

PyCAMA report generated by tropl2-proc

tropl2-proc

2024-12-23 (01:30)

1 Short Introduction

1.1 The list of parameters

You may want to keep the list given in table 1 at hand when viewing the results.

2 Definitions

The averages shown here are *unweighed* averages:

$$\bar{x} = \frac{1}{N} \sum_{i=1}^N x_i \quad (1)$$

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 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]	0.594 ± 0.370	20908917	5.000×10^{-3}	0.600	0.700	0.0	1.000
cloud fraction [1]	0.572 ± 0.337	20908917	0.995	0.693	0.558	7.988×10^{-4}	1.000
cloud top height [m]	$(0.390 \pm 0.263) \times 10^4$	20908917	1.725×10^3	3.658×10^3	3.372×10^3	0.0	2.000×10^4
cloud optical thickness [1]	18.7 ± 35.7	20908917	9.34	9.59	8.95	1.000	250
cloud fraction crb [1]	0.571 ± 0.337	20908917	0.995	0.693	0.557	8.301×10^{-3}	1.000
cloud height crb [m]	$(0.294 \pm 0.225) \times 10^4$	20908917	75.0	2.994×10^3	2.484×10^3	0.0	2.000×10^4
cloud albedo crb [1]	0.611 ± 0.223	20908917	0.995	0.312	0.592	0.0	1.000
surface albedo fitted [1]	0.294 ± 0.350	20908917	2.500×10^{-2}	0.537	6.356×10^{-2}	0.0	1.000
surface albedo fitted crb [1]	0.281 ± 0.337	20908917	1.500×10^{-2}	0.547	5.112×10^{-2}	0.0	1.000
fitted root mean square [1]	$(7.915 \pm 12.660) \times 10^{-4}$	20908917	5.000×10^{-5}	1.002×10^{-3}	4.549×10^{-4}	8.046×10^{-7}	0.593
fitted root mean square crb [1]	$(6.964 \pm 11.835) \times 10^{-4}$	20908917	5.000×10^{-5}	9.597×10^{-4}	3.519×10^{-4}	7.919×10^{-7}	0.733
wavelength shift [nm]	$(8.586 \pm 7.320) \times 10^{-3}$	20908917	3.000×10^{-4}	1.100×10^{-2}	8.065×10^{-3}	-4.834×10^{-2}	0.493
cloud fraction apriori [1]	0.582 ± 0.341	20908917	0.995	0.736	0.580	0.0	1.000
reflectance blue ocra [1]	0.592 ± 0.237	20908917	0.265	0.421	0.574	0.132	1.99
reflectance green ocra [1]	0.544 ± 0.266	20908917	0.185	0.488	0.532	7.701×10^{-2}	1.99
reflectance continuum aband [1]	0.494 ± 0.291	20908917	4.500×10^{-2}	0.496	0.490	1.309×10^{-2}	3.86

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]	2.868×10^{-2}	7.273×10^{-2}	0.113	0.165	0.261	0.954	1.000	1.000	1.000	1.000
cloud top height [m]	210	710	1.065×10^3	1.376×10^3	1.787×10^3	5.445×10^3	6.572×10^3	7.625×10^3	8.988×10^3	1.137×10^4
cloud optical thickness [1]	1.000	2.53	3.61	4.51	5.45	15.0	22.6	34.3	65.8	250
cloud fraction crb [1]	2.830×10^{-2}	7.213×10^{-2}	0.113	0.164	0.260	0.953	1.000	1.000	1.000	1.000
cloud height crb [m]	0.0	190	515	782	1.144×10^3	4.138×10^3	5.258×10^3	6.227×10^3	7.435×10^3	9.417×10^3
cloud albedo crb [1]	1.207×10^{-2}	0.235	0.355	0.419	0.466	0.779	0.867	0.930	0.994	1.000
surface albedo fitted [1]	0.0	9.155×10^{-3}	1.487×10^{-2}	1.998×10^{-2}	2.749×10^{-2}	0.564	0.829	0.922	0.967	1.000
surface albedo fitted crb [1]	1.577×10^{-4}	6.942×10^{-3}	1.115×10^{-2}	1.513×10^{-2}	2.120×10^{-2}	0.568	0.805	0.866	0.907	0.951
fitted root mean square [1]	1.549×10^{-5}	3.042×10^{-5}	5.162×10^{-5}	8.366×10^{-5}	1.464×10^{-4}	1.148×10^{-3}	1.601×10^{-3}	2.013×10^{-3}	2.532×10^{-3}	3.619×10^{-3}
fitted root mean square crb [1]	8.097×10^{-6}	1.932×10^{-5}	3.255×10^{-5}	5.145×10^{-5}	9.229×10^{-5}	1.052×10^{-3}	1.492×10^{-3}	1.885×10^{-3}	2.381×10^{-3}	3.362×10^{-3}
wavelength shift [nm]	-7.330×10^{-3}	-6.421×10^{-4}	1.958×10^{-4}	1.090×10^{-3}	2.765×10^{-3}	1.377×10^{-2}	1.618×10^{-2}	1.818×10^{-2}	2.077×10^{-2}	2.640×10^{-2}
cloud fraction apriori [1]	3.443×10^{-2}	6.947×10^{-2}	0.108	0.161	0.264	1.000	1.000	1.000	1.000	1.000
reflectance blue ocra [1]	0.234	0.261	0.288	0.322	0.379	0.800	0.873	0.910	0.946	1.08
reflectance green ocra [1]	0.153	0.176	0.199	0.230	0.292	0.780	0.863	0.908	0.944	1.05
reflectance continuum aband [1]	3.198×10^{-2}	6.024×10^{-2}	9.863×10^{-2}	0.149	0.242	0.738	0.828	0.879	0.927	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]	0.541 ± 0.405	7752334	0.930	0.650	0.0	1.000	1.000×10^{-2}	0.940
cloud fraction [1]	0.523 ± 0.338	7752334	0.670	0.481	4.434×10^{-3}	1.000	0.205	0.875
cloud top height [m]	$(0.434 \pm 0.270) \times 10^4$	7752334	4.018×10^3	3.820×10^3	0.0	2.000×10^4	2.123×10^3	6.141×10^3
cloud optical thickness [1]	28.0 ± 48.9	7752334	16.7	10.2	1.000	250	6.00	22.7
cloud fraction crb [1]	0.522 ± 0.338	7752334	0.668	0.478	8.387×10^{-3}	1.000	0.204	0.872
cloud height crb [m]	$(0.361 \pm 0.231) \times 10^4$	7752334	3.530×10^3	3.211×10^3	0.0	2.000×10^4	1.675×10^3	5.205×10^3
cloud albedo crb [1]	0.593 ± 0.216	7752334	0.271	0.581	0.0	1.000	0.463	0.733
surface albedo fitted [1]	0.175 ± 0.200	7752334	0.249	6.266×10^{-2}	0.0	1.000	3.150×10^{-2}	0.280
surface albedo fitted crb [1]	0.166 ± 0.198	7752334	0.253	4.967×10^{-2}	0.0	1.000	2.323×10^{-2}	0.276
fitted root mean square [1]	$(3.962 \pm 5.685) \times 10^{-4}$	7752334	4.000×10^{-4}	2.190×10^{-4}	8.046×10^{-7}	0.161	8.705×10^{-5}	4.871×10^{-4}
fitted root mean square crb [1]	$(3.129 \pm 4.745) \times 10^{-4}$	7752334	3.230×10^{-4}	1.275×10^{-4}	9.384×10^{-7}	1.811×10^{-2}	4.619×10^{-5}	3.692×10^{-4}
wavelength shift [nm]	$(5.920 \pm 6.452) \times 10^{-3}$	7752334	8.533×10^{-3}	4.625×10^{-3}	-4.834×10^{-2}	6.271×10^{-2}	1.155×10^{-3}	9.688×10^{-3}
cloud fraction apriori [1]	0.527 ± 0.344	7752334	0.697	0.485	0.0	1.000	0.199	0.896
reflectance blue ocra [1]	0.544 ± 0.214	7752334	0.320	0.517	0.135	1.99	0.368	0.688
reflectance green ocra [1]	0.484 ± 0.236	7752334	0.379	0.458	7.701×10^{-2}	1.99	0.275	0.655
reflectance continuum aband [1]	0.430 ± 0.271	7752334	0.403	0.400	1.311×10^{-2}	3.73	0.213	0.615

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 ± 0.344	13156583	0.500	0.700	0.0	1.000	0.400	0.900
cloud fraction [1]	0.600 ± 0.332	13156583	0.684	0.602	7.988×10^{-4}	1.000	0.301	0.985
cloud top height [m]	$(0.364 \pm 0.255) \times 10^4$	13156583	3.452×10^3	3.104×10^3	0.0	2.000×10^4	1.629×10^3	5.082×10^3
cloud optical thickness [1]	13.3 ± 23.3	13156583	7.47	8.51	1.000	250	5.21	12.7
cloud fraction crb [1]	0.601 ± 0.332	13156583	0.684	0.603	8.301×10^{-3}	1.000	0.301	0.985
cloud height crb [m]	$(0.254 \pm 0.212) \times 10^4$	13156583	2.672×10^3	2.081×10^3	0.0	2.000×10^4	906	3.578×10^3
cloud albedo crb [1]	0.622 ± 0.226	13156583	0.338	0.601	0.0	1.000	0.468	0.805
surface albedo fitted [1]	0.364 ± 0.397	13156583	0.799	6.466×10^{-2}	0.0	1.000	2.532×10^{-2}	0.824
surface albedo fitted crb [1]	0.349 ± 0.381	13156583	0.781	5.265×10^{-2}	0.0	1.000	1.995×10^{-2}	0.801
fitted root mean square [1]	$(1.024 \pm 1.487) \times 10^{-3}$	13156583	1.275×10^{-3}	7.511×10^{-4}	1.128×10^{-6}	0.593	2.481×10^{-4}	1.523×10^{-3}
fitted root mean square crb [1]	$(9.223 \pm 13.984) \times 10^{-4}$	13156583	1.234×10^{-3}	6.602×10^{-4}	7.919×10^{-7}	0.733	1.828×10^{-4}	1.417×10^{-3}
wavelength shift [nm]	$(1.016 \pm 0.735) \times 10^{-2}$	13156583	1.056×10^{-2}	1.037×10^{-2}	-4.555×10^{-2}	0.493	4.732×10^{-3}	1.530×10^{-2}
cloud fraction apriori [1]	0.615 ± 0.335	13156583	0.686	0.633	0.0	1.000	0.314	1.000
reflectance blue oca [1]	0.621 ± 0.245	13156583	0.461	0.630	0.132	1.94	0.389	0.850
reflectance green oca [1]	0.579 ± 0.275	13156583	0.532	0.600	8.395×10^{-2}	1.94	0.307	0.840
reflectance continuum aband [1]	0.531 ± 0.295	13156583	0.524	0.560	1.309×10^{-2}	3.86	0.270	0.794

