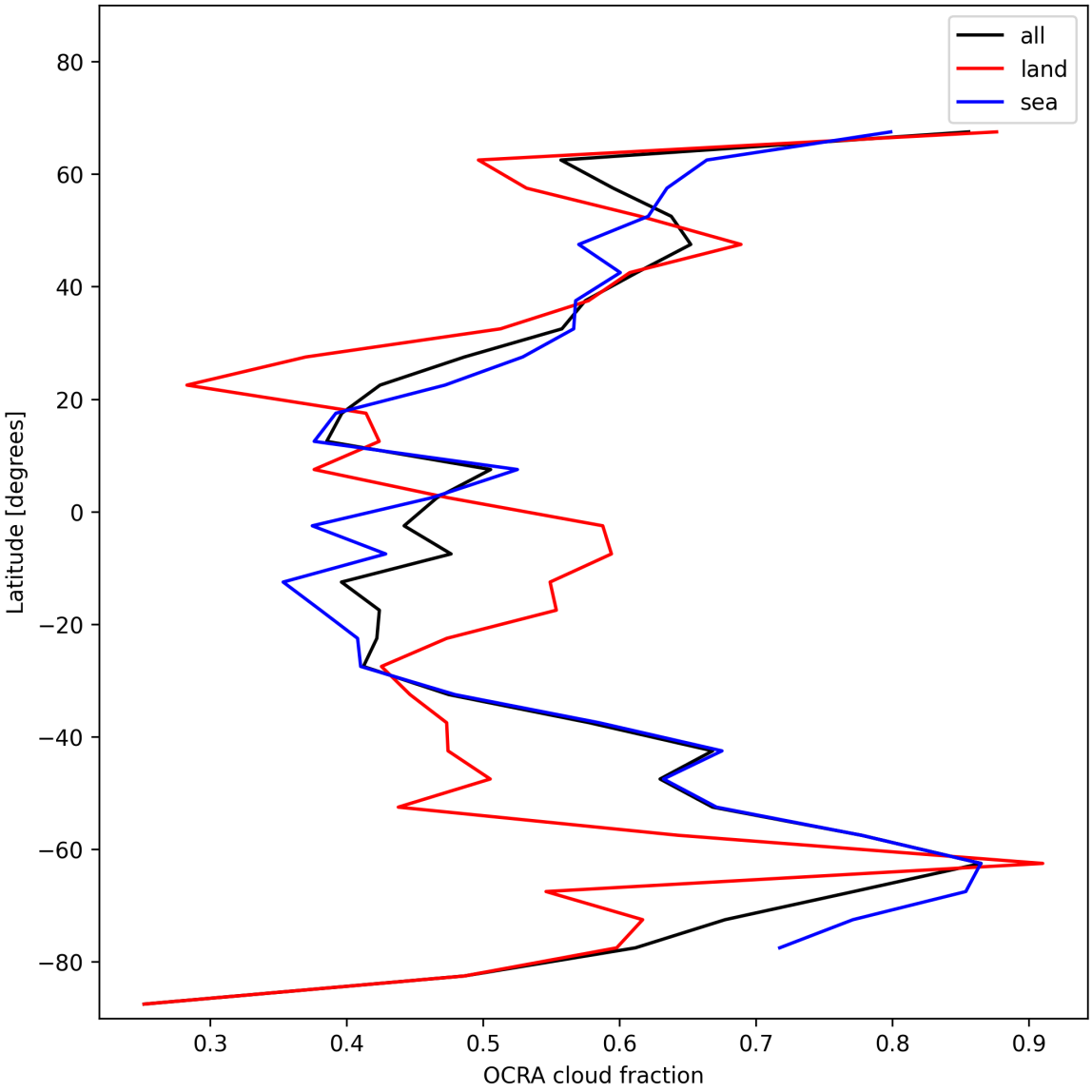

Figure 32: Zonal average of “OCRA cloud fraction” for 2024-12-28 to 2024-12-29.

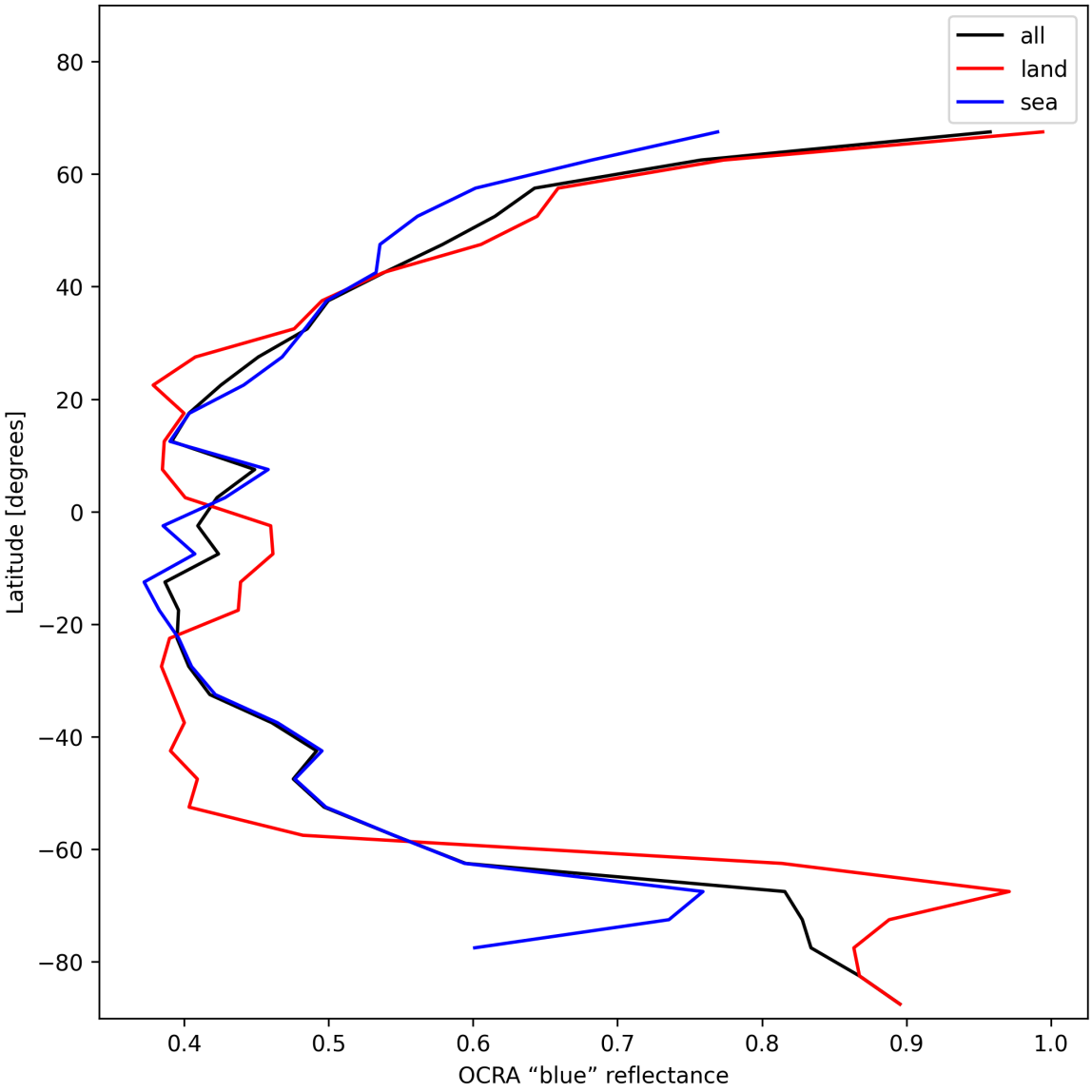

Figure 33: Zonal average of “OCRA “blue” reflectance” for 2024-12-28 to 2024-12-29.

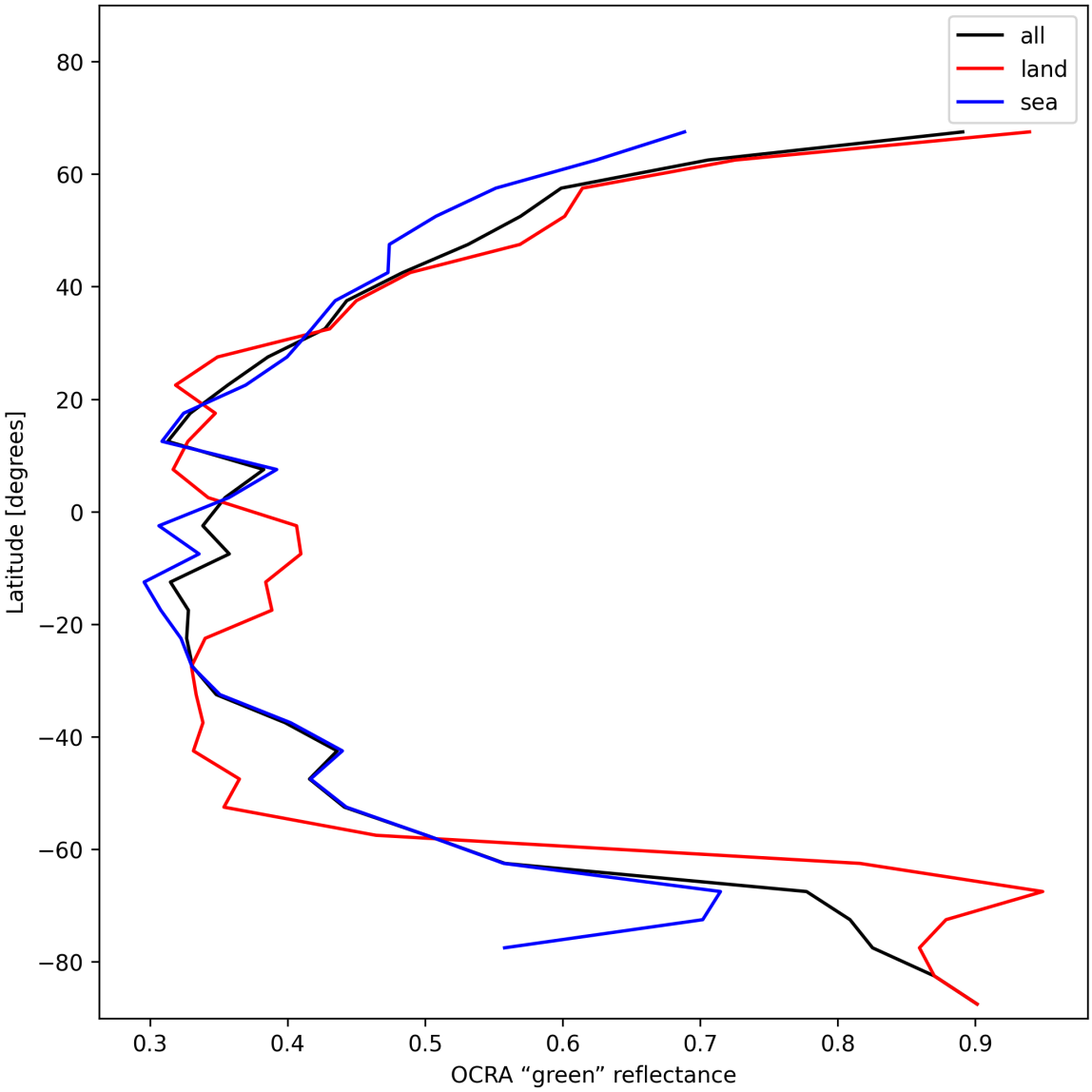

Figure 34: Zonal average of “OCRA “green” reflectance” for 2024-12-28 to 2024-12-29.

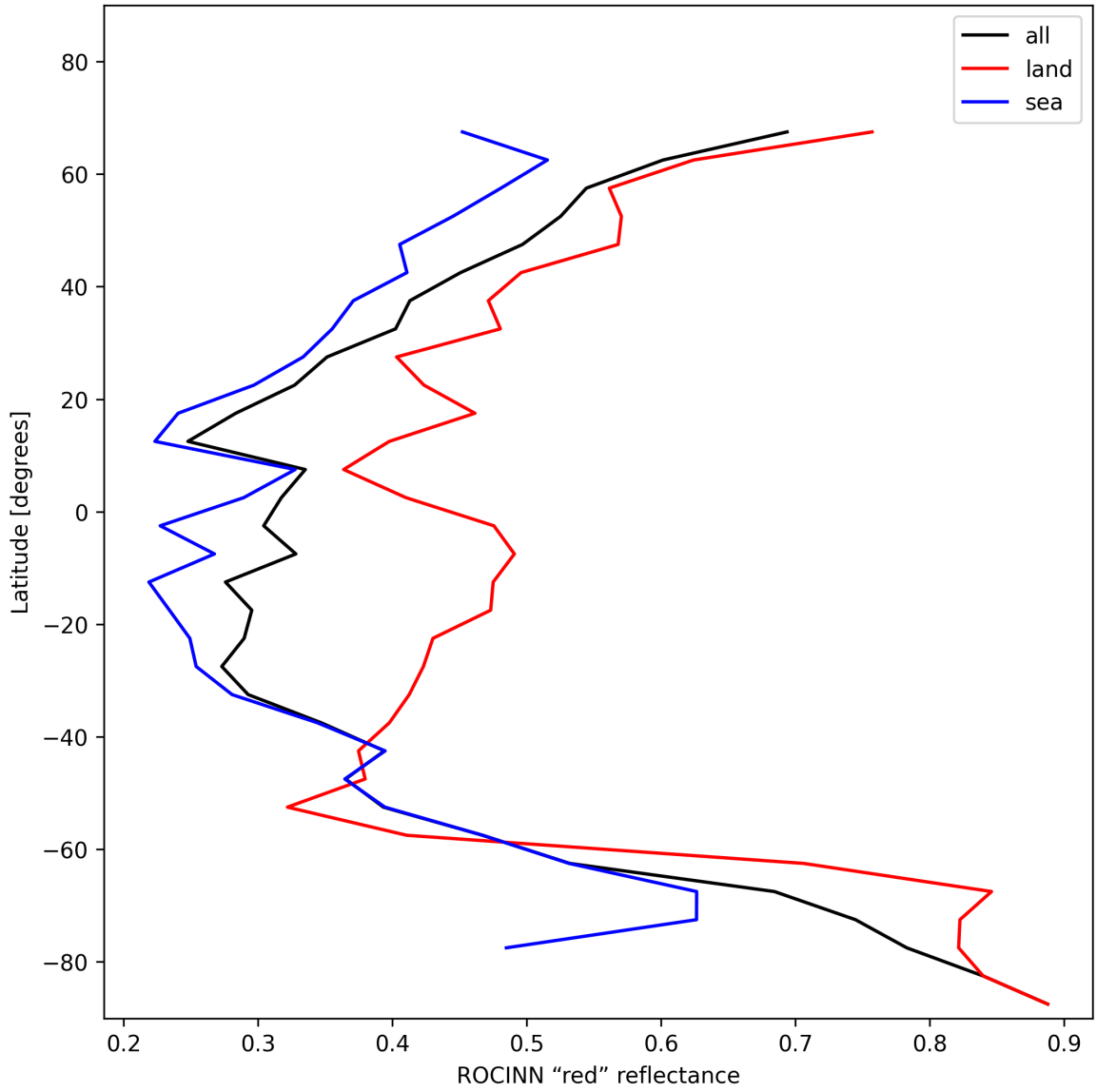

Figure 35: Zonal average of “ROCINN “red” reflectance” for 2024-12-28 to 2024-12-29.