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]	0.681 ± 0.346	13118149	0.550	0.850	0.0	1.000	0.400	0.950
cloud fraction [1]	0.602 ± 0.354	13118149	0.752	0.636	7.988×10^{-4}	1.000	0.248	1.000
cloud top height [m]	$(0.340 \pm 0.250) \times 10^4$	13118149	3.107×10^3	2.614×10^3	0.0	2.000×10^4	1.548×10^3	4.654×10^3
cloud optical thickness [1]	17.5 ± 29.1	13118149	9.01	9.85	1.000	250	6.74	15.8
cloud fraction crb [1]	0.601 ± 0.354	13118149	0.754	0.634	8.409×10^{-3}	1.000	0.246	1.000
cloud height crb [m]	$(0.266 \pm 0.225) \times 10^4$	13118149	2.844×10^3	1.962×10^3	0.0	2.000×10^4	945	3.789×10^3
cloud albedo crb [1]	0.554 ± 0.177	13118149	0.217	0.535	0.0	1.000	0.451	0.668
surface albedo fitted [1]	0.112 ± 0.210	13118149	3.624×10^{-2}	3.343×10^{-2}	0.0	1.000	1.994×10^{-2}	5.618×10^{-2}
surface albedo fitted crb [1]	0.108 ± 0.215	13118149	2.980×10^{-2}	2.610×10^{-2}	0.0	1.000	1.509×10^{-2}	4.489×10^{-2}
fitted root mean square [1]	$(7.152 \pm 14.323) \times 10^{-4}$	13118149	9.535×10^{-4}	3.246×10^{-4}	8.046×10^{-7}	0.593	9.851×10^{-5}	1.052×10^{-3}
fitted root mean square crb [1]	$(6.663 \pm 13.605) \times 10^{-4}$	13118149	9.385×10^{-4}	2.851×10^{-4}	7.919×10^{-7}	0.733	7.428×10^{-5}	1.013×10^{-3}
wavelength shift [nm]	$(7.993 \pm 7.566) \times 10^{-3}$	13118149	1.093×10^{-2}	7.135×10^{-3}	-4.834×10^{-2}	0.493	2.230×10^{-3}	1.316×10^{-2}
cloud fraction apriori [1]	0.605 ± 0.360	13118149	0.761	0.645	0.0	1.000	0.239	1.000
reflectance blue oca [1]	0.516 ± 0.201	13118149	0.315	0.482	0.155	1.94	0.346	0.660
reflectance green oca [1]	0.456 ± 0.227	13118149	0.380	0.422	8.813×10^{-2}	1.94	0.251	0.632
reflectance continuum aband [1]	0.391 ± 0.263	13118149	0.449	0.365	1.309×10^{-2}	3.86	0.150	0.599

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]	0.466 ± 0.354	6394046	0.700	0.570	0.0	1.000	0.0	0.700
cloud fraction [1]	0.512 ± 0.292	6394046	0.470	0.478	4.434×10^{-3}	1.000	0.273	0.743
cloud top height [m]	$(0.473 \pm 0.257) \times 10^4$	6394046	3.141×10^3	4.543×10^3	0.0	2.000×10^4	2.941×10^3	6.082×10^3
cloud optical thickness [1]	17.1 ± 38.8	6394046	6.82	6.09	1.000	250	4.46	11.3
cloud fraction crb [1]	0.513 ± 0.292	6394046	0.471	0.479	8.311×10^{-3}	1.000	0.274	0.745
cloud height crb [m]	$(0.331 \pm 0.212) \times 10^4$	6394046	2.558×10^3	3.080×10^3	0.0	2.000×10^4	1.804×10^3	4.362×10^3
cloud albedo crb [1]	0.720 ± 0.256	6394046	0.358	0.792	0.0	1.000	0.567	0.925
surface albedo fitted [1]	0.655 ± 0.319	6394046	0.641	0.820	0.0	1.000	0.302	0.943
surface albedo fitted crb [1]	0.625 ± 0.296	6394046	0.584	0.791	0.0	1.000	0.300	0.884
fitted root mean square [1]	$(1.005 \pm 0.915) \times 10^{-3}$	6394046	1.079×10^{-3}	7.269×10^{-4}	2.649×10^{-6}	0.161	3.492×10^{-4}	1.428×10^{-3}
fitted root mean square crb [1]	$(8.323 \pm 8.078) \times 10^{-4}$	6394046	1.039×10^{-3}	5.665×10^{-4}	2.058×10^{-6}	6.630×10^{-2}	2.041×10^{-4}	1.243×10^{-3}
wavelength shift [nm]	$(1.042 \pm 0.662) \times 10^{-2}$	6394046	9.928×10^{-3}	1.062×10^{-2}	-3.668×10^{-2}	6.740×10^{-2}	5.293×10^{-3}	1.522×10^{-2}
cloud fraction apriori [1]	0.539 ± 0.297	6394046	0.488	0.517	0.0	1.000	0.296	0.784
reflectance blue ocrs [1]	0.735 ± 0.234	6394046	0.339	0.829	0.132	1.89	0.569	0.908
reflectance green ocrs [1]	0.710 ± 0.260	6394046	0.386	0.817	7.701×10^{-2}	1.89	0.523	0.909
reflectance continuum aband [1]	0.689 ± 0.245	6394046	0.388	0.769	1.767×10^{-2}	3.36	0.492	0.879

3 Granule outlines

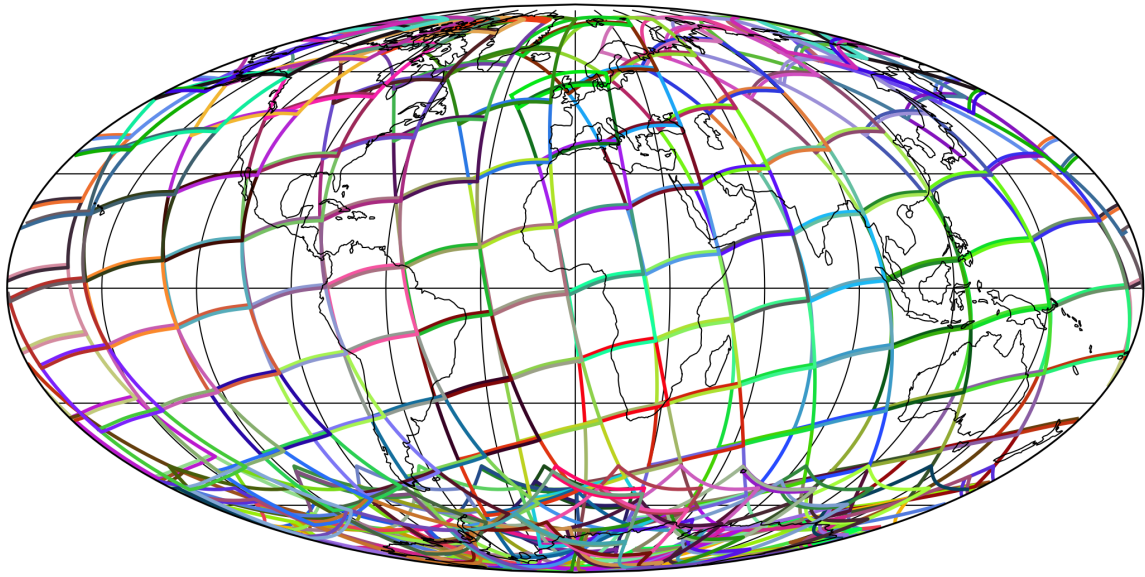


Figure 1: Outline of the granules.

4 Input data monitoring

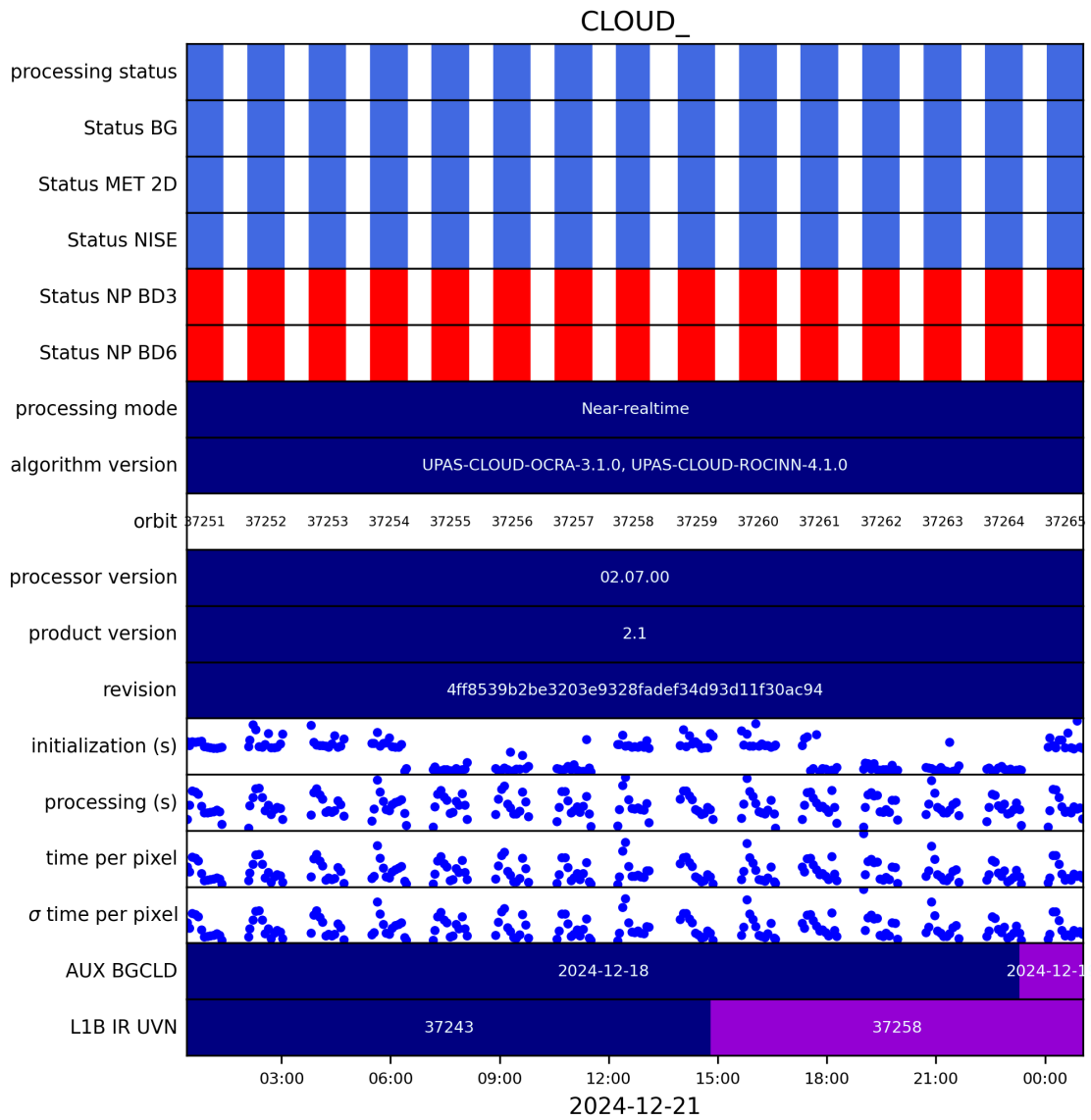


Figure 2: Input data per granule

5 Warnings and errors

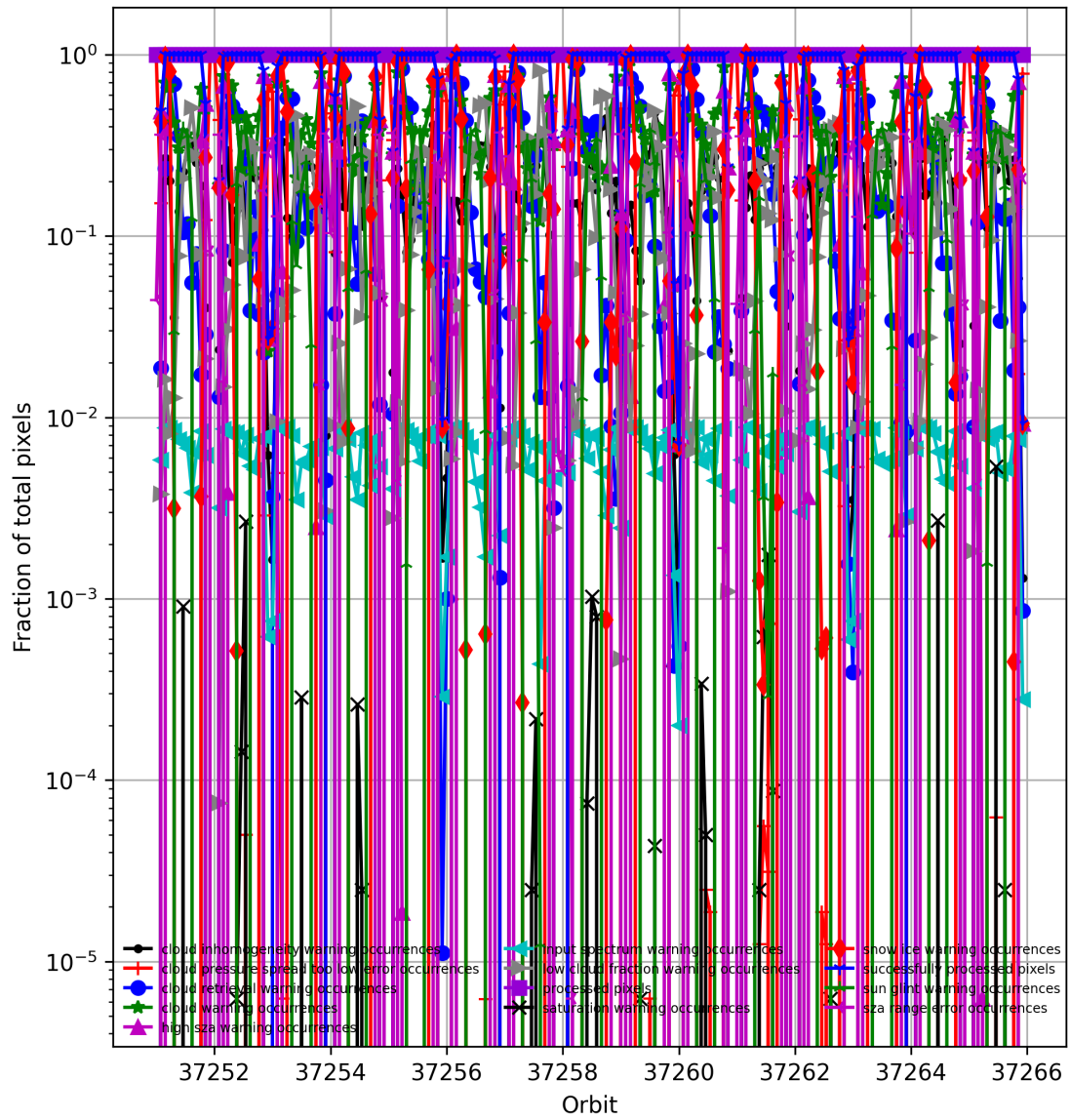


Figure 3: Fraction of pixels with specific warnings and errors during processing

6 World maps

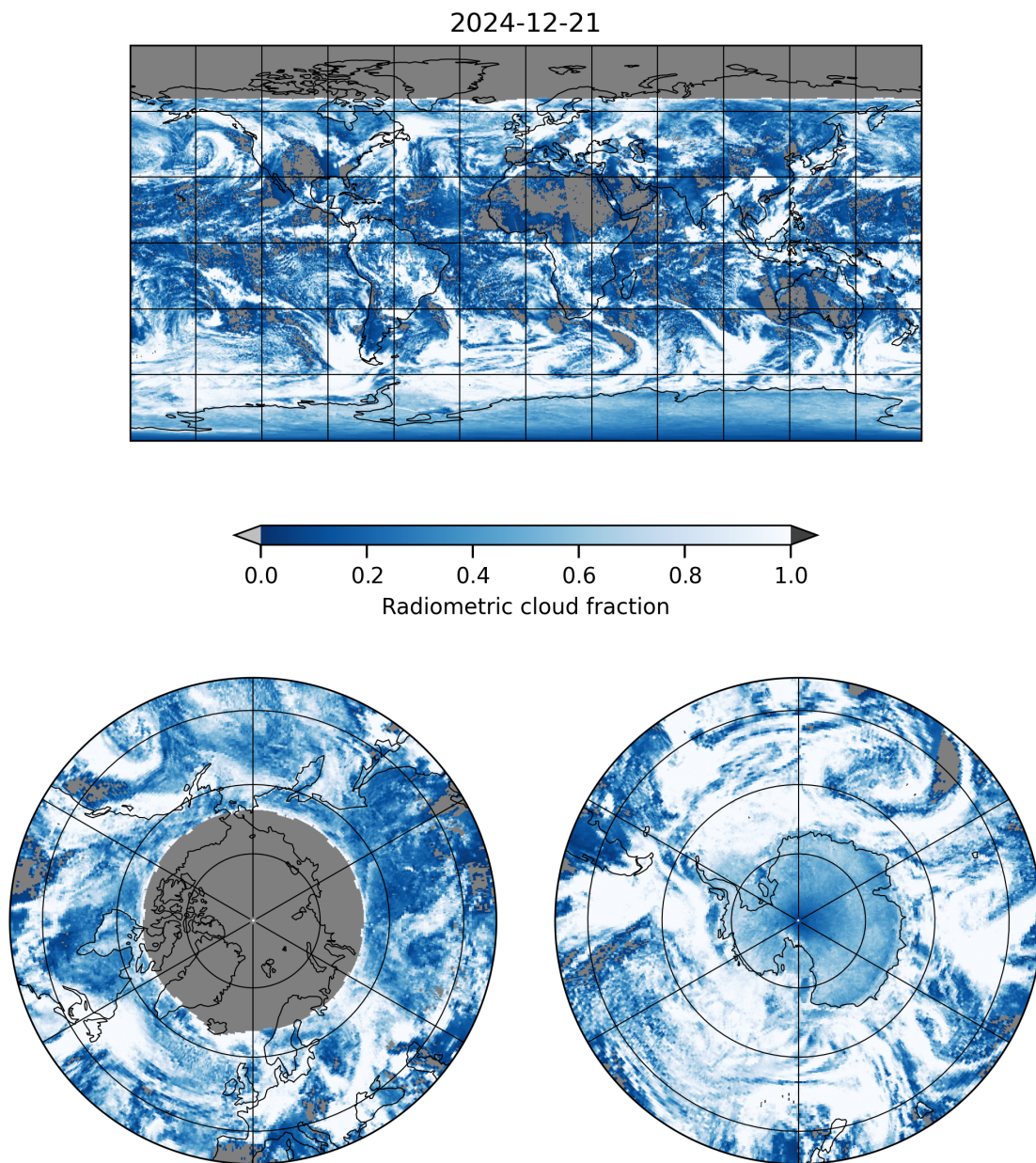


Figure 4: Map of “Radiometric cloud fraction” for 2024-12-21 to 2024-12-22