8 Histograms

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

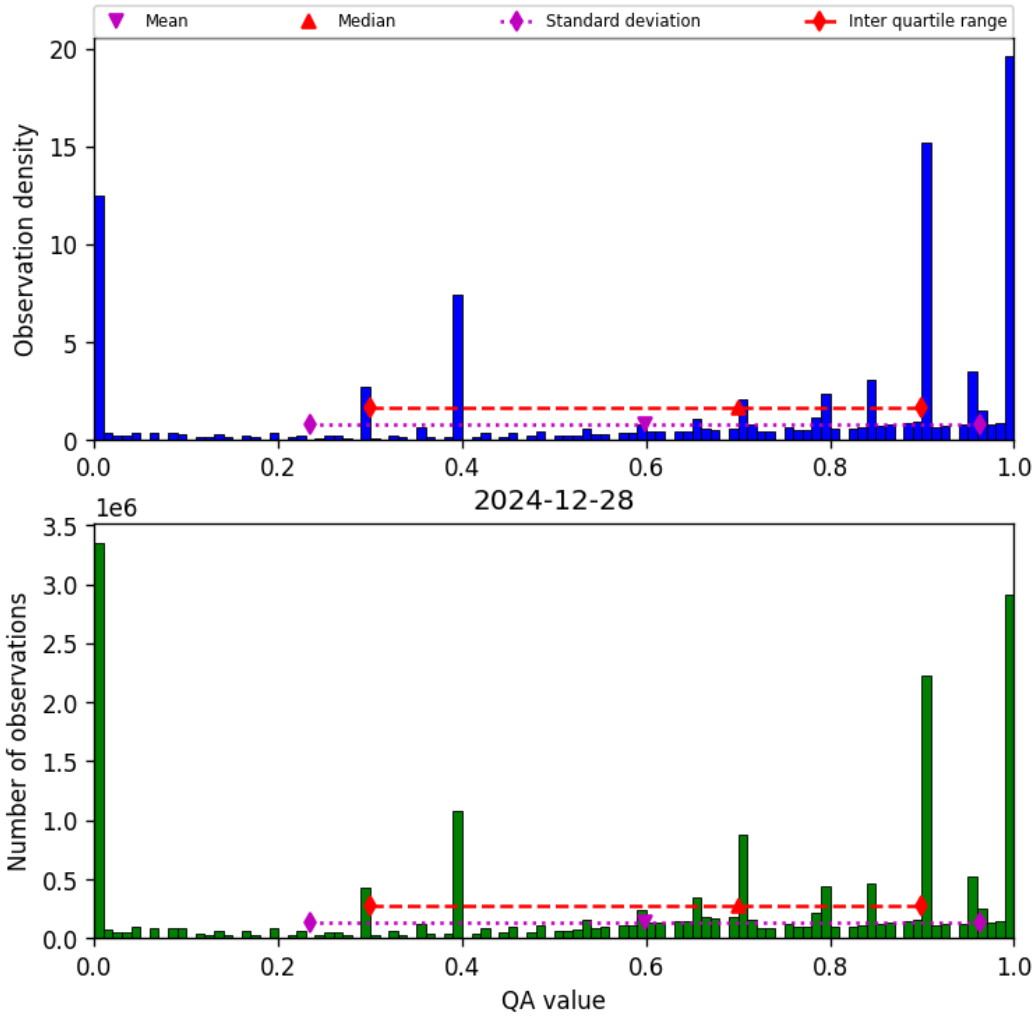

Figure 36: Histogram of “QA value” for 2024-12-28 to 2024-12-29

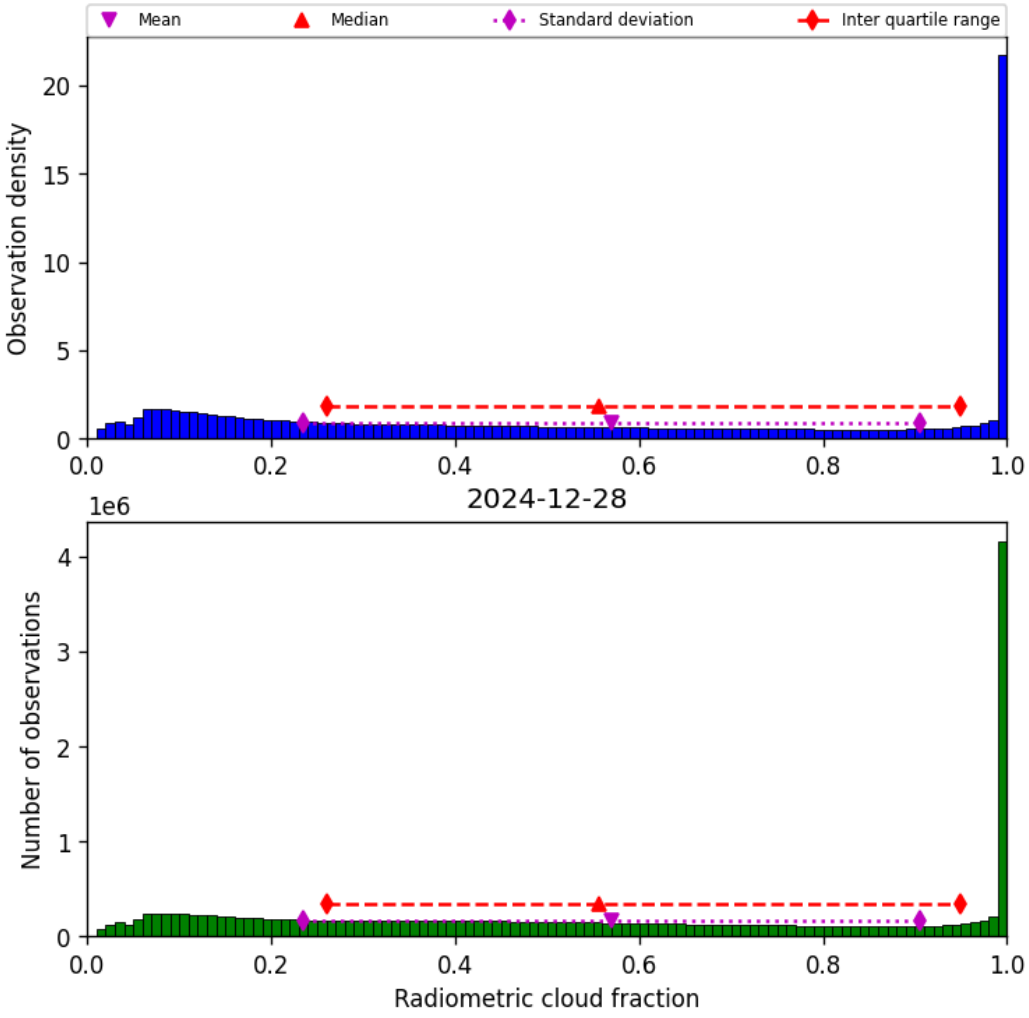

Figure 37: Histogram of “Radiometric cloud fraction” for 2024-12-28 to 2024-12-29