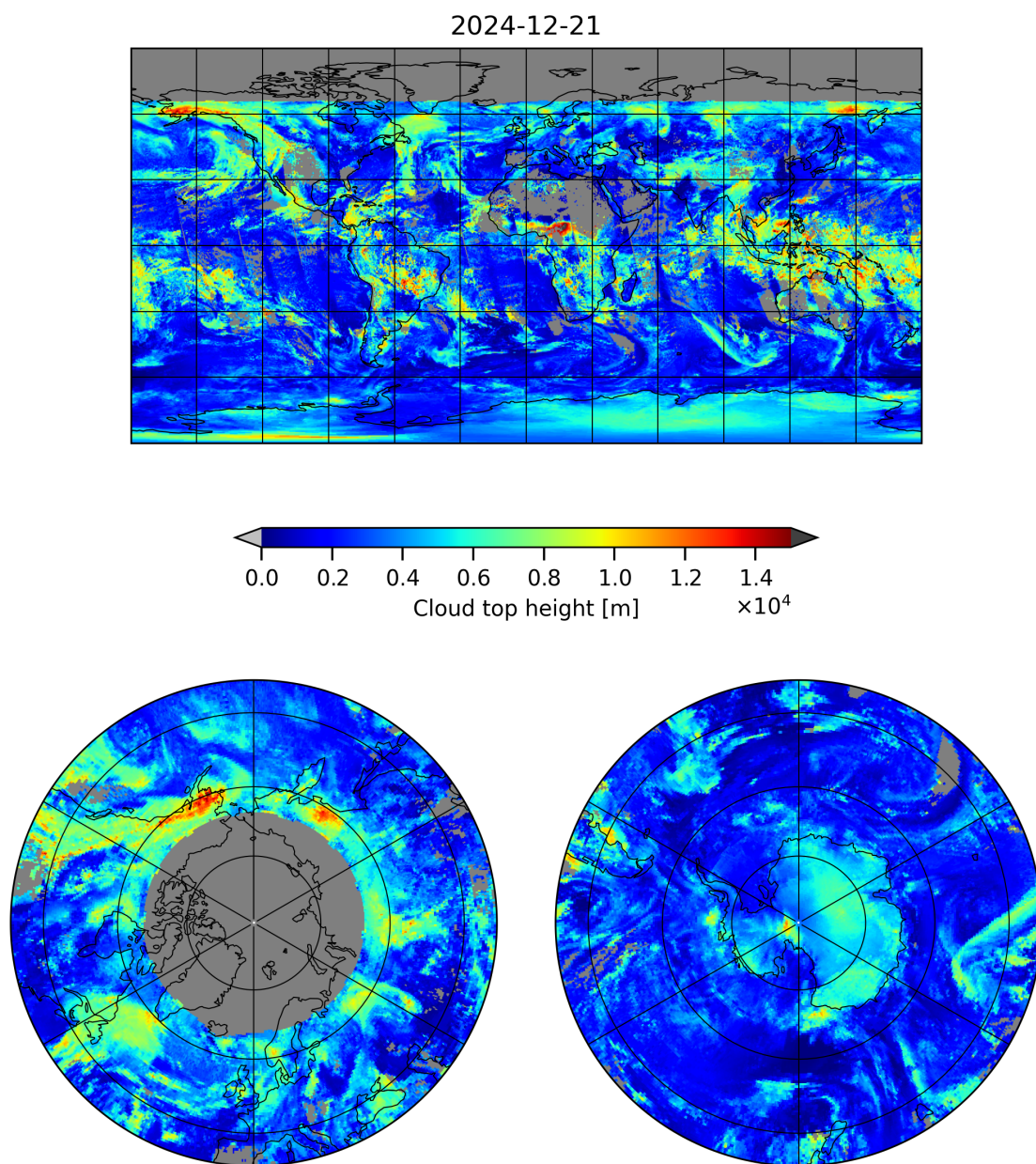


Figure 5: Map of “Cloud top height” for 2024-12-21 to 2024-12-22

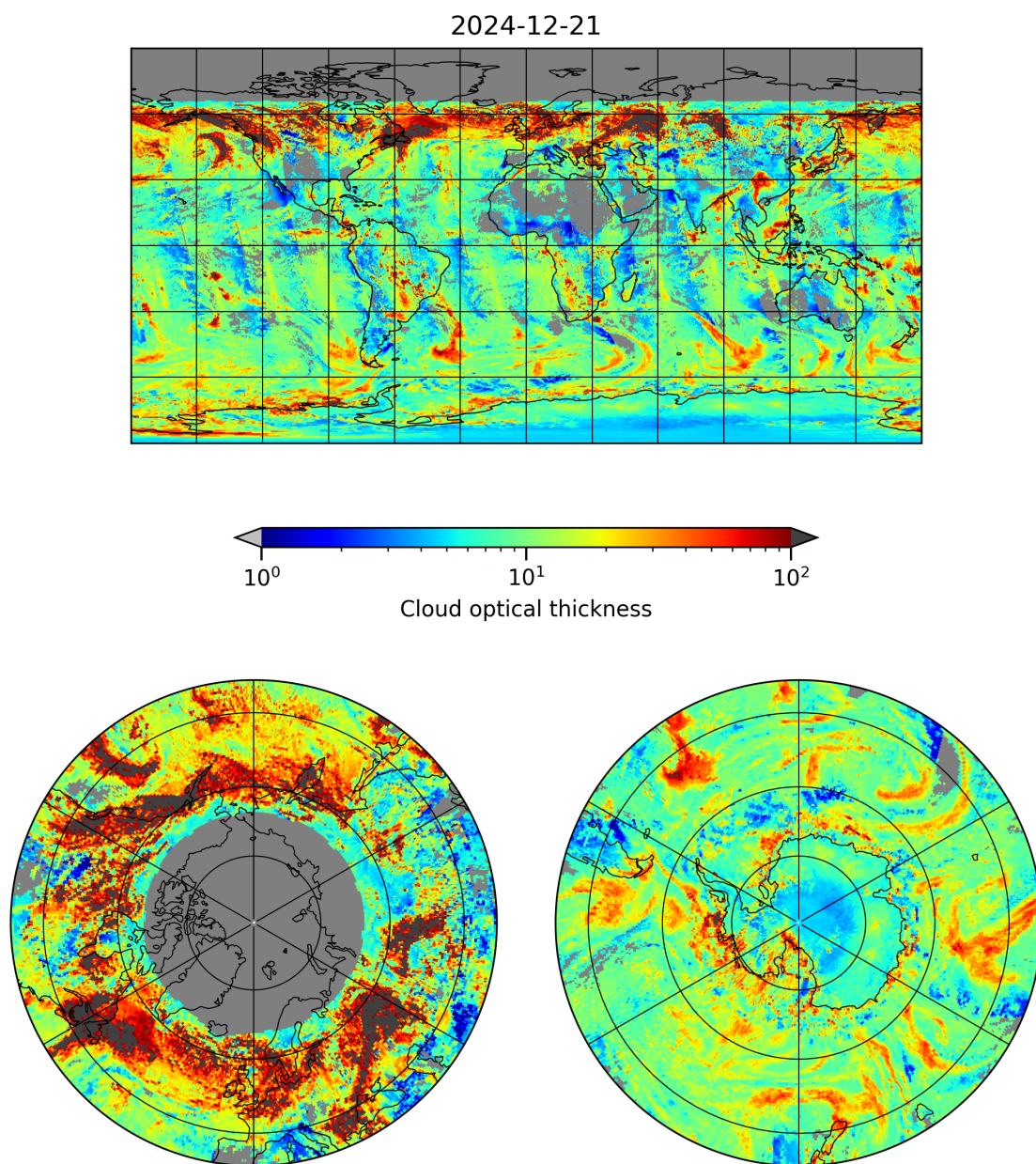


Figure 6: Map of “Cloud optical thickness” for 2024-12-21 to 2024-12-22

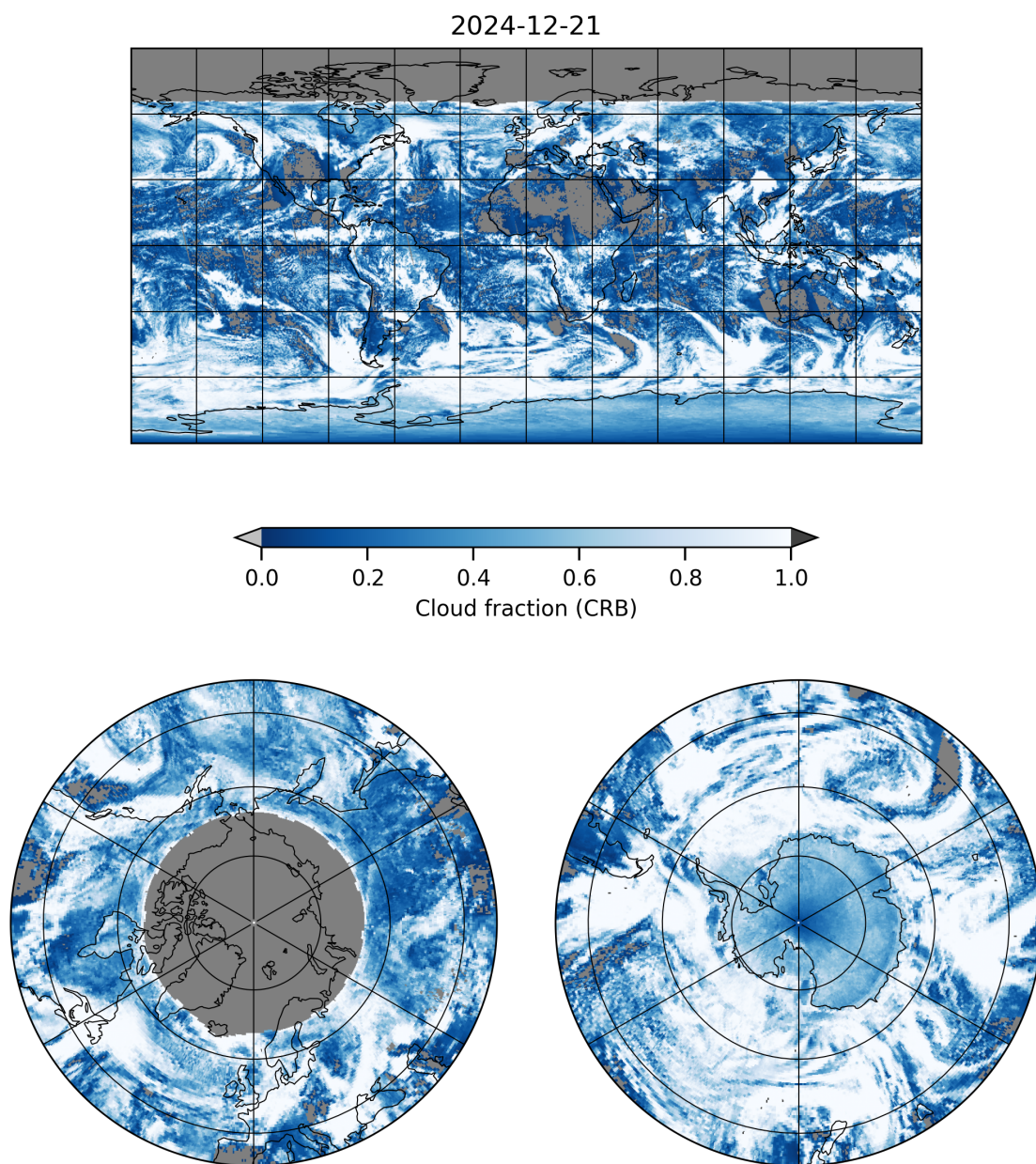


Figure 7: Map of “Cloud fraction (CRB)” for 2024-12-21 to 2024-12-22

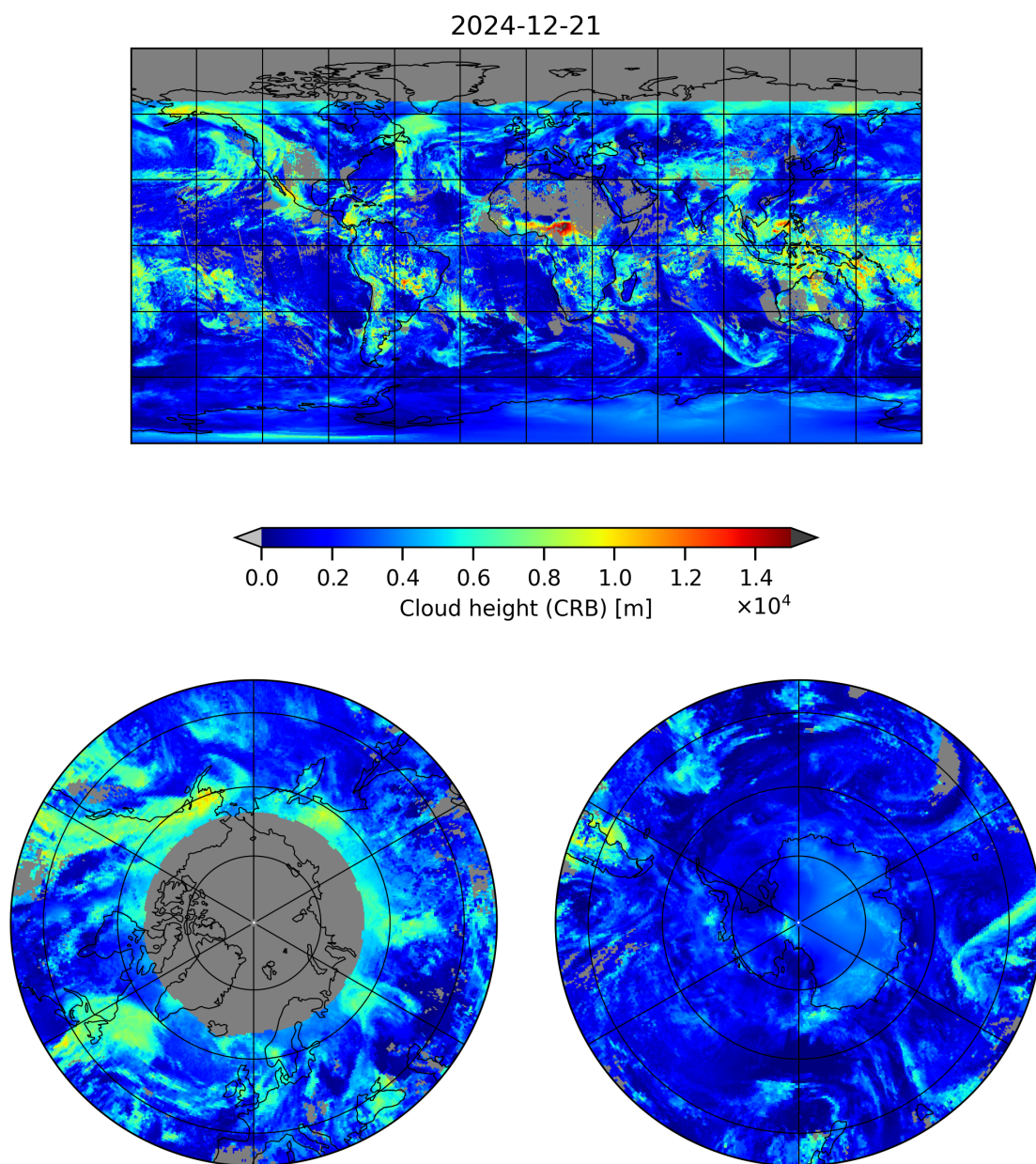


Figure 8: Map of “Cloud height (CRB)” for 2024-12-21 to 2024-12-22

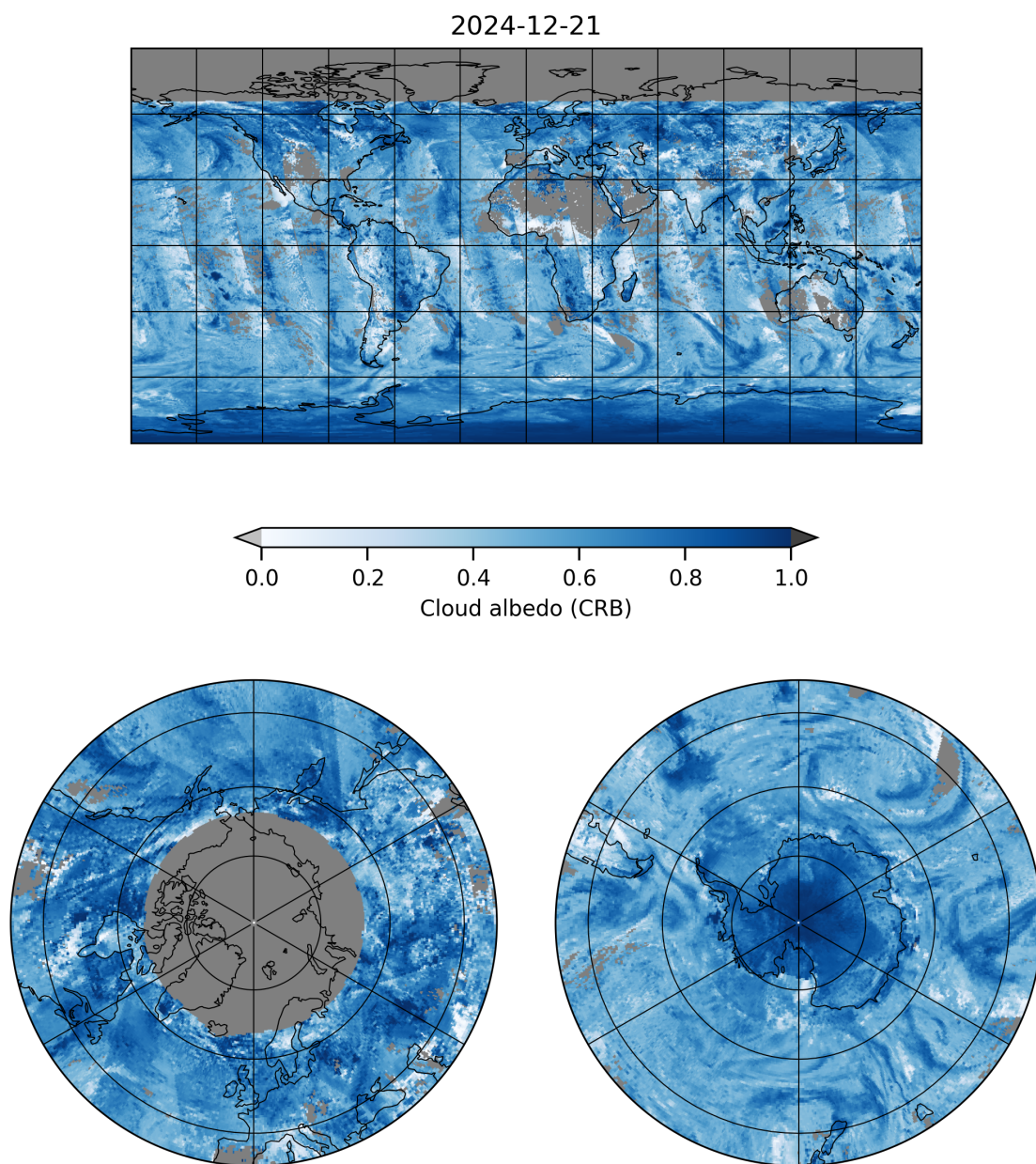


Figure 9: Map of “Cloud albedo (CRB)” for 2024-12-21 to 2024-12-22

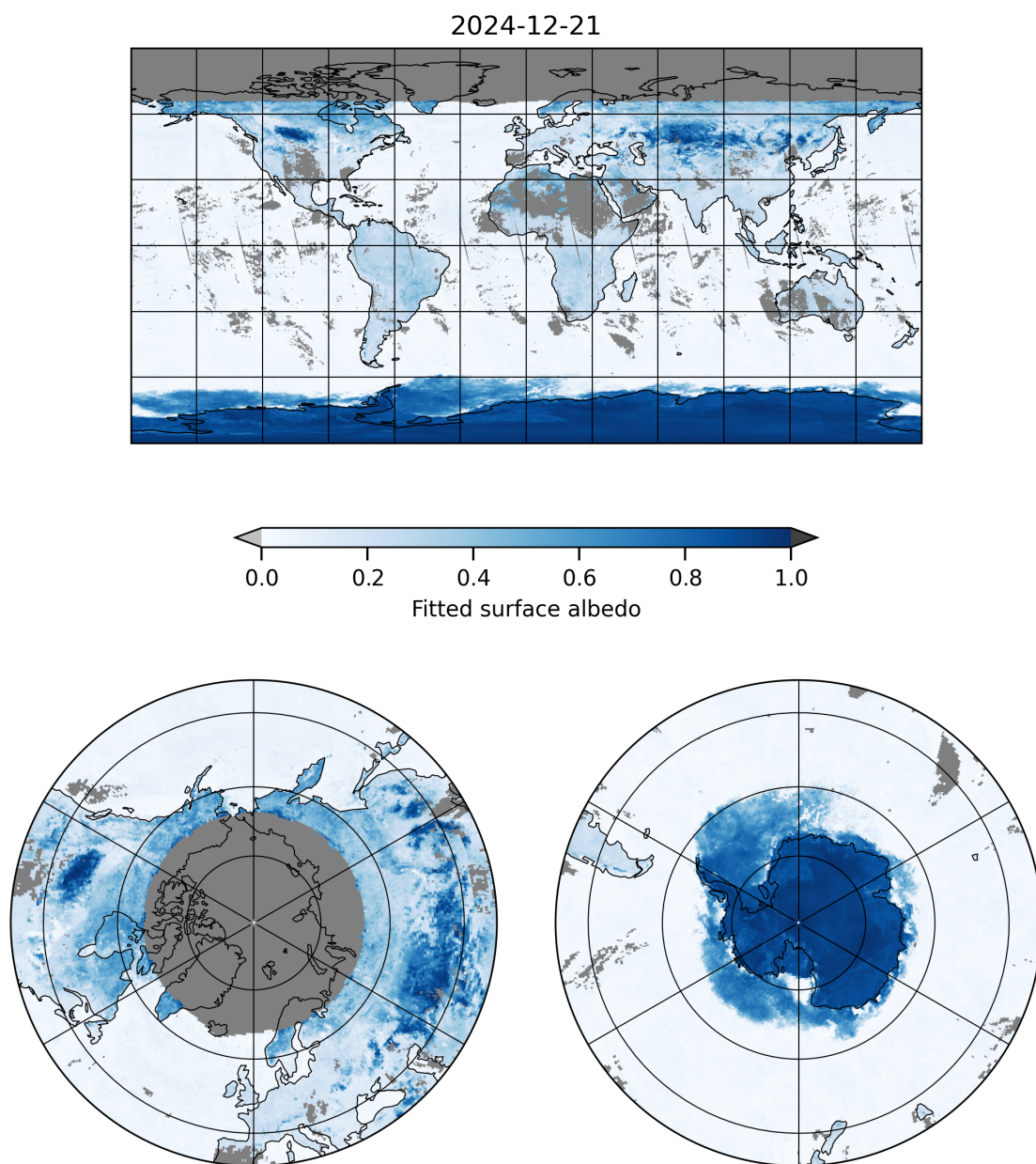


Figure 10: Map of “Fitted surface albedo” for 2024-12-21 to 2024-12-22