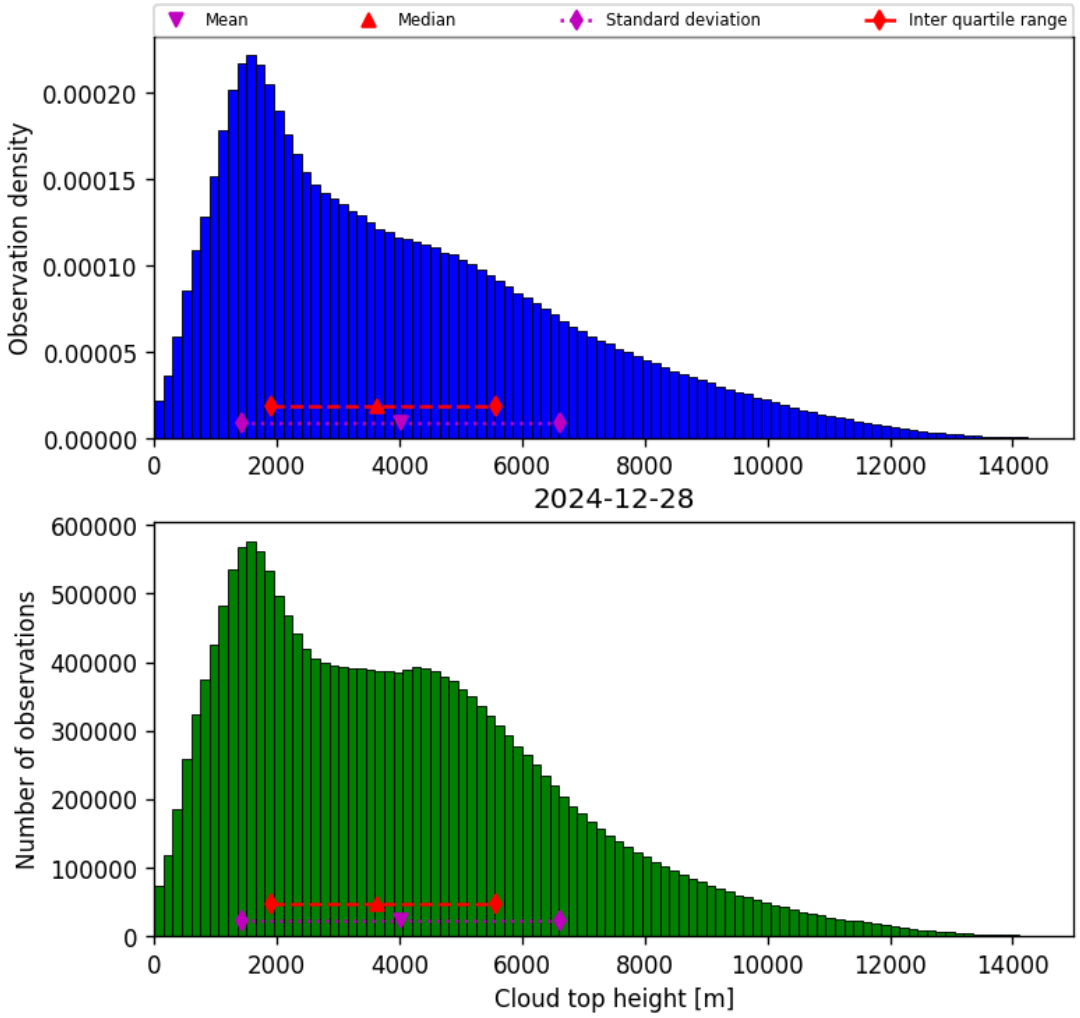

Figure 38: Histogram of “Cloud top height” for 2024-12-28 to 2024-12-29

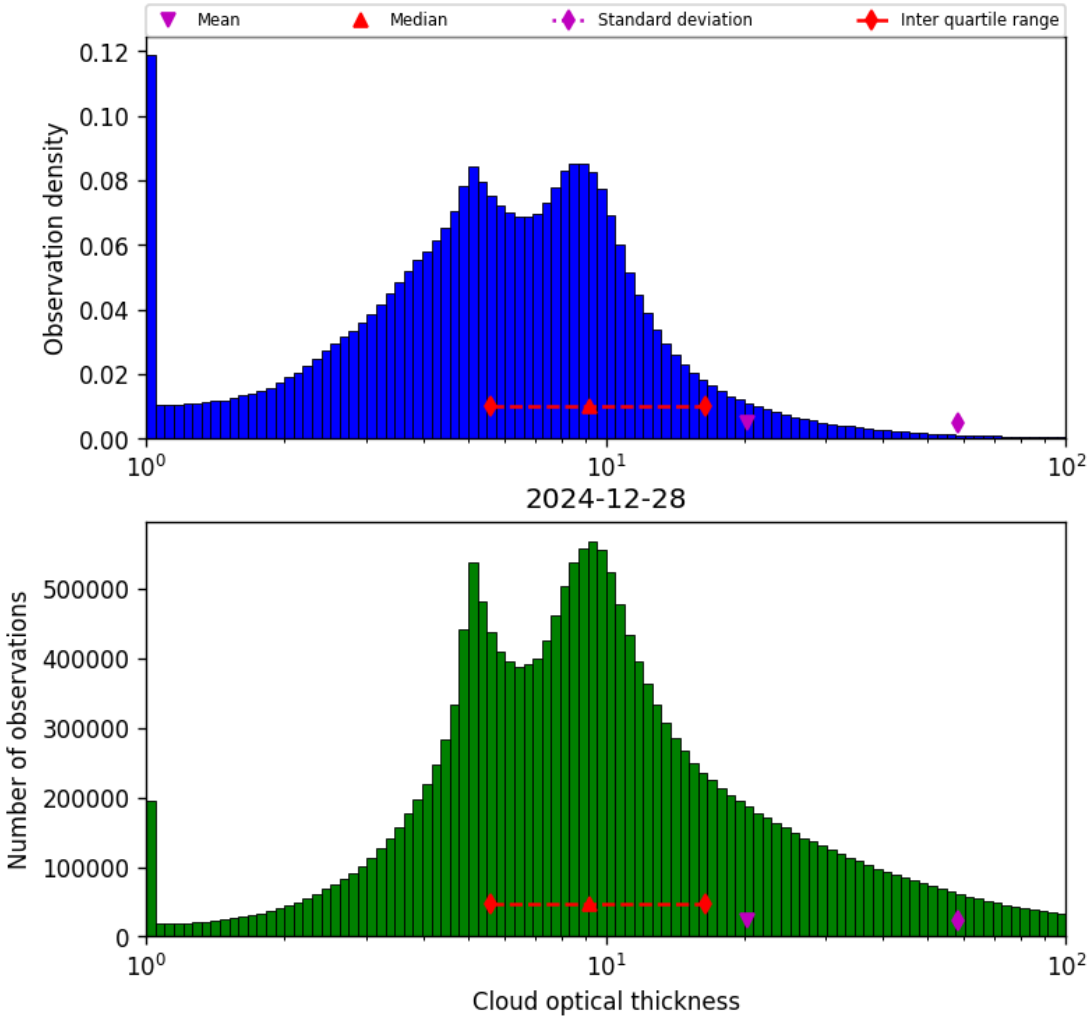

Figure 39: Histogram of “Cloud optical thickness” for 2024-12-28 to 2024-12-29

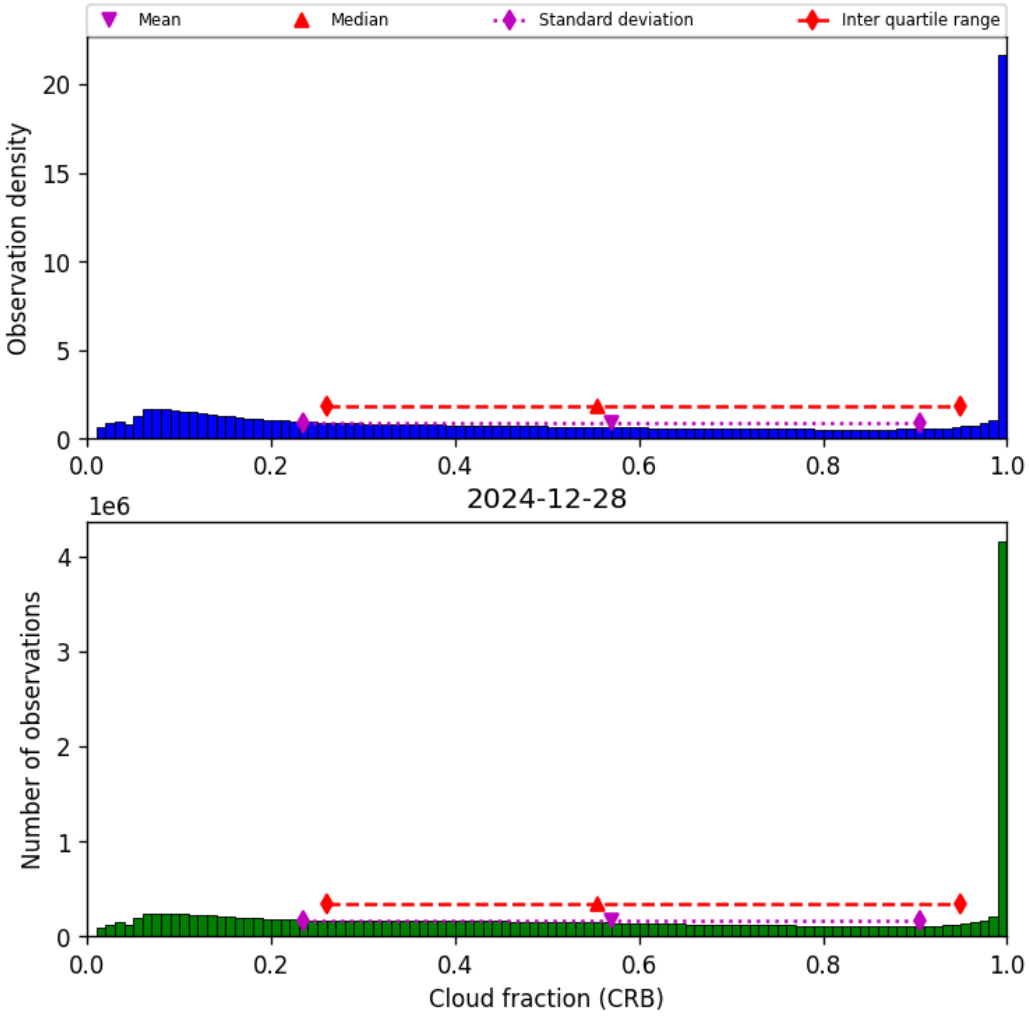

Figure 40: Histogram of “Cloud fraction (CRB)” for 2024-12-28 to 2024-12-29

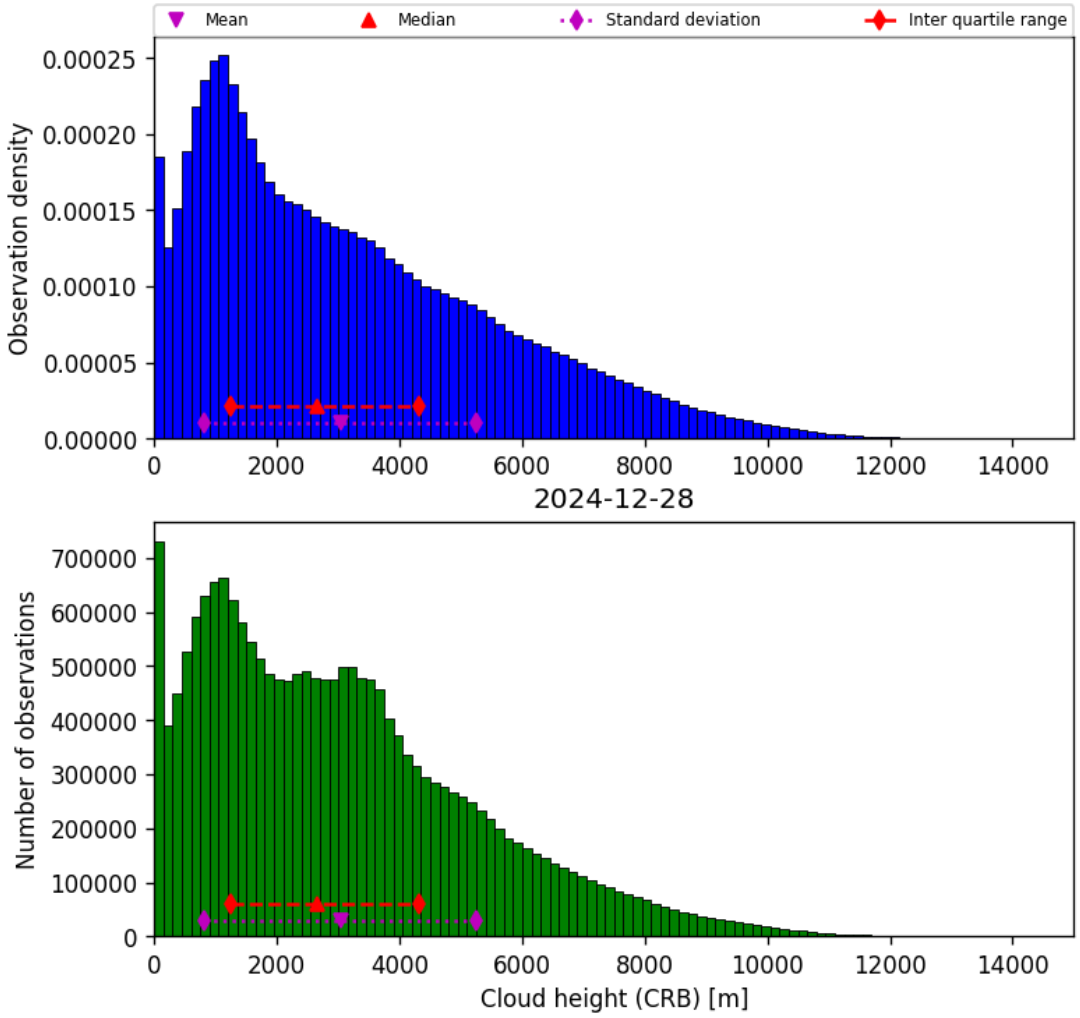

Figure 41: Histogram of “Cloud height (CRB)” for 2024-12-28 to 2024-12-29

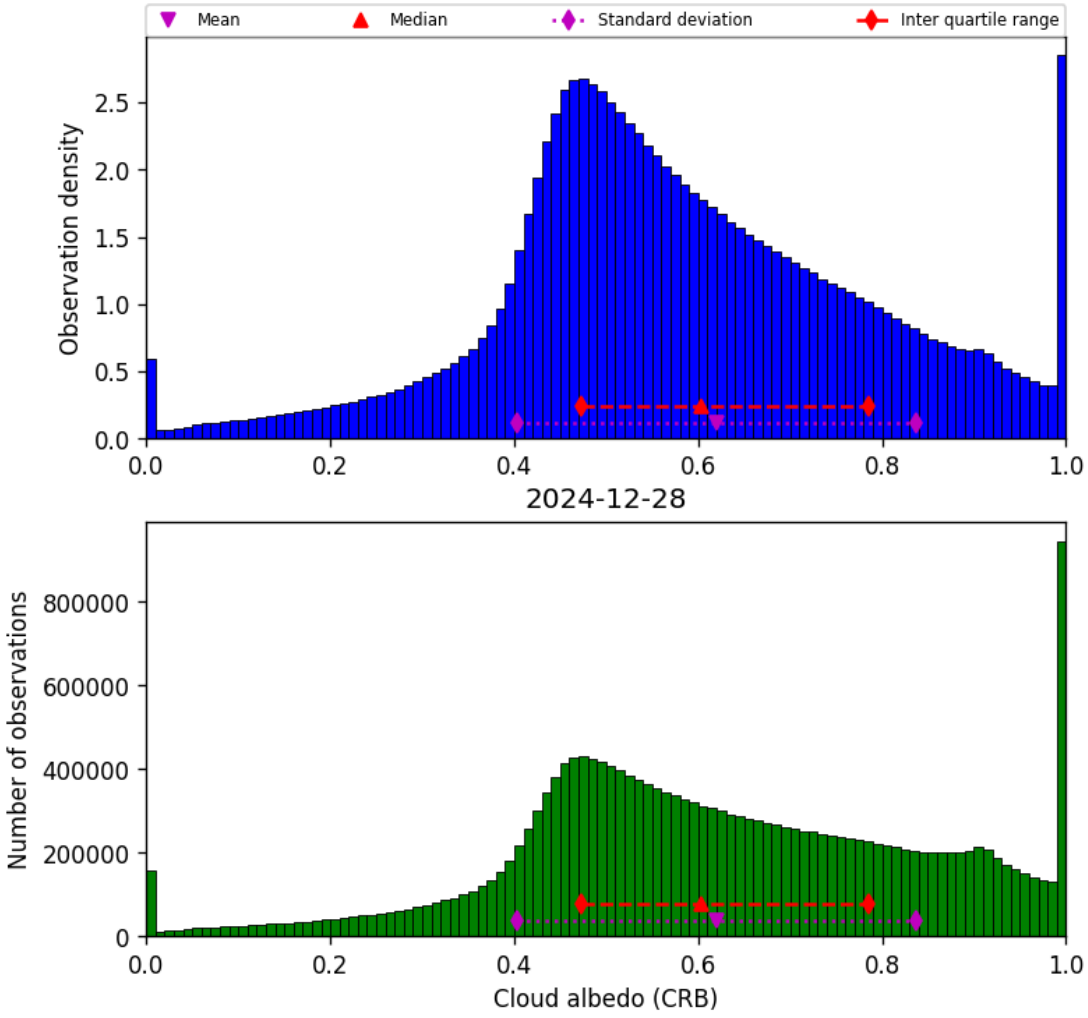

Figure 42: Histogram of “Cloud albedo (CRB)” for 2024-12-28 to 2024-12-29

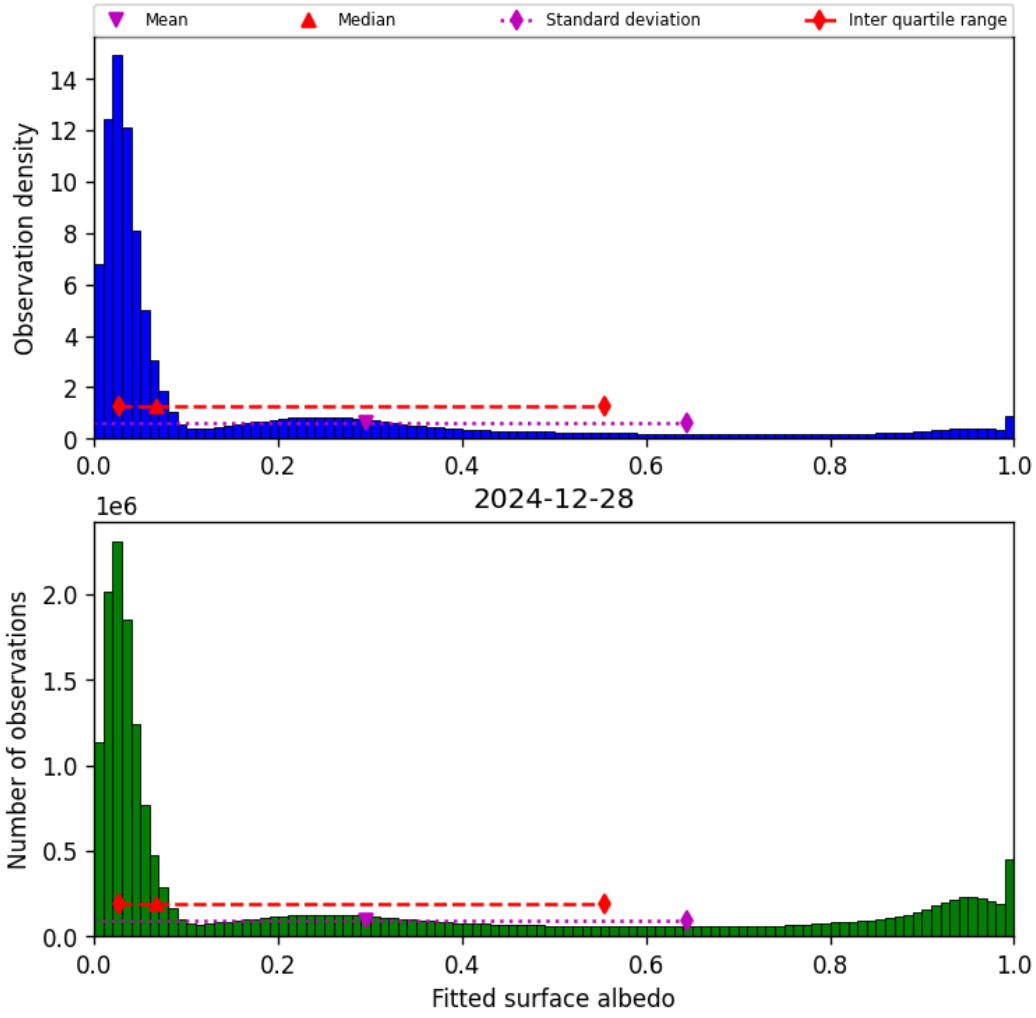

Figure 43: Histogram of “Fitted surface albedo” for 2024-12-28 to 2024-12-29

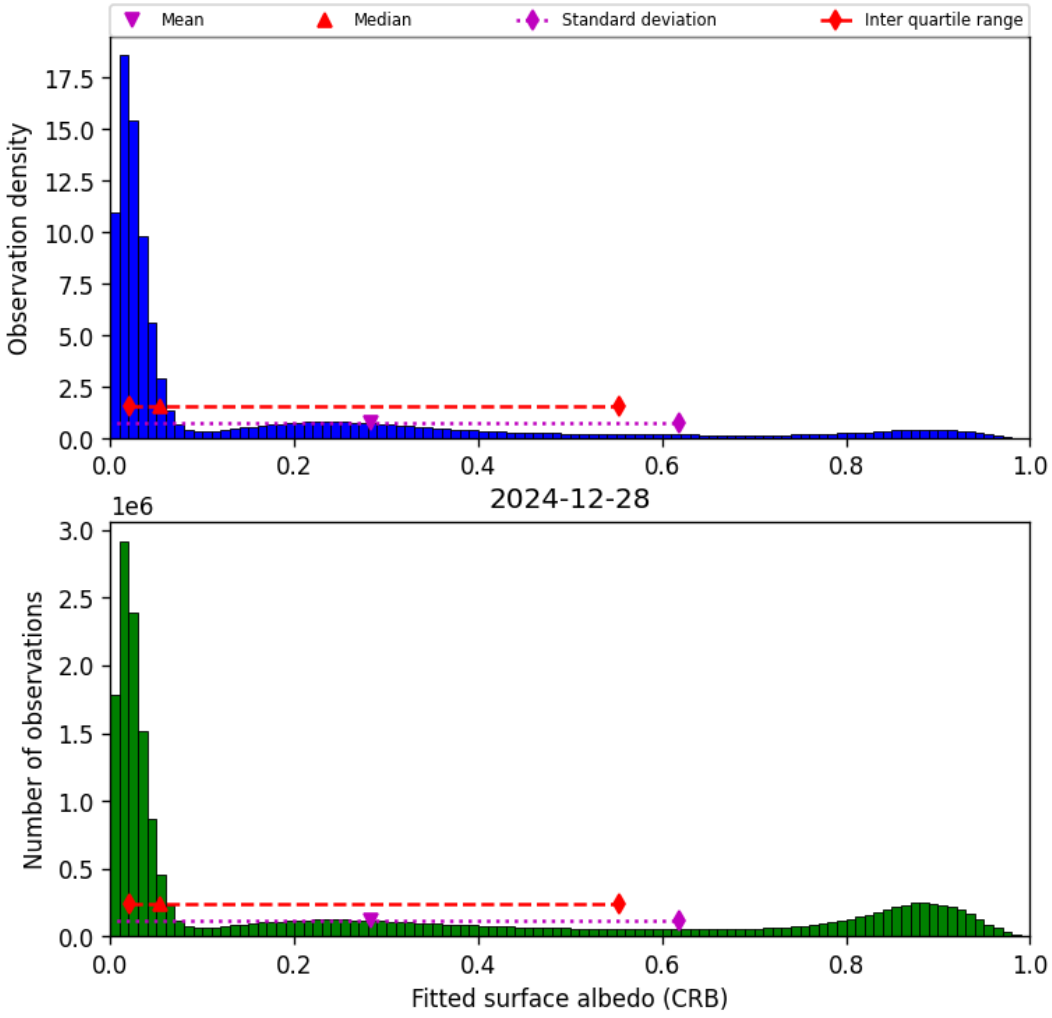

Figure 44: Histogram of “Fitted surface albedo (CRB)” for 2024-12-28 to 2024-12-29

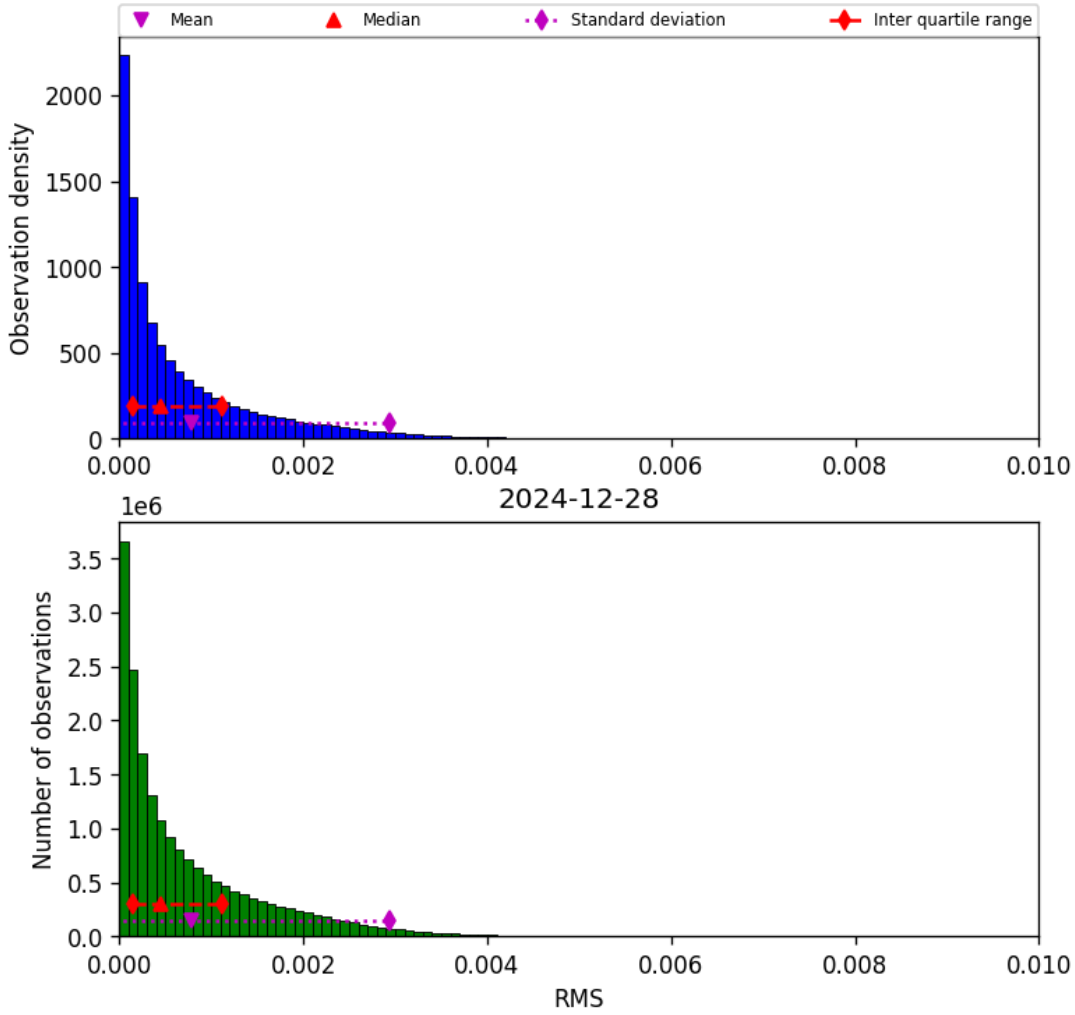

Figure 45: Histogram of “RMS” for 2024-12-28 to 2024-12-29

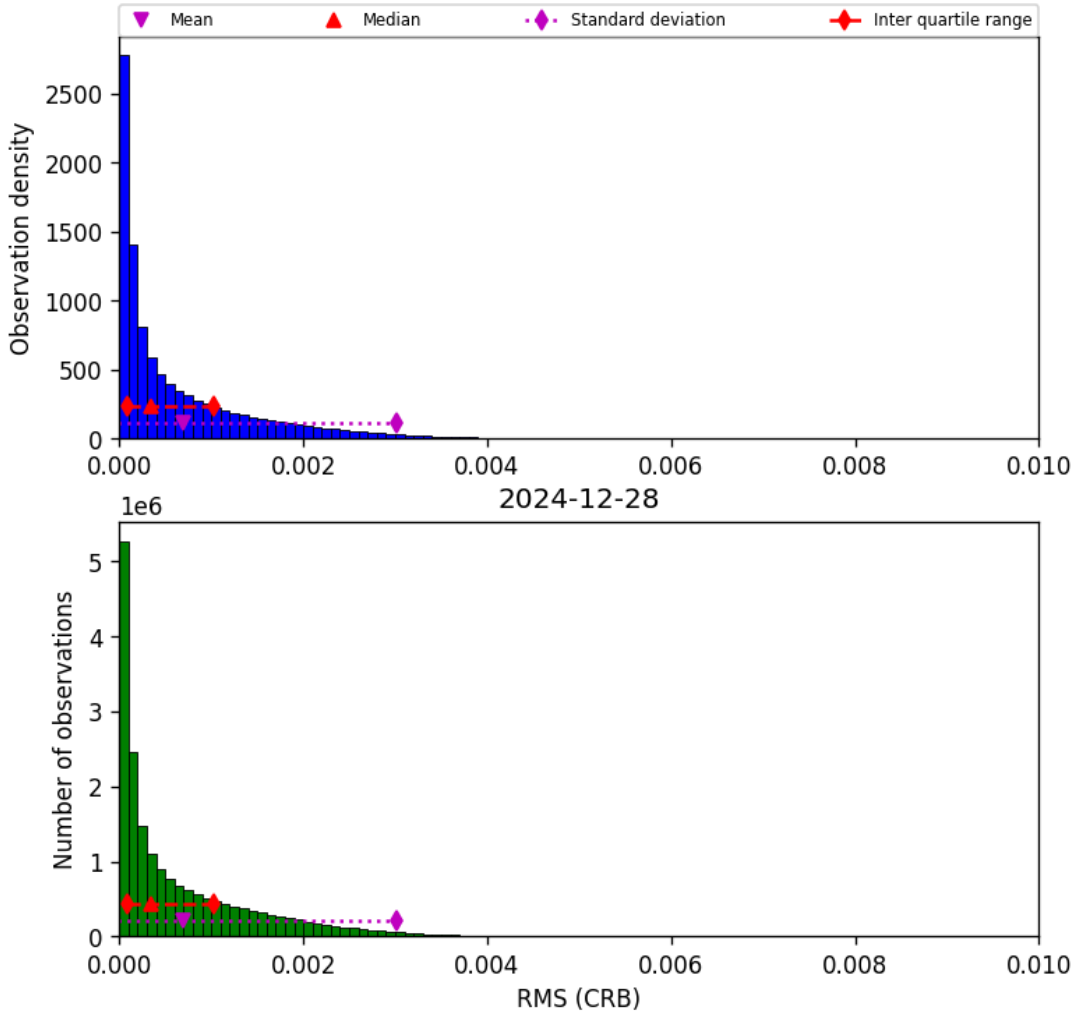

Figure 46: Histogram of “RMS (CRB)” for 2024-12-28 to 2024-12-29

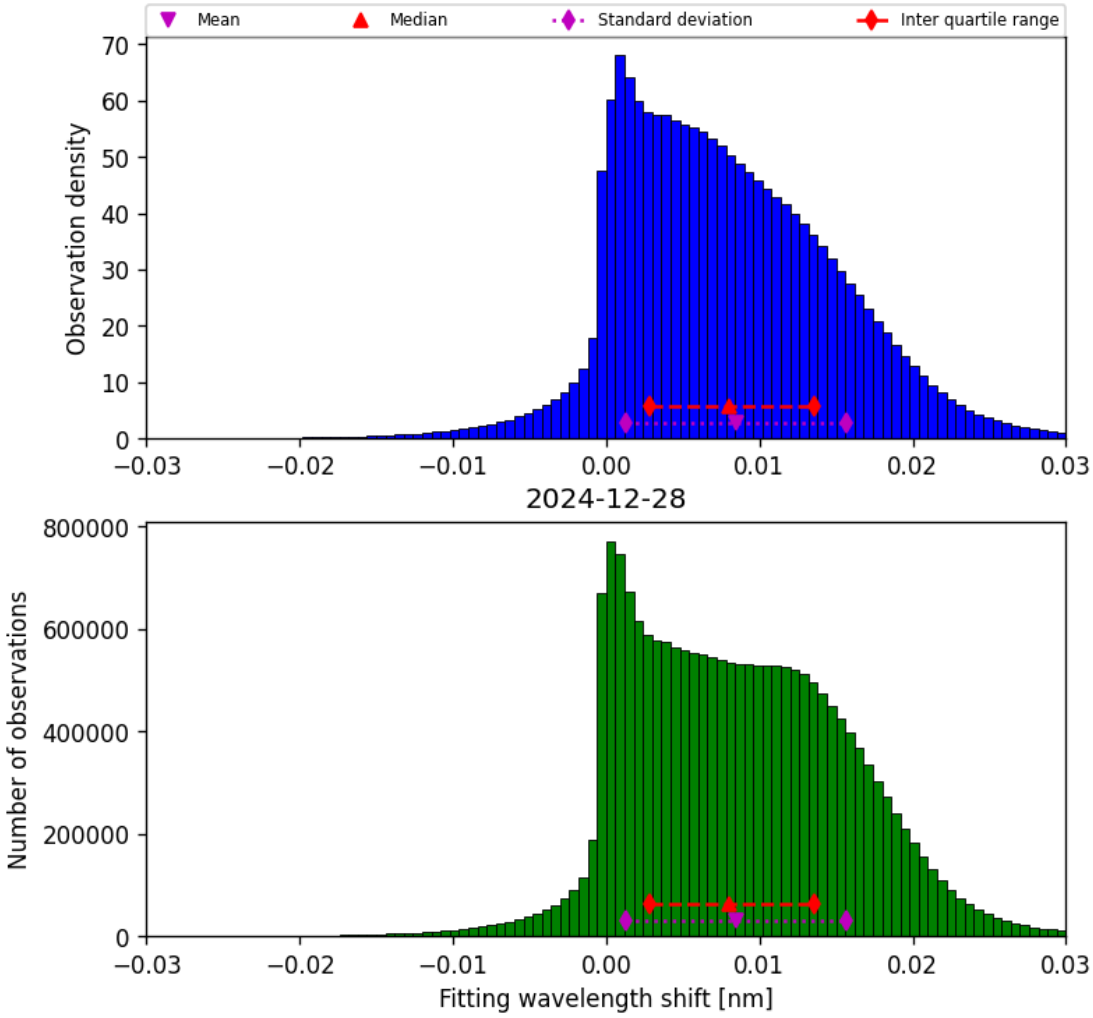

Figure 47: Histogram of “Fitting wavelength shift” for 2024-12-28 to 2024-12-29

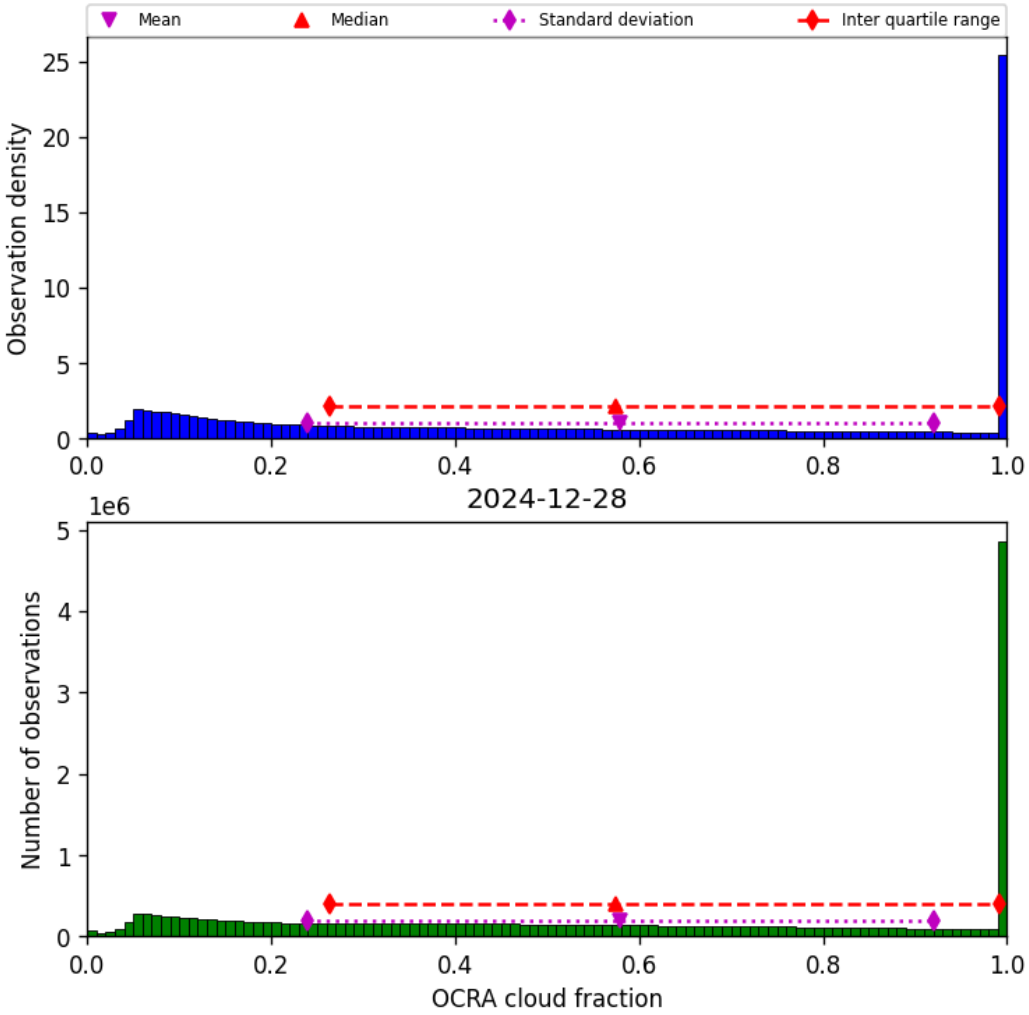

Figure 48: Histogram of “OCRA cloud fraction” for 2024-12-28 to 2024-12-29

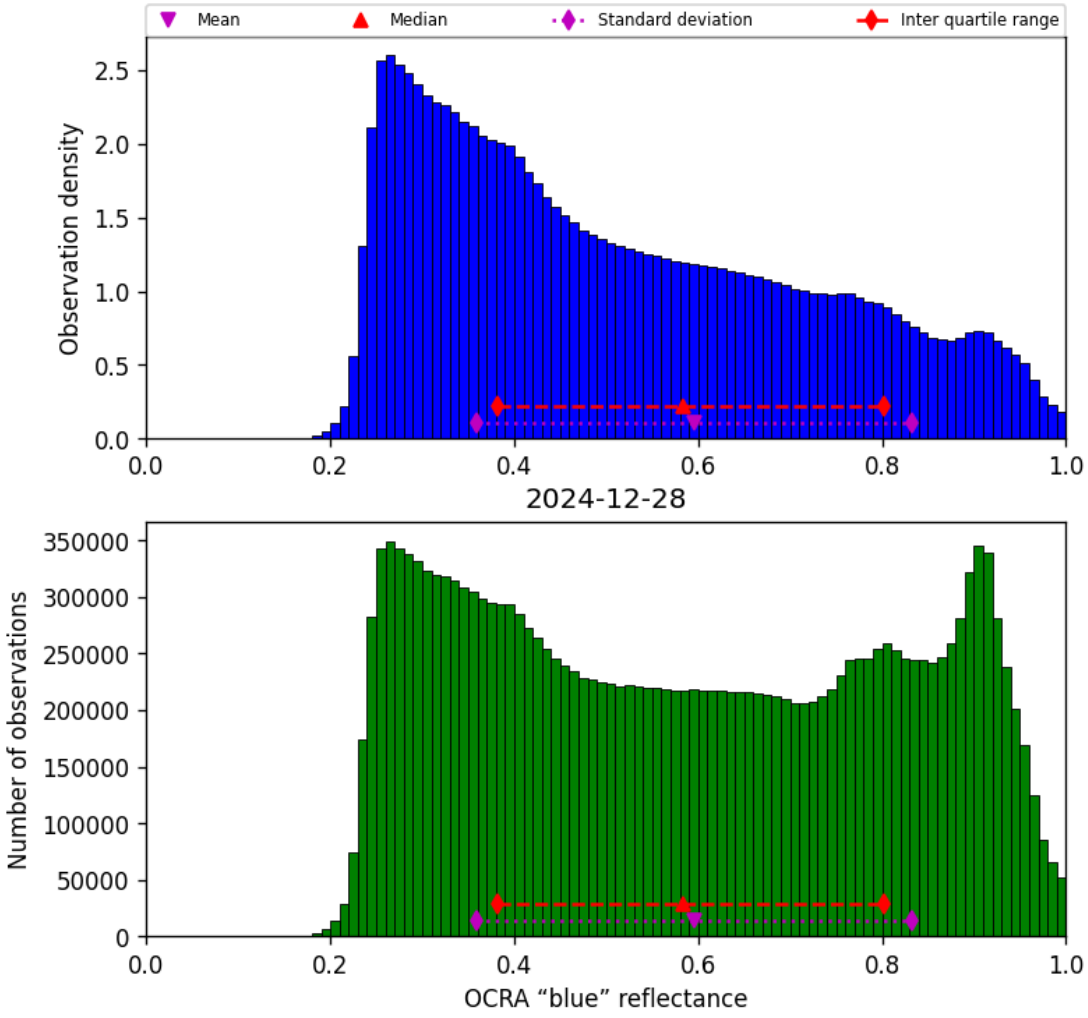

Figure 49: Histogram of “OCRA “blue” reflectance” for 2024-12-28 to 2024-12-29

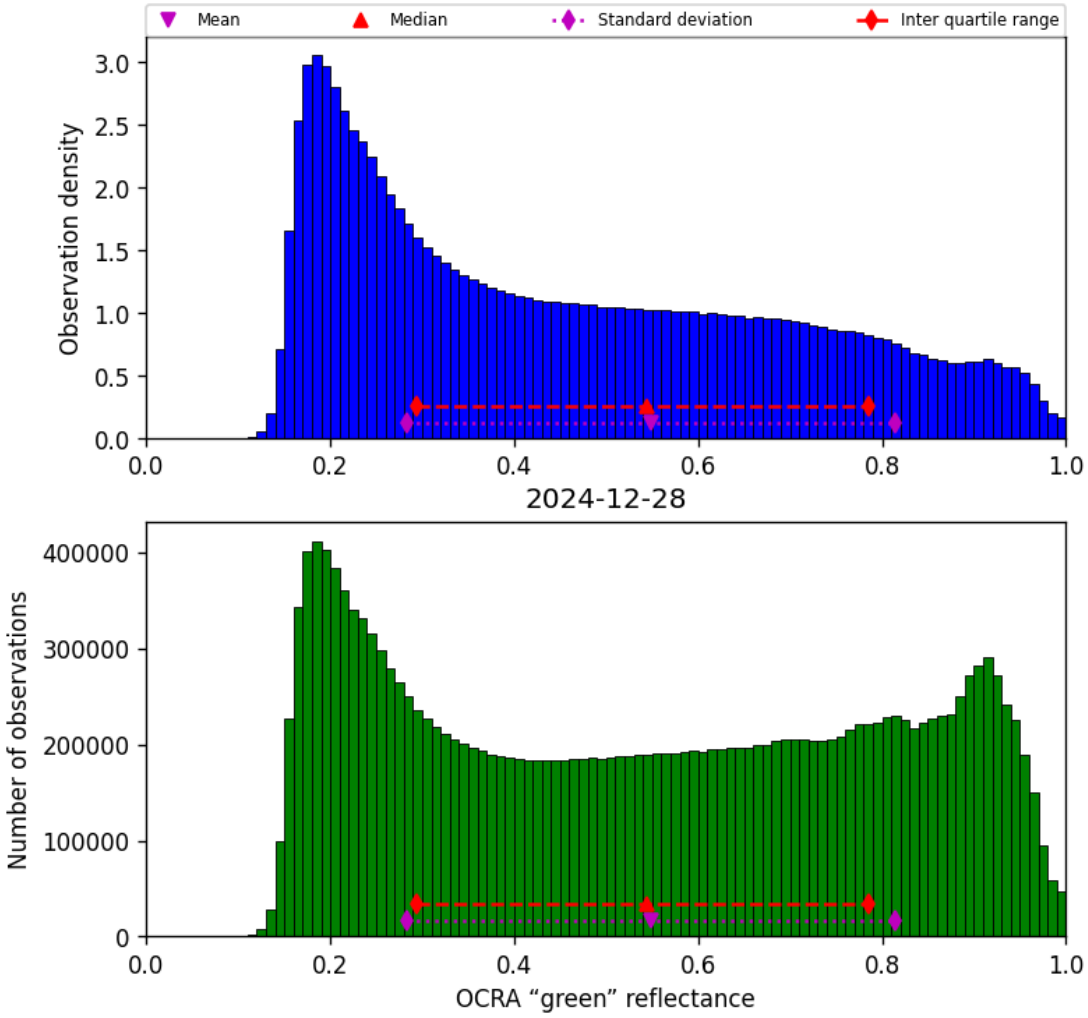