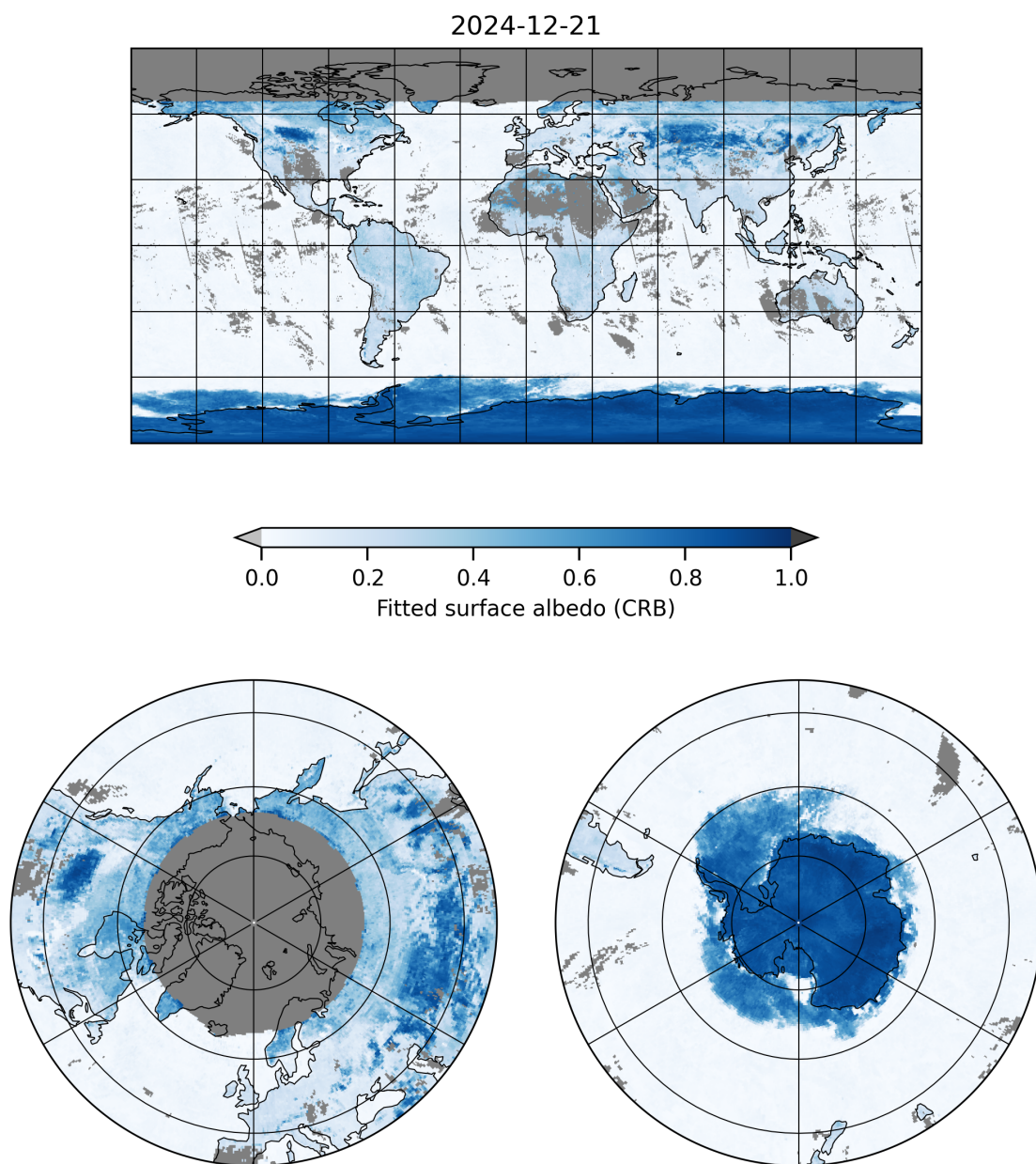


Figure 11: Map of “Fitted surface albedo (CRB)” for 2024-12-21 to 2024-12-22

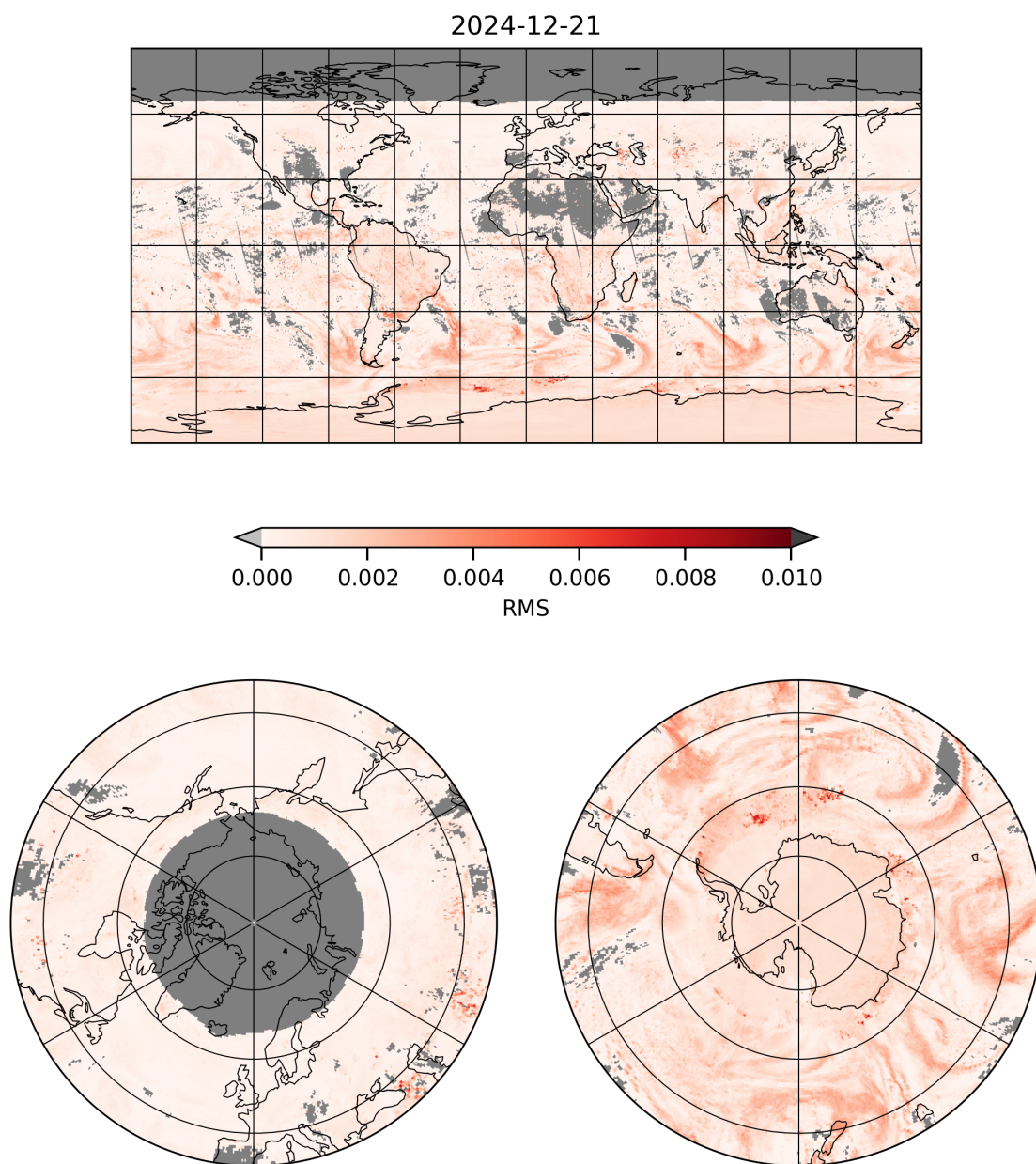


Figure 12: Map of “RMS” for 2024-12-21 to 2024-12-22

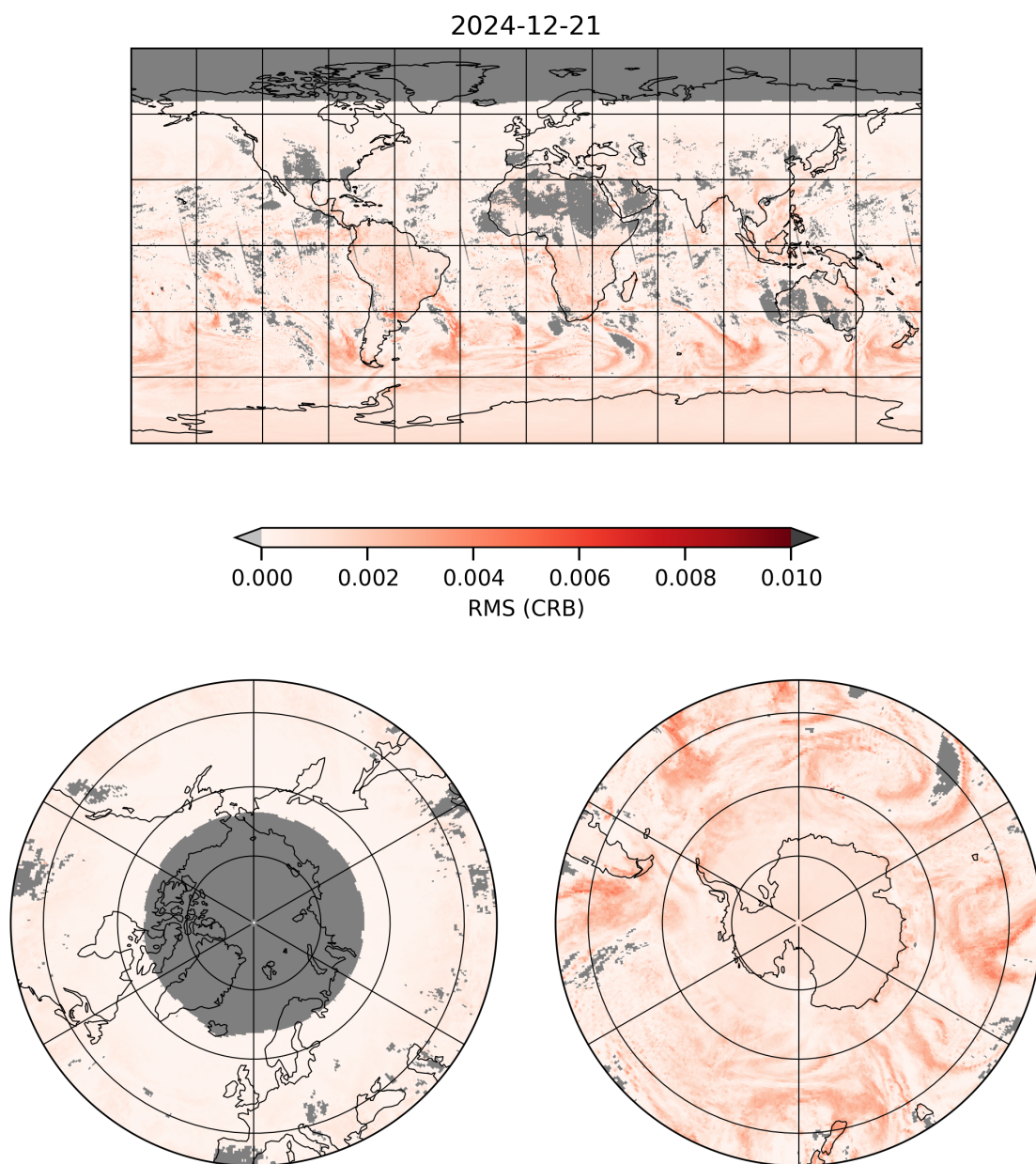


Figure 13: Map of “RMS (CRB)” for 2024-12-21 to 2024-12-22