Figure 50: Histogram of “OCRA “green” reflectance” for 2024-12-28 to 2024-12-29

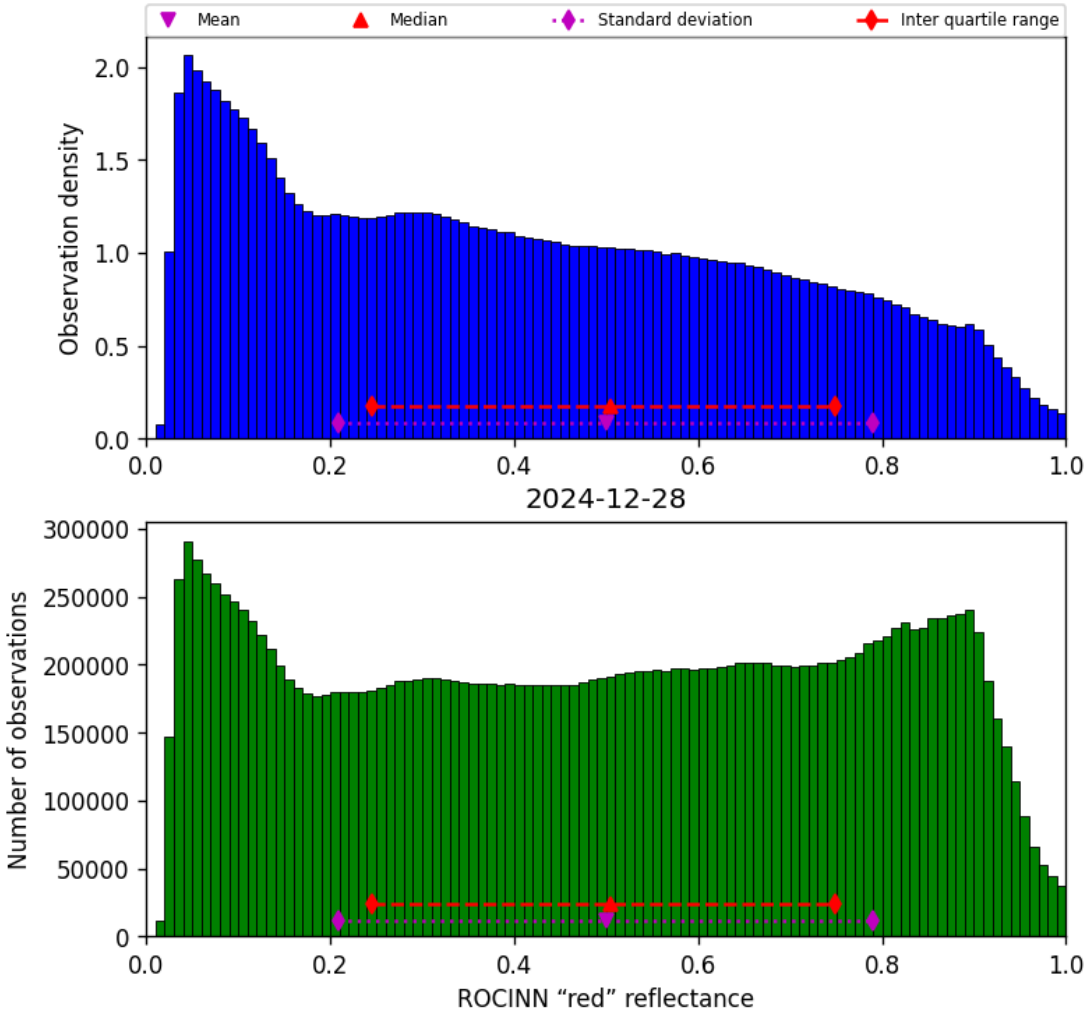

Figure 51: Histogram of “ROCINN “red” reflectance” for 2024-12-28 to 2024-12-29

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.

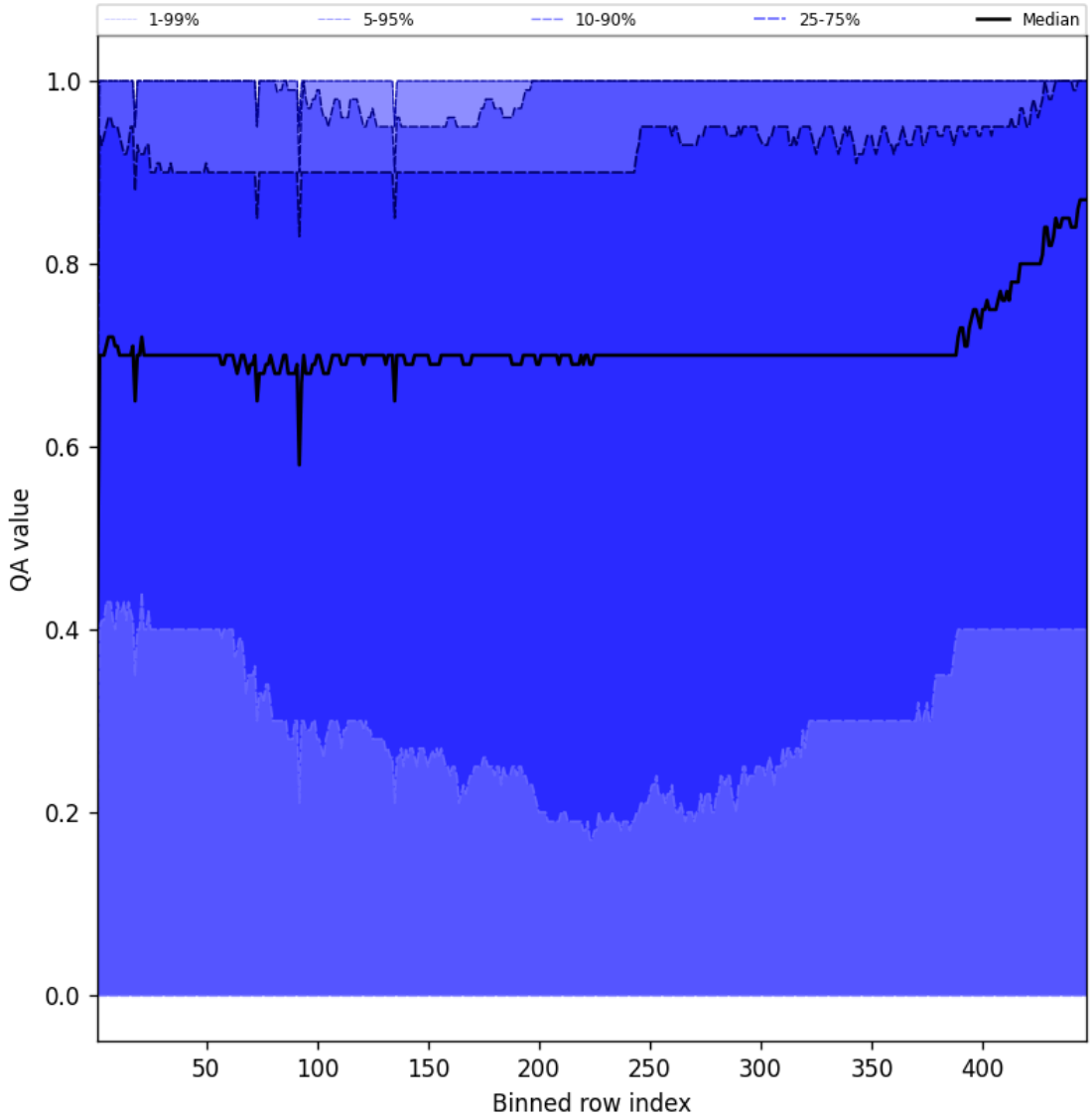

Figure 52: Along track statistics of “QA value” for 2024-12-28 to 2024-12-29

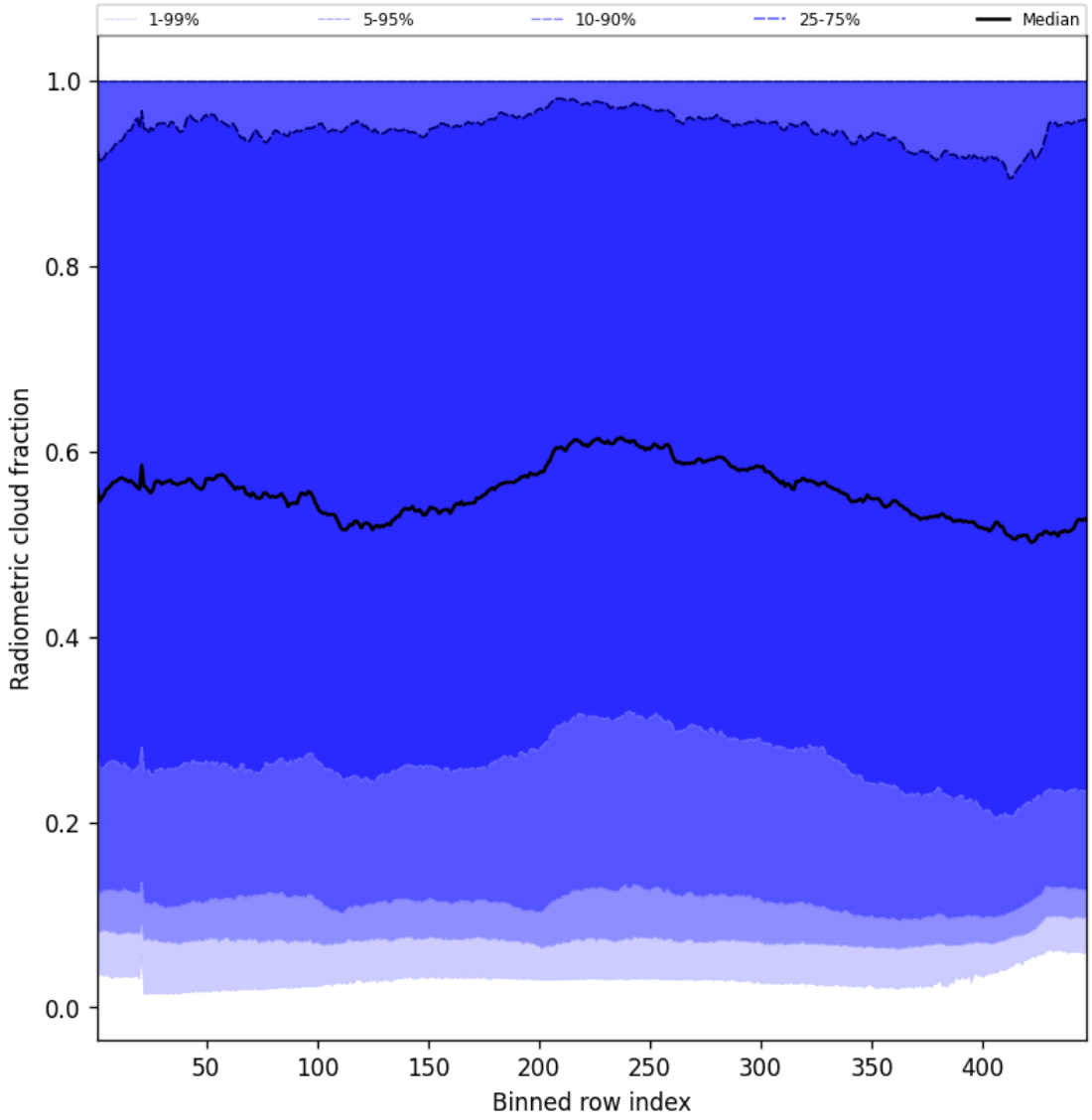

Figure 53: Along track statistics of “Radiometric cloud fraction” for 2024-12-28 to 2024-12-29

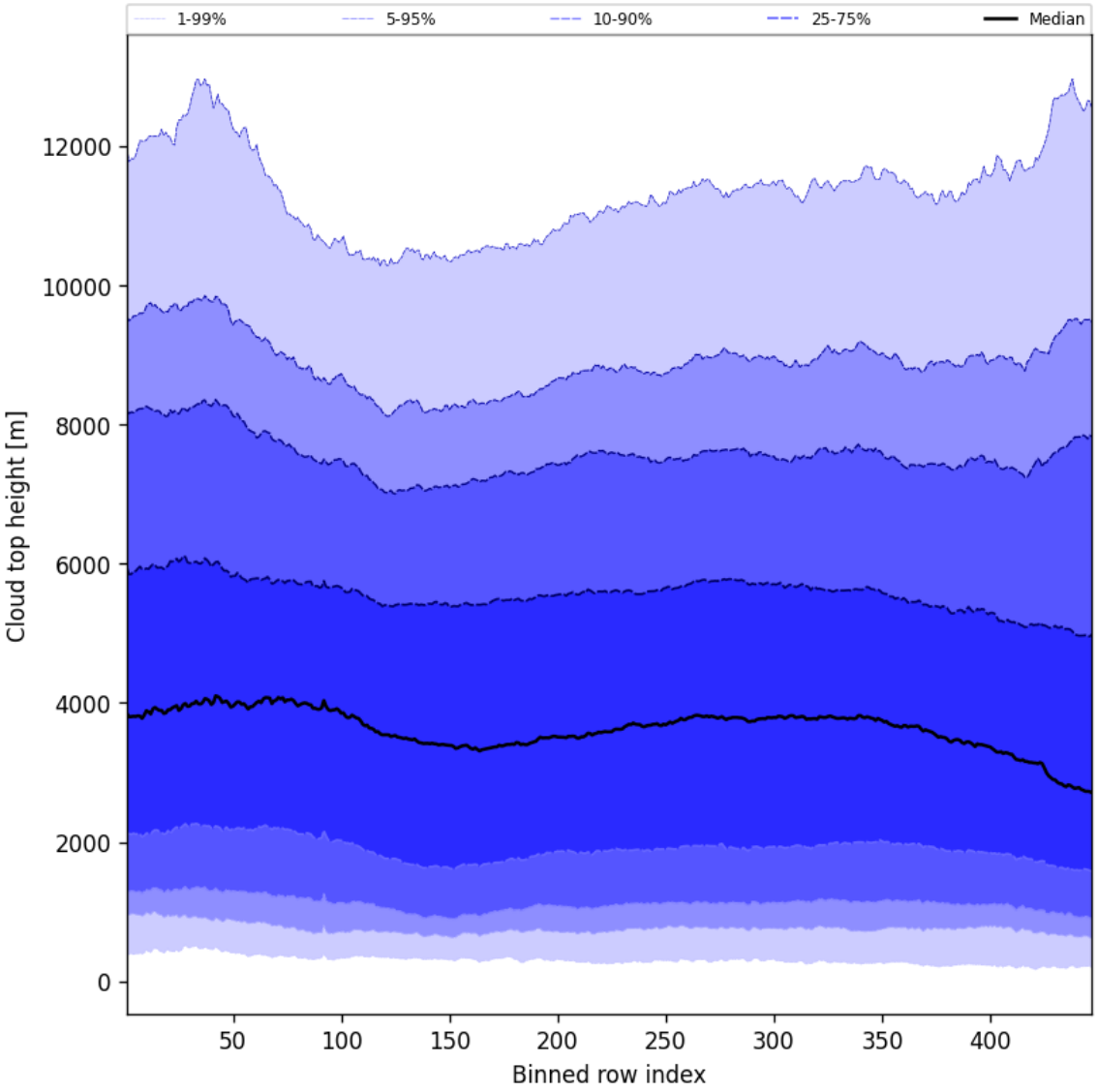

Figure 54: Along track statistics of “Cloud top height” for 2024-12-28 to 2024-12-29

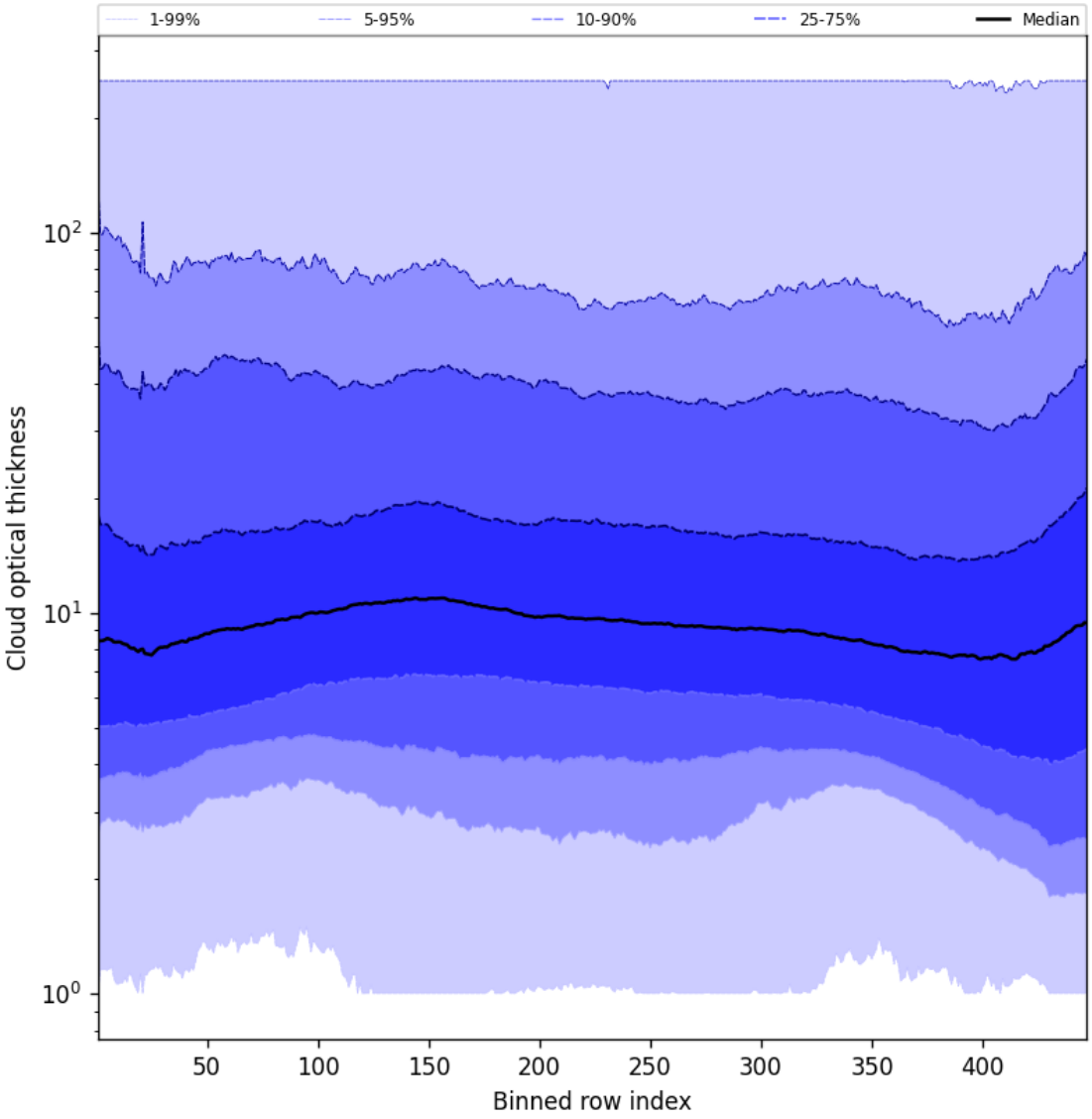

Figure 55: Along track statistics of “Cloud optical thickness” for 2024-12-28 to 2024-12-29

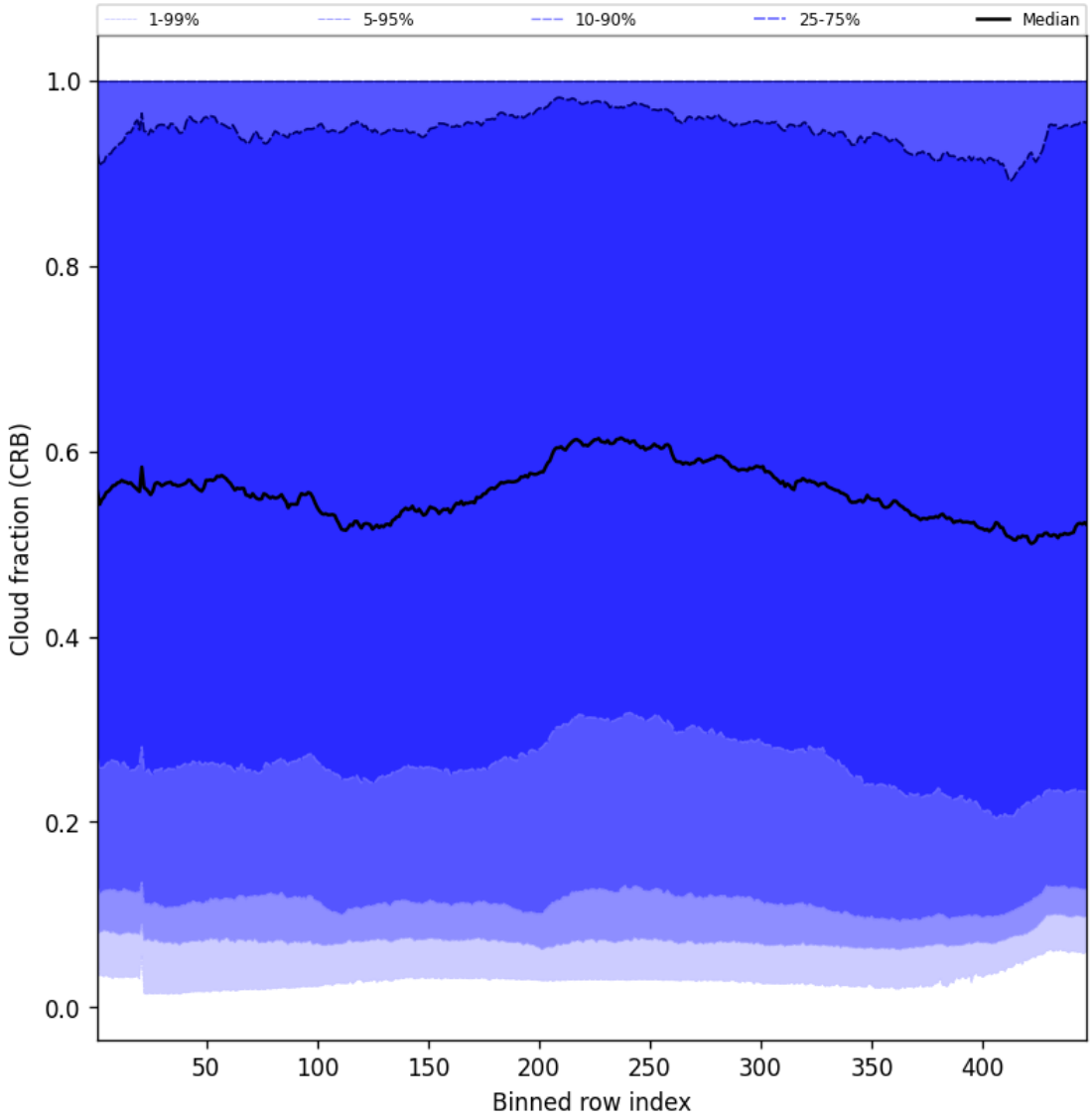

Figure 56: Along track statistics of “Cloud fraction (CRB)” for 2024-12-28 to 2024-12-29

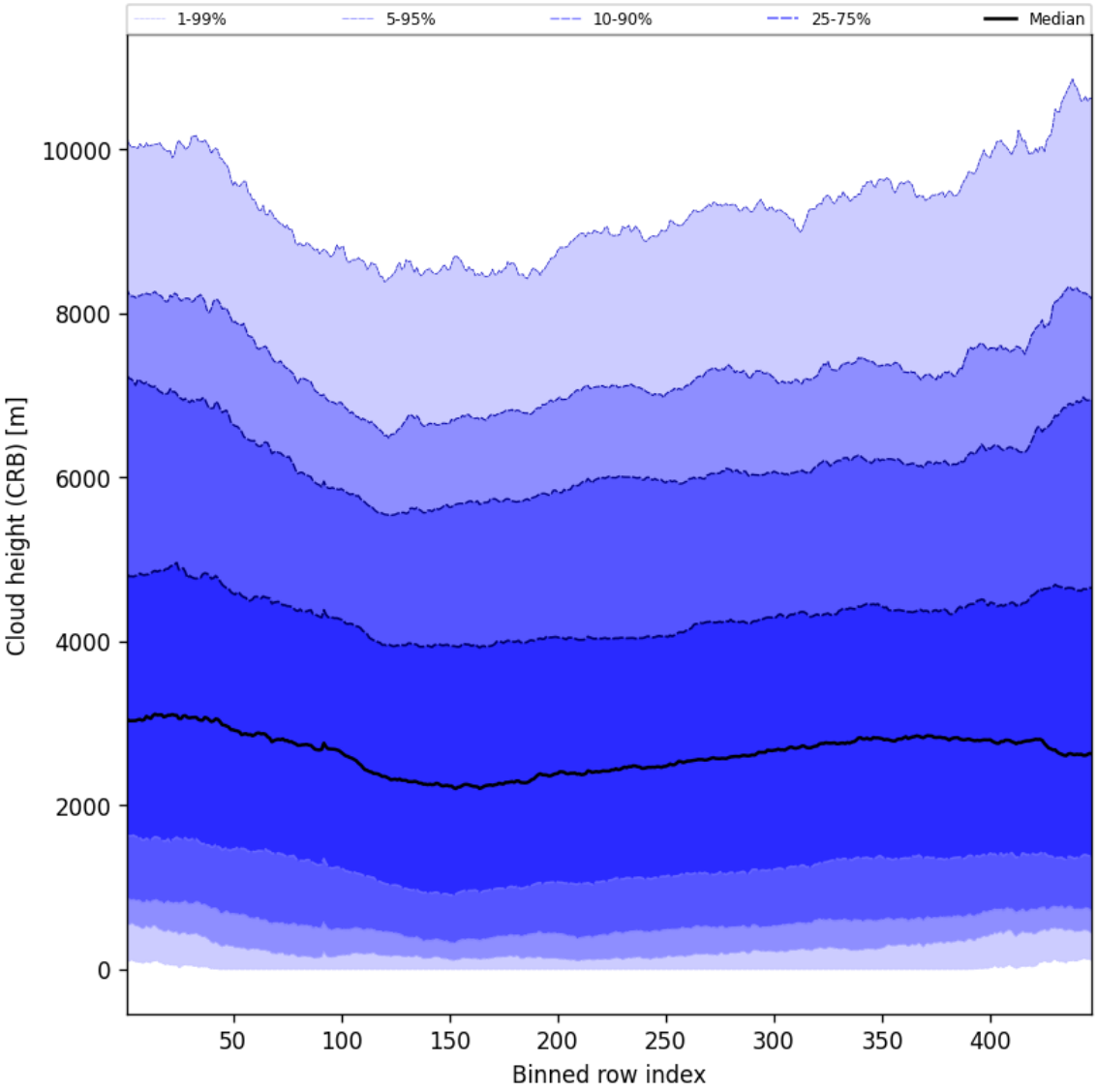

Figure 57: Along track statistics of “Cloud height (CRB)” for 2024-12-28 to 2024-12-29

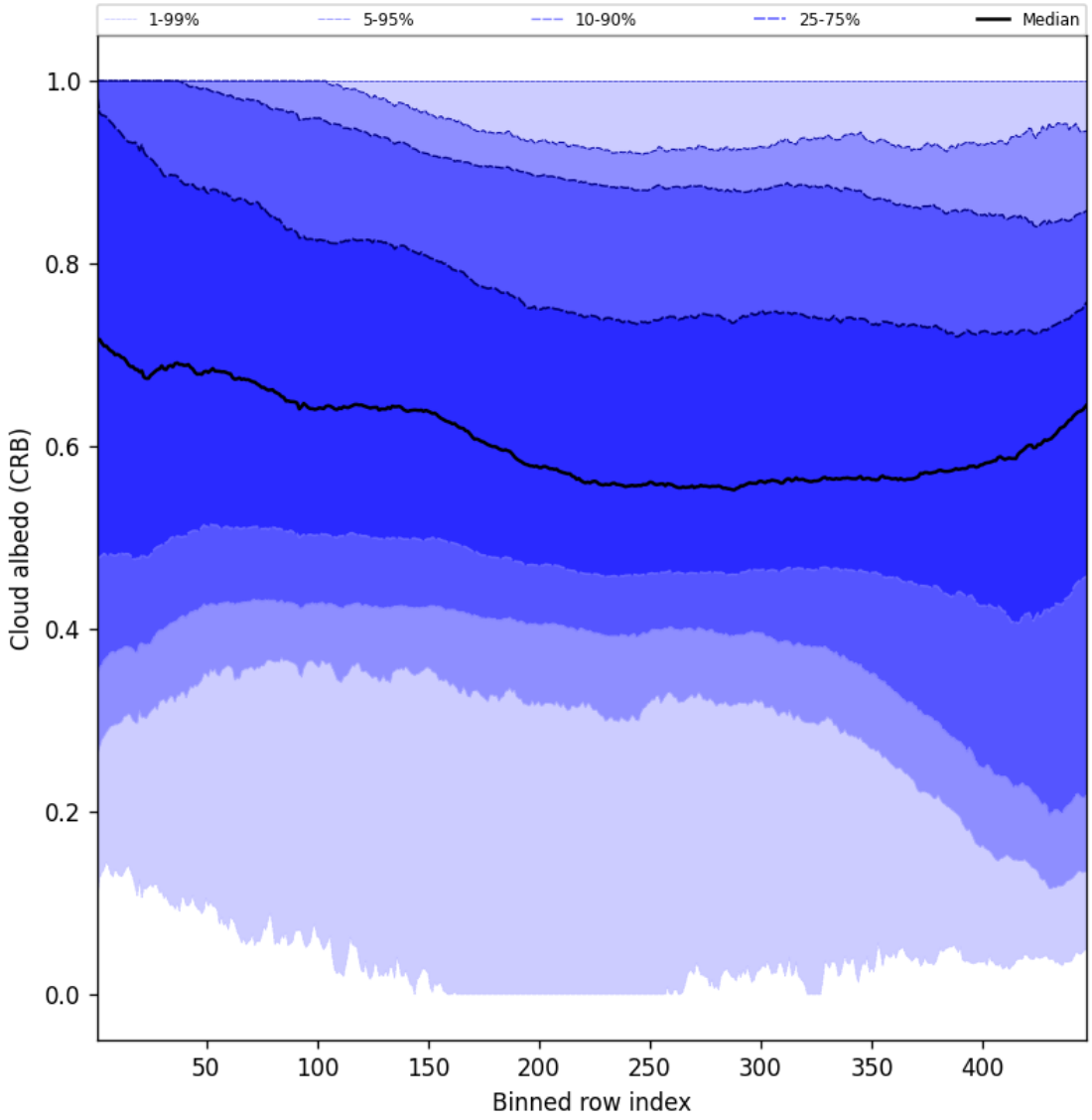

Figure 58: Along track statistics of “Cloud albedo (CRB)” for 2024-12-28 to 2024-12-29