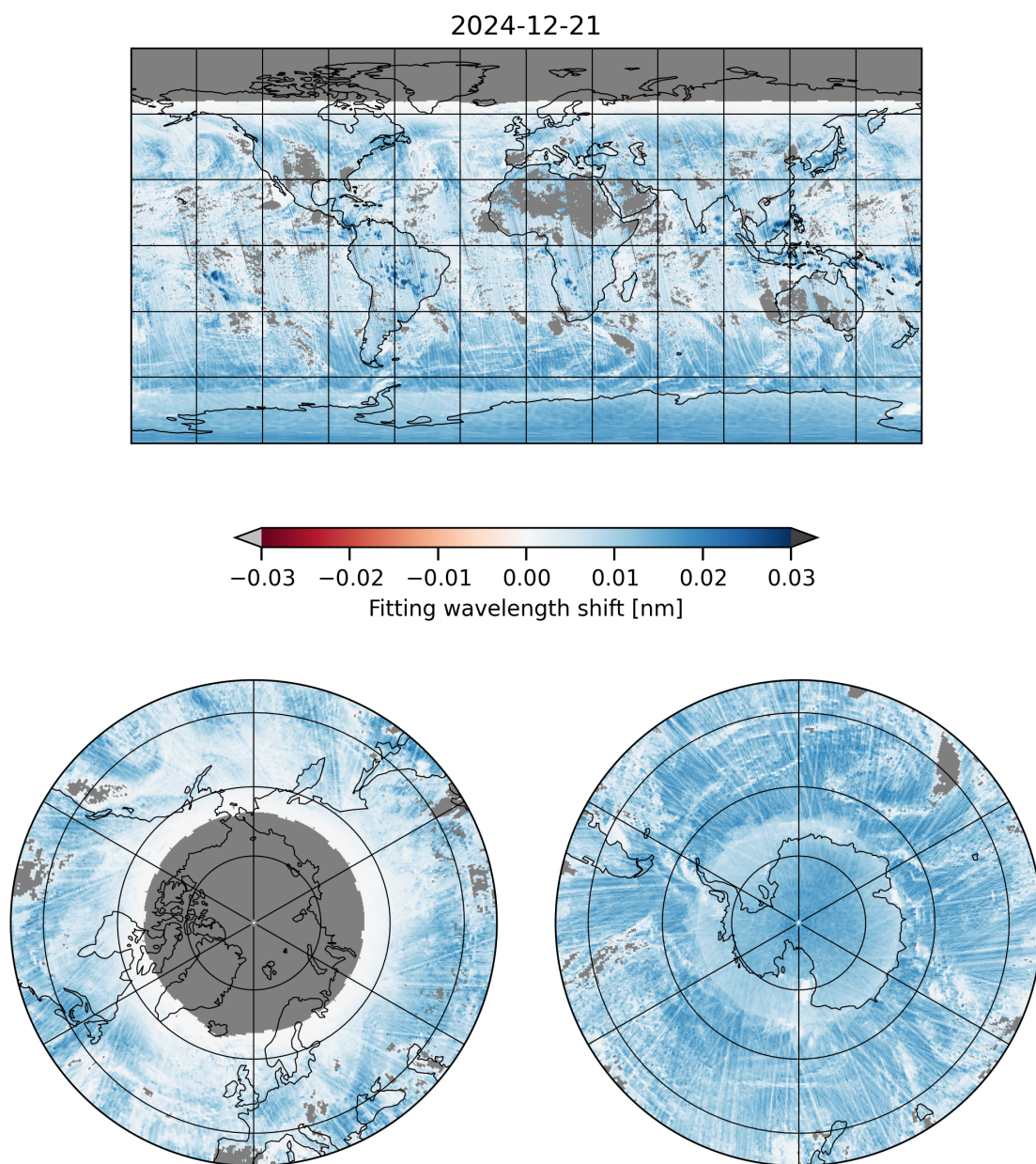


Figure 14: Map of “Fitting wavelength shift” for 2024-12-21 to 2024-12-22

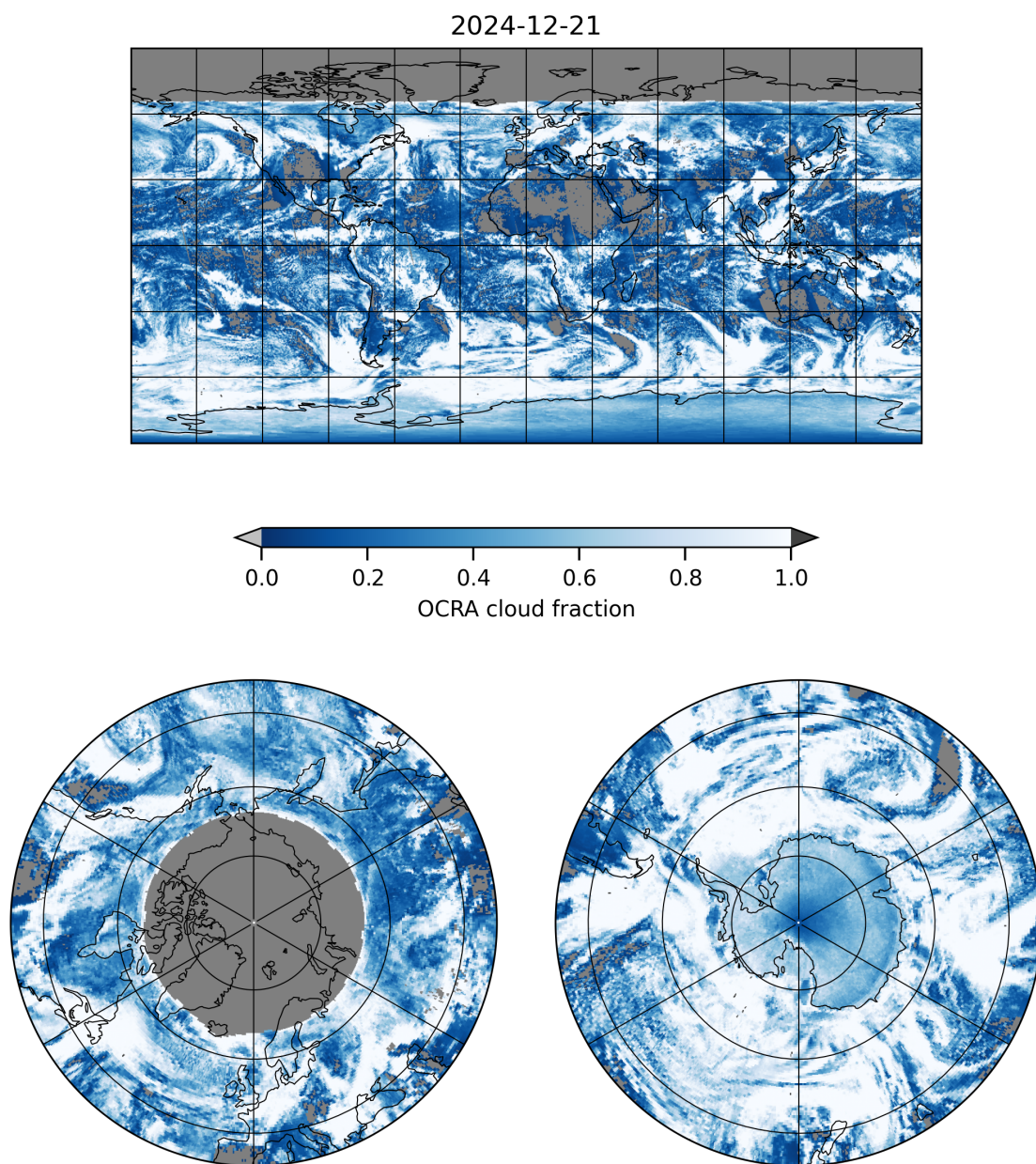


Figure 15: Map of “OCRA cloud fraction” for 2024-12-21 to 2024-12-22

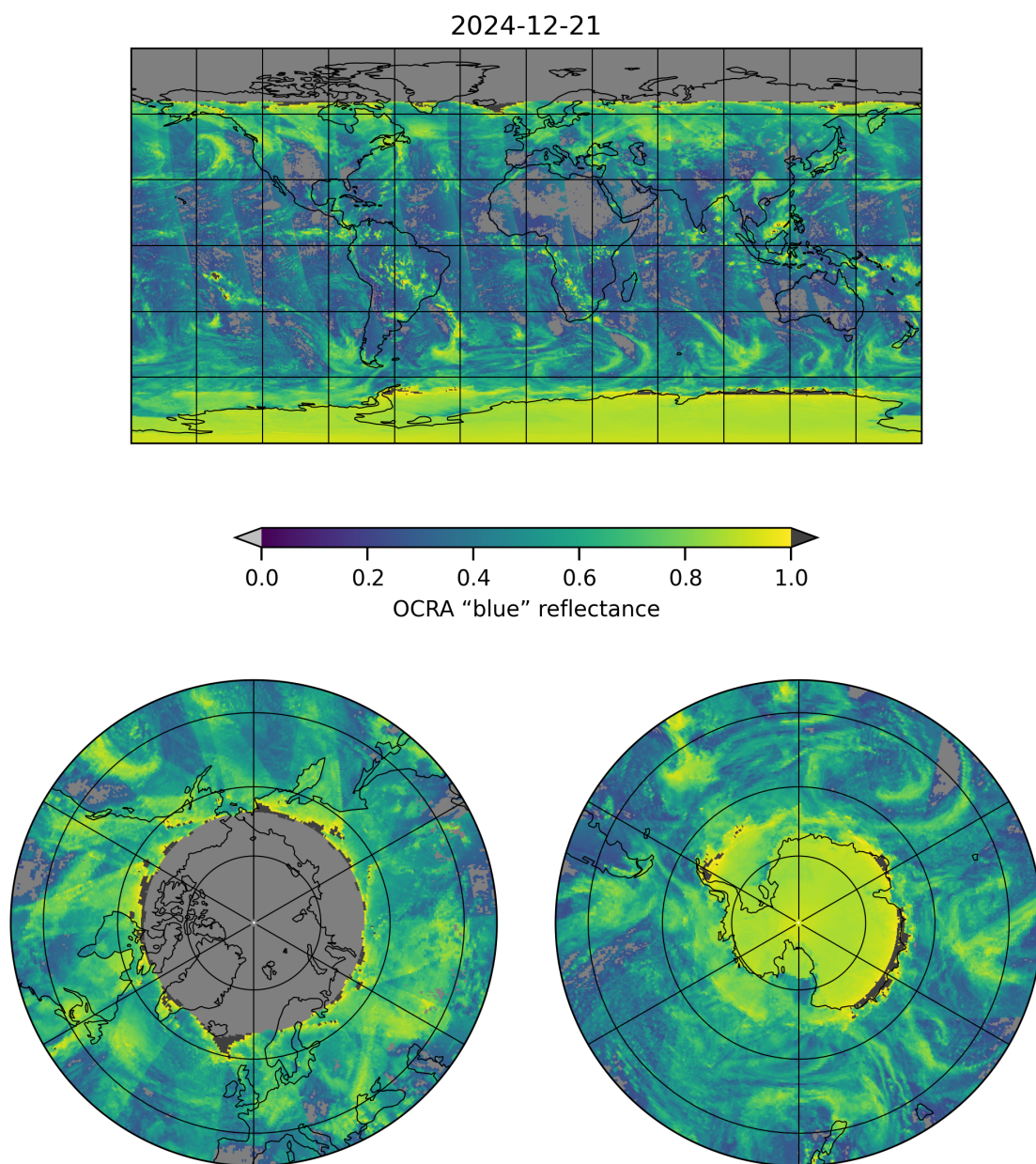


Figure 16: Map of "OCRA "blue" reflectance" for 2024-12-21 to 2024-12-22