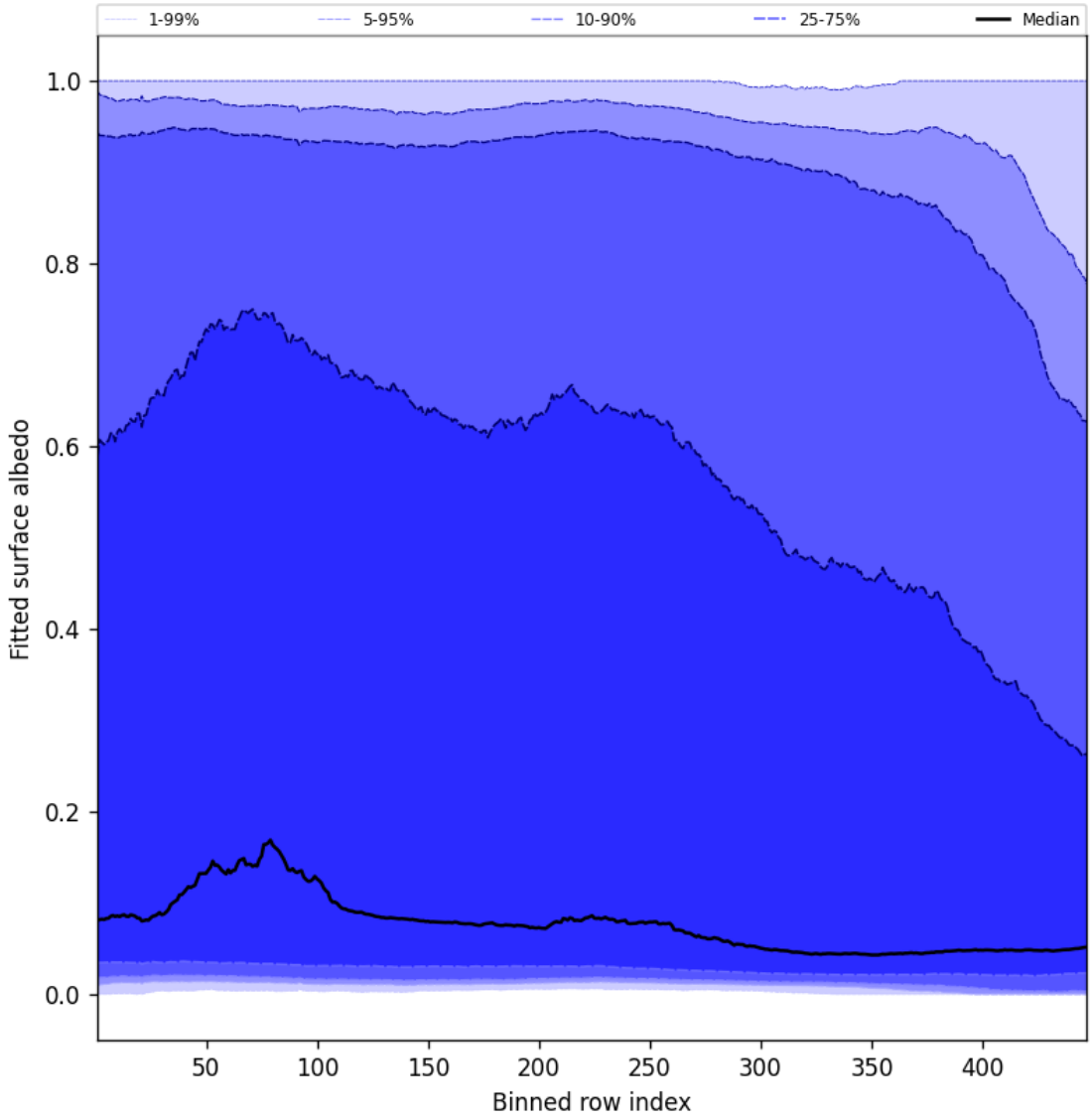

Figure 59: Along track statistics of “Fitted surface albedo” for 2024-12-28 to 2024-12-29

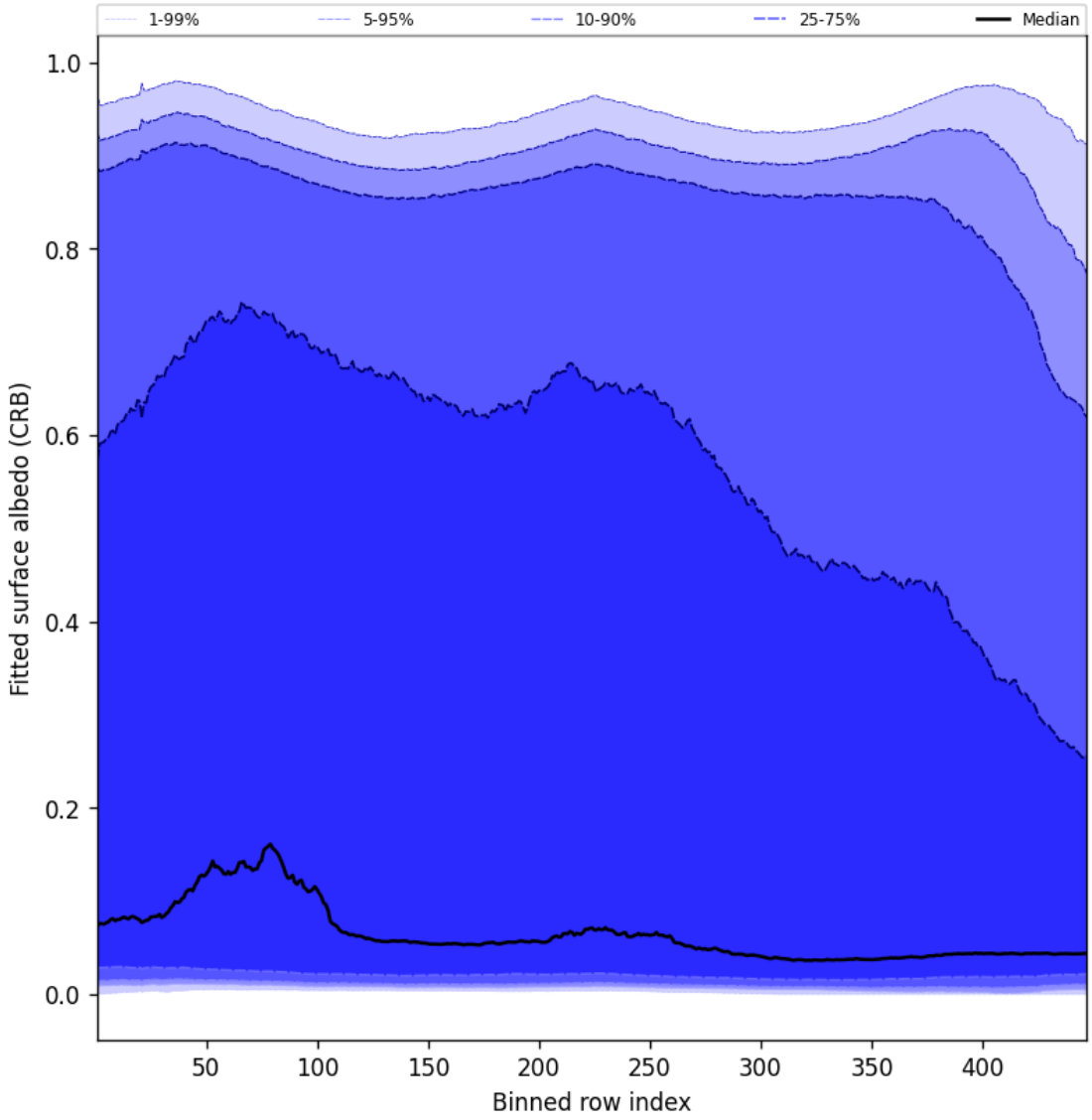

Figure 60: Along track statistics of “Fitted surface albedo (CRB)” for 2024-12-28 to 2024-12-29

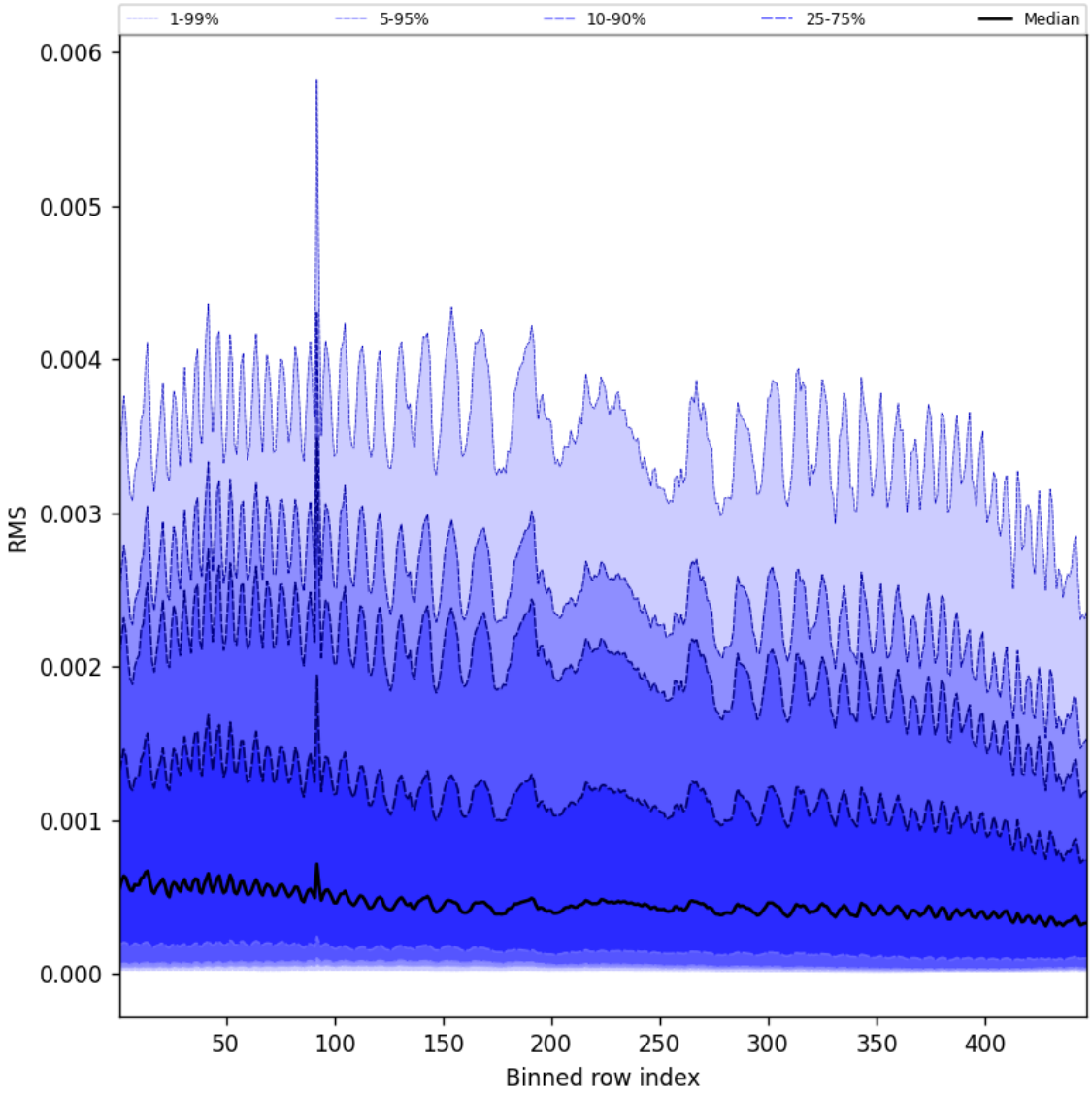

Figure 61: Along track statistics of “RMS” for 2024-12-28 to 2024-12-29

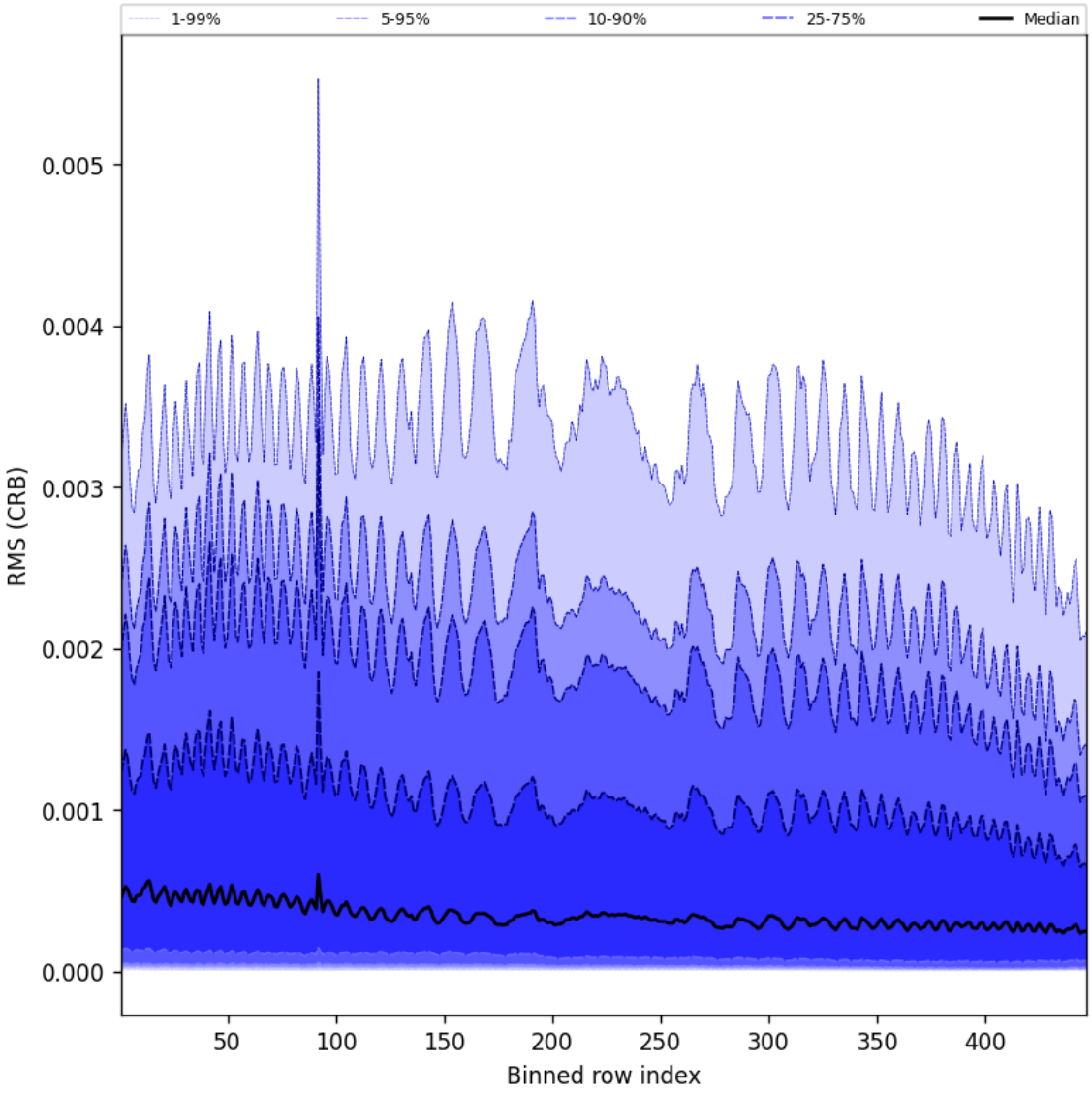

Figure 62: Along track statistics of “RMS (CRB)” for 2024-12-28 to 2024-12-29

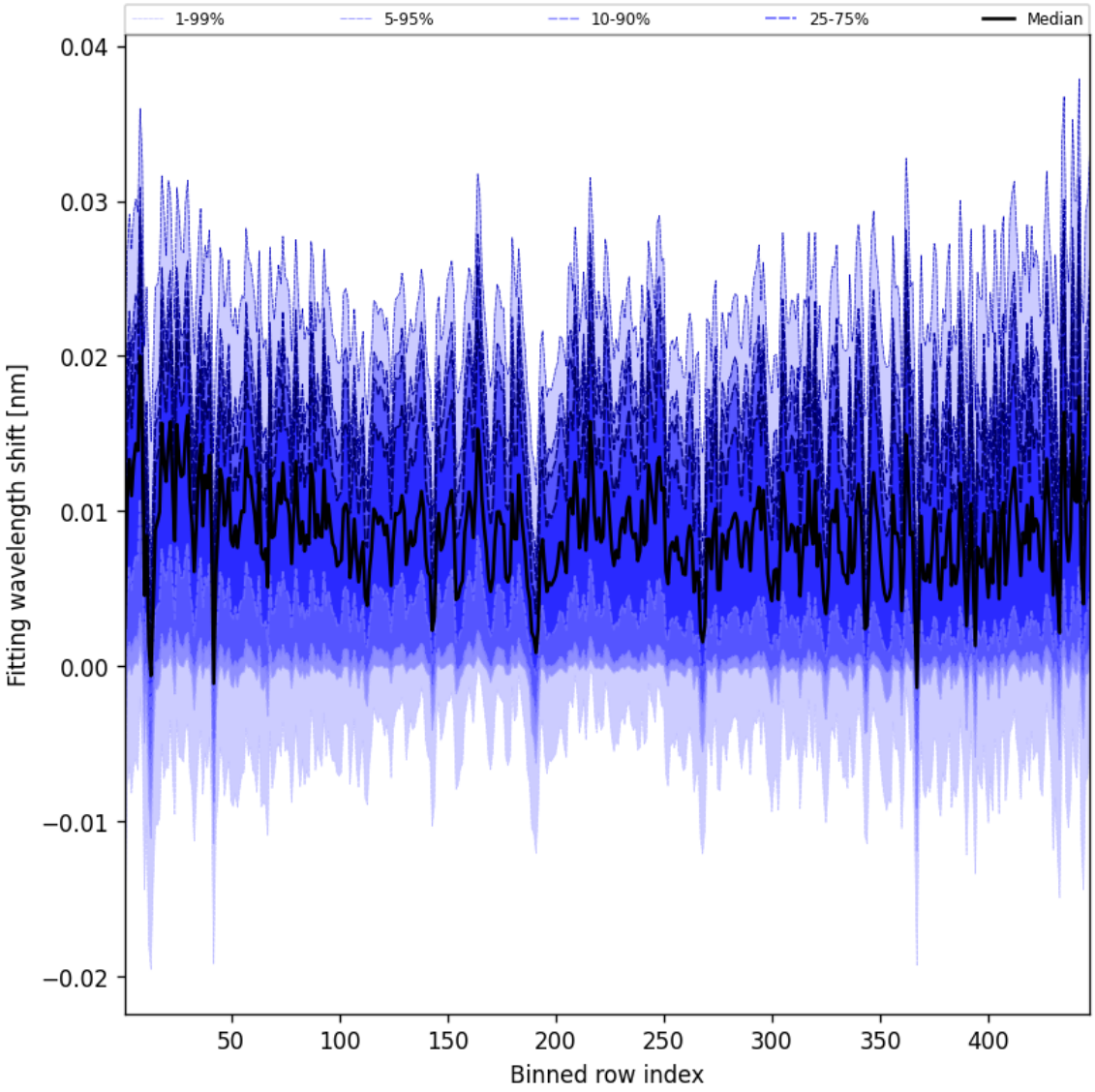

Figure 63: Along track statistics of “Fitting wavelength shift” for 2024-12-28 to 2024-12-29

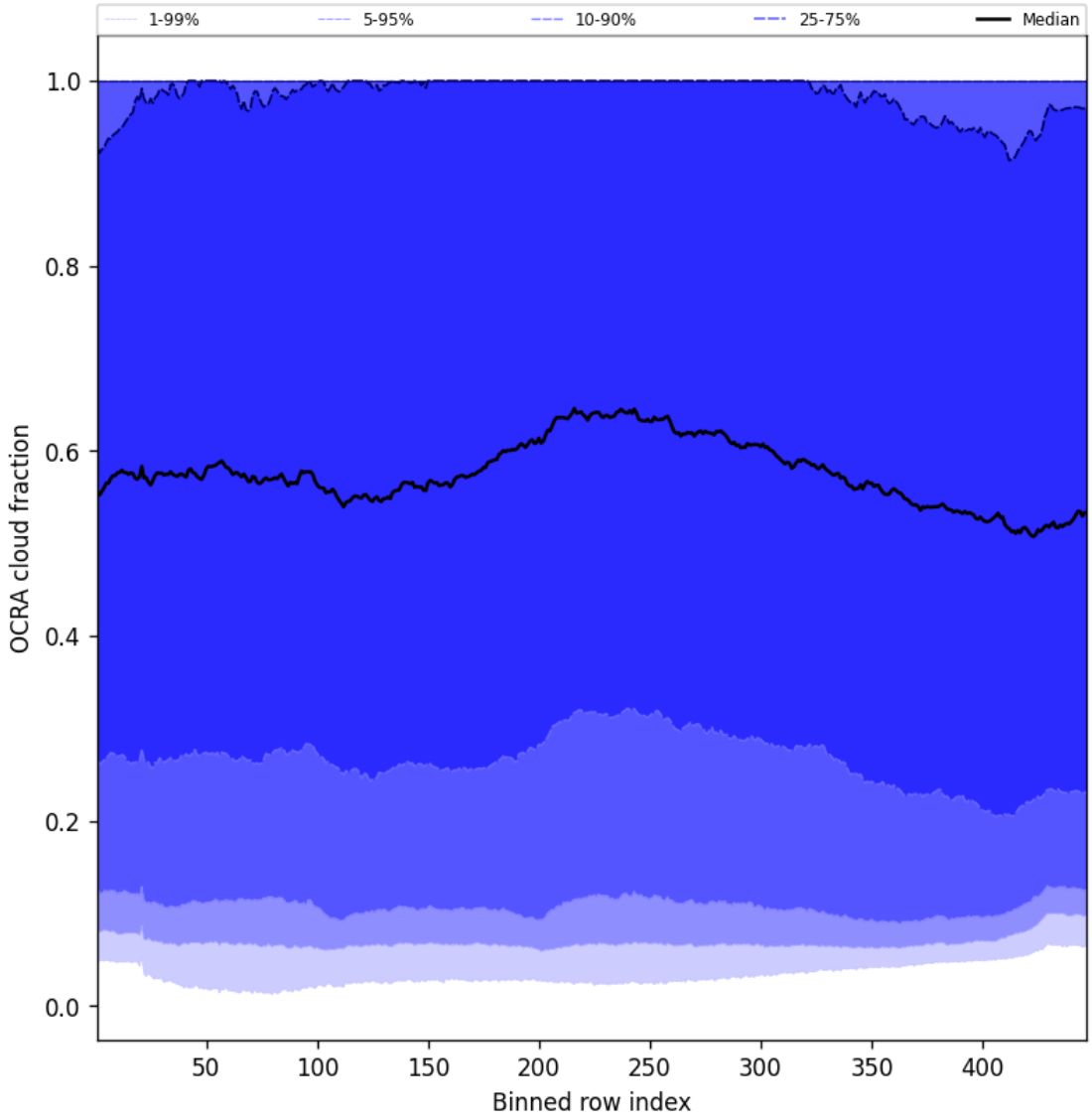

Figure 64: Along track statistics of “OCRA cloud fraction” for 2024-12-28 to 2024-12-29

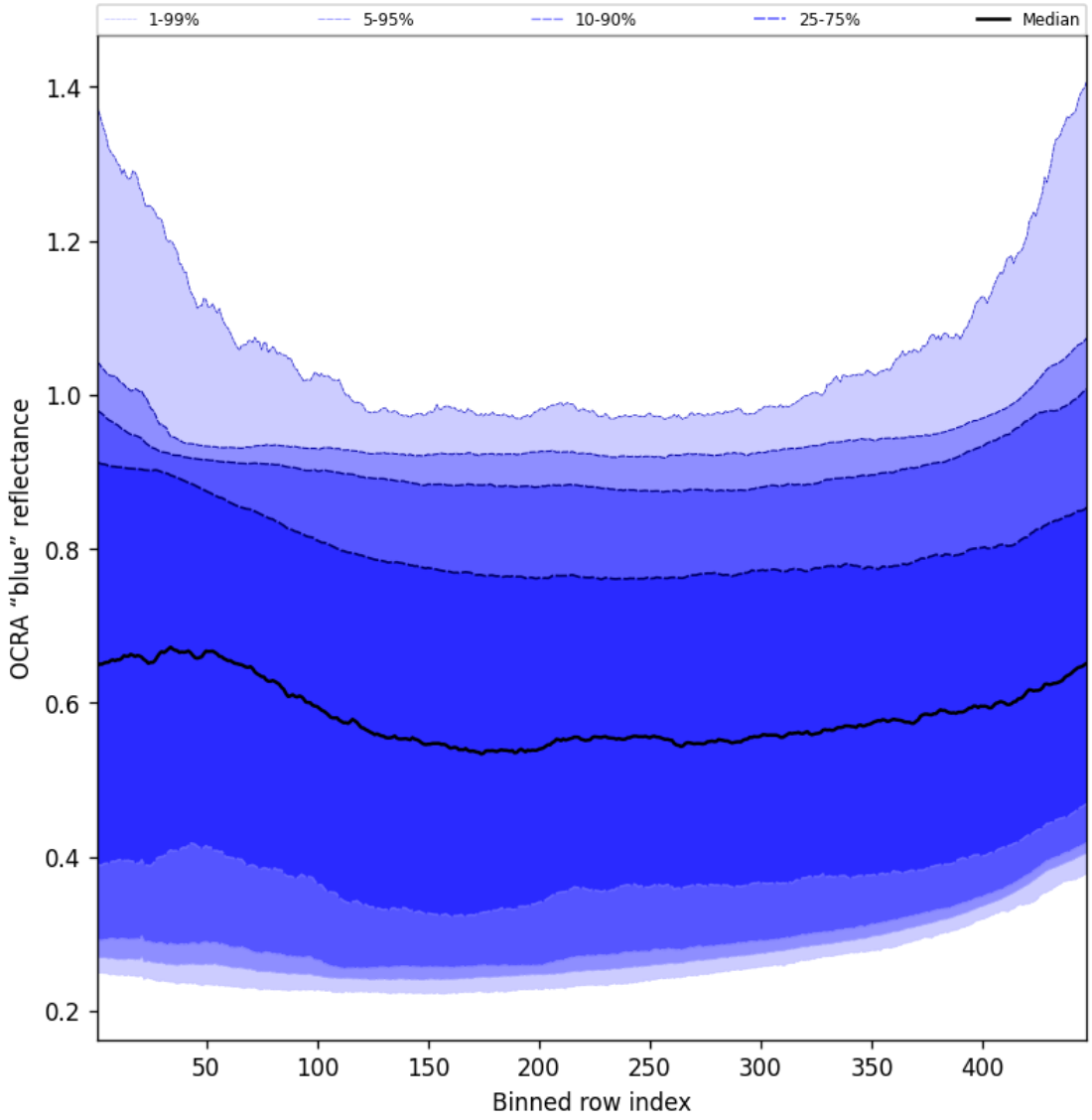

Figure 65: Along track statistics of “OCRA “blue” reflectance” for 2024-12-28 to 2024-12-29

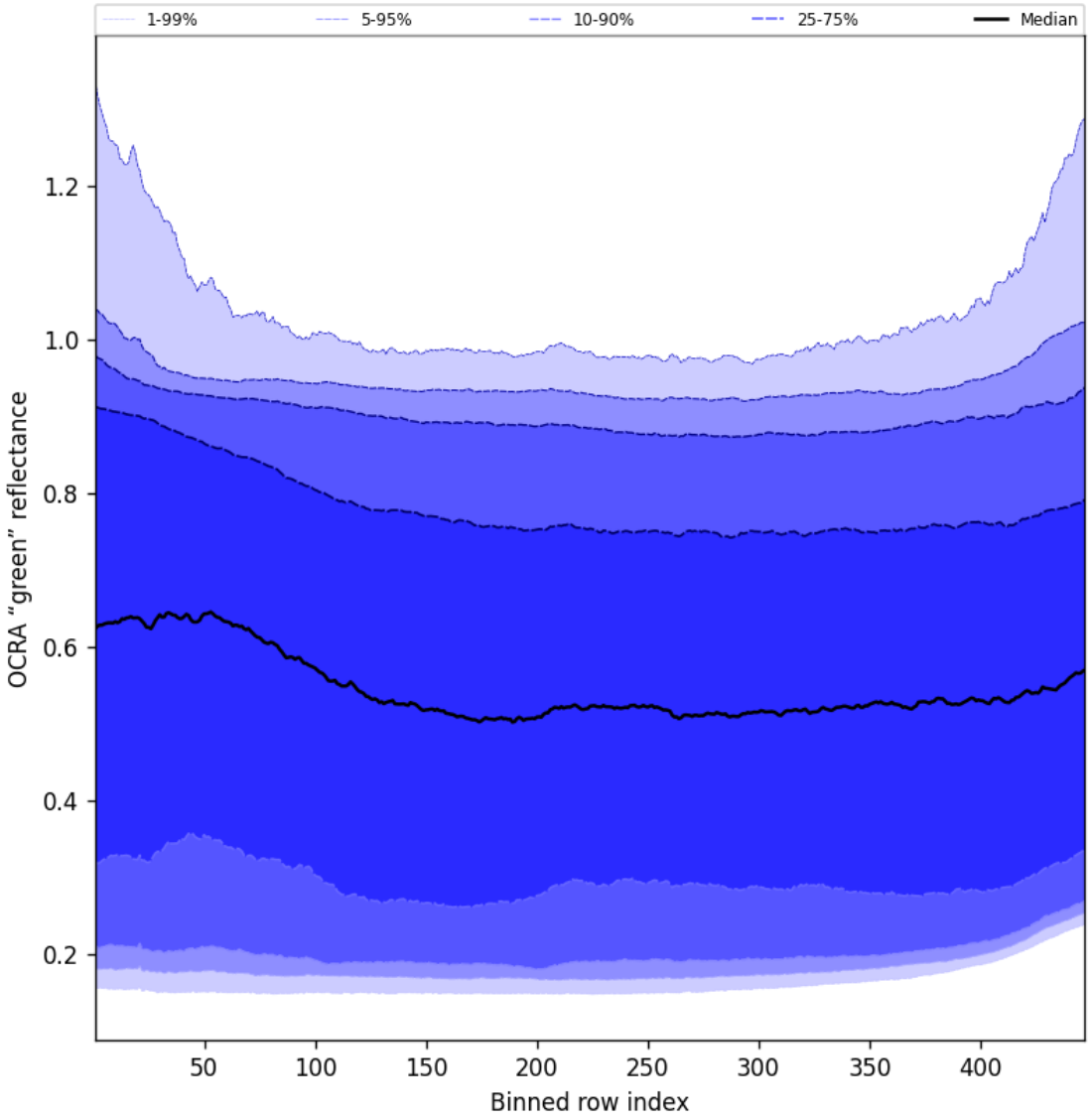

Figure 66: Along track statistics of "OCRA "green" reflectance" for 2024-12-28 to 2024-12-29

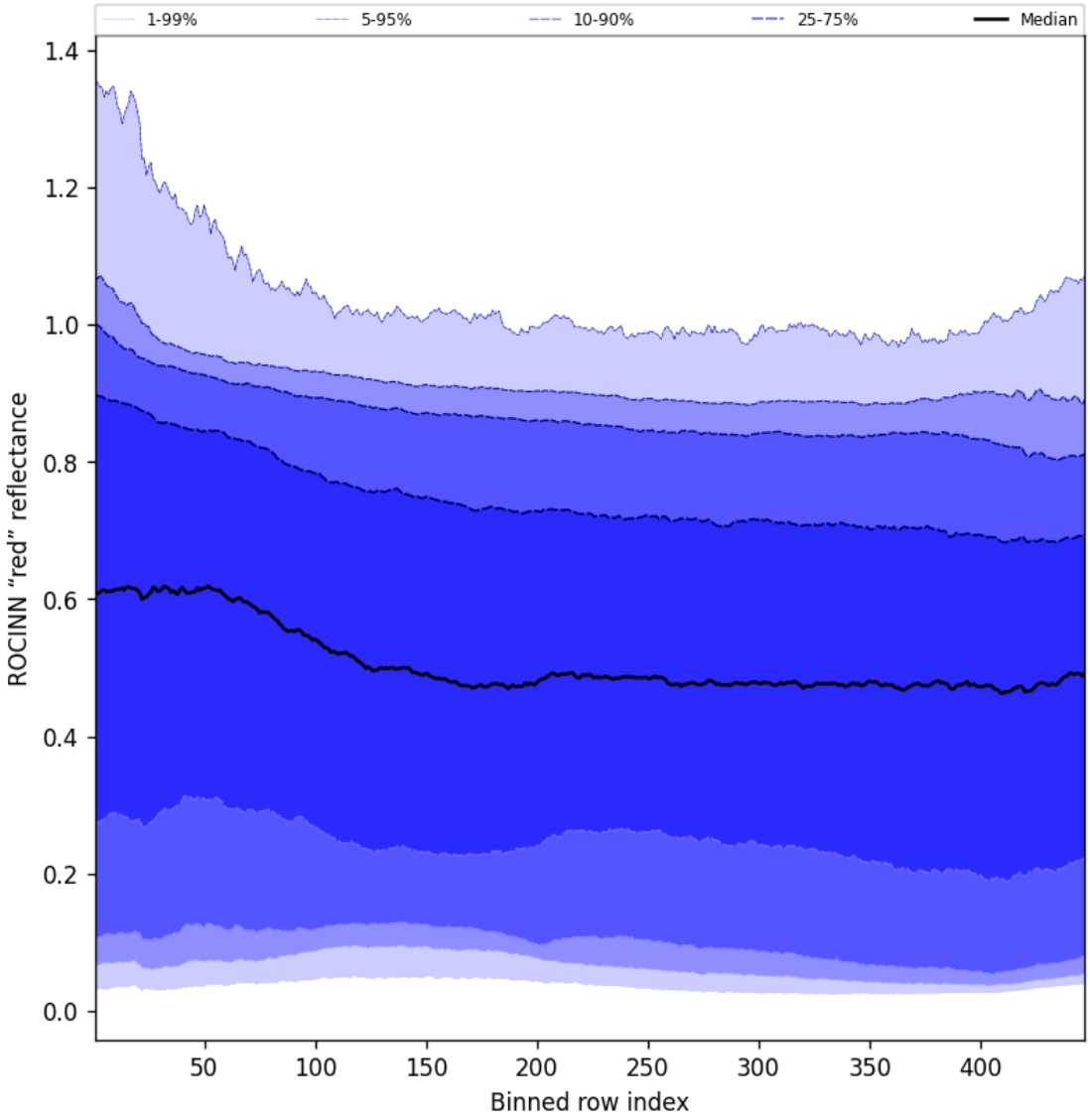

Figure 67: Along track statistics of “ROCINN “red” reflectance” for 2024-12-28 to 2024-12-29

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