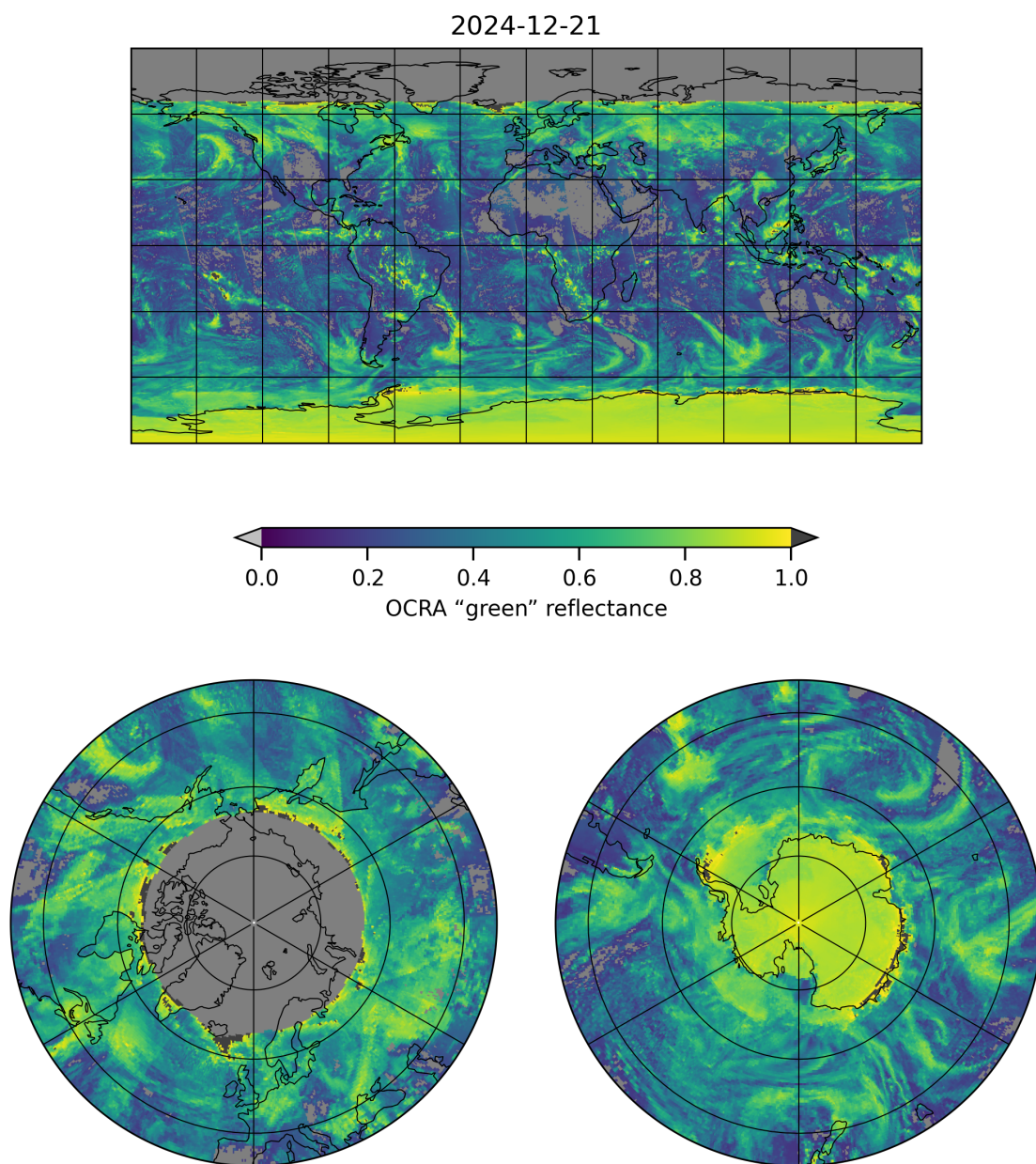


Figure 17: Map of "OCRA "green" reflectance" for 2024-12-21 to 2024-12-22

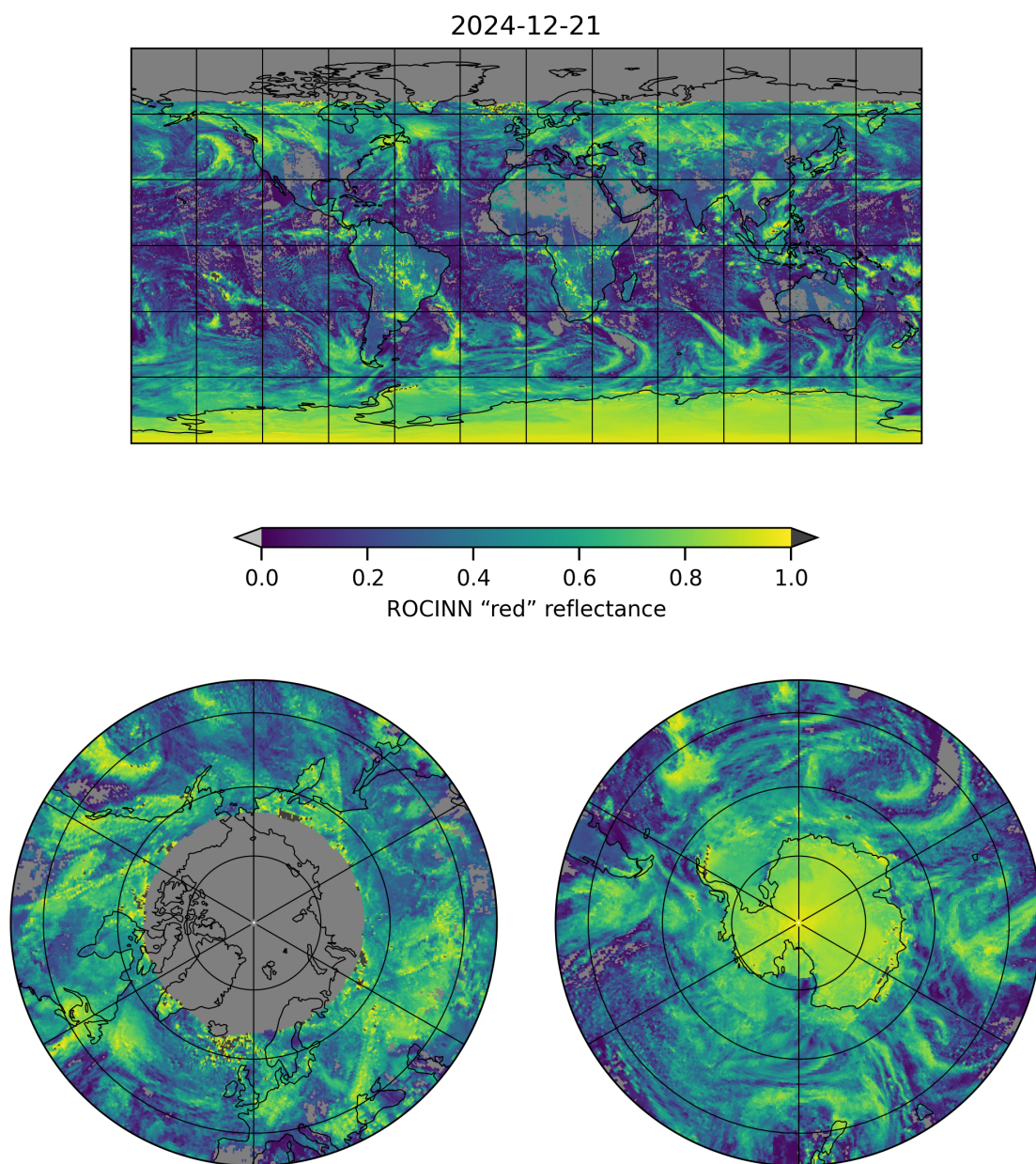


Figure 18: Map of "ROCINN "red" reflectance" for 2024-12-21 to 2024-12-22

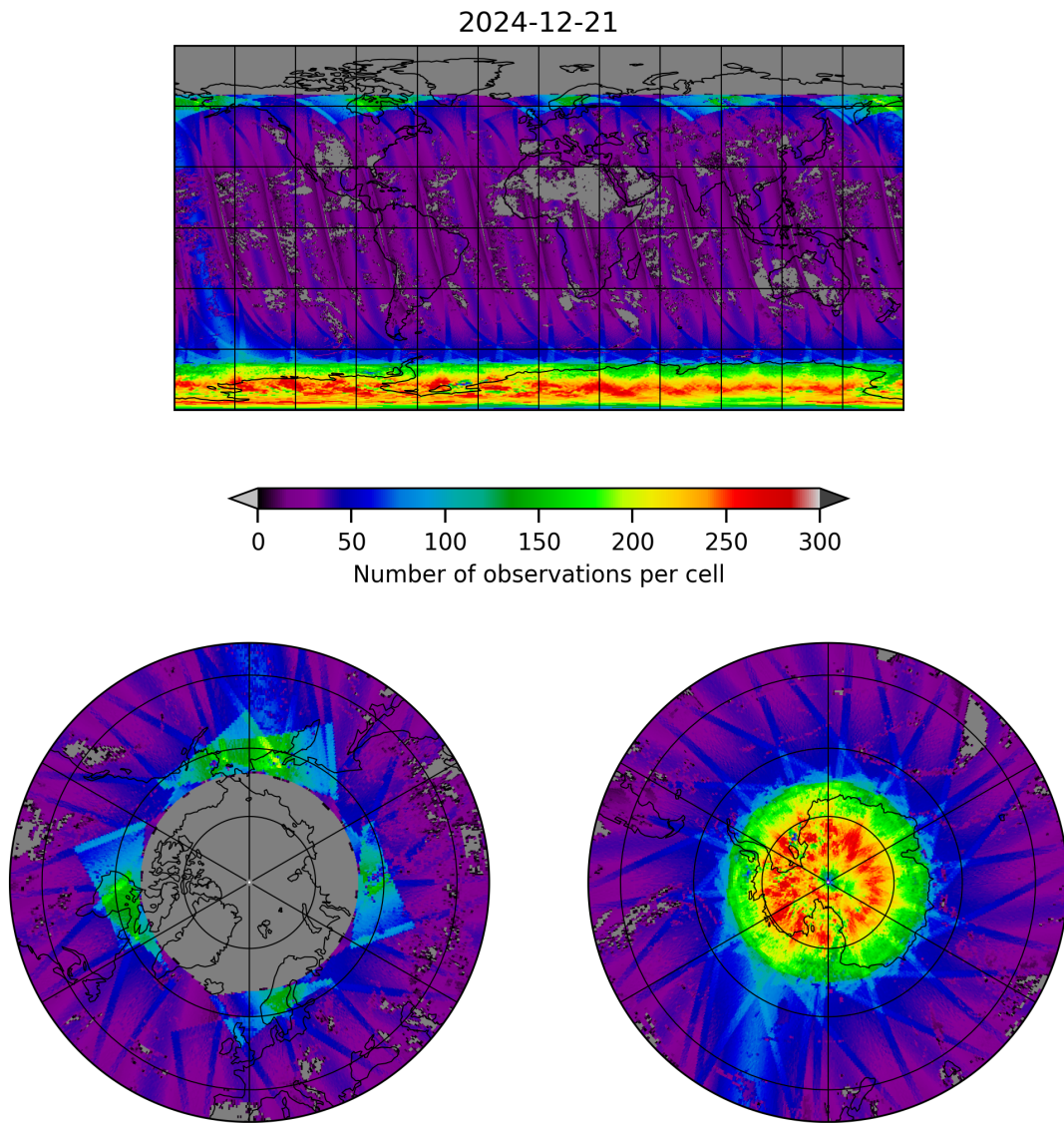


Figure 19: Map of the number of observations for 2024-12-21 to 2024-12-22

7 Zonal average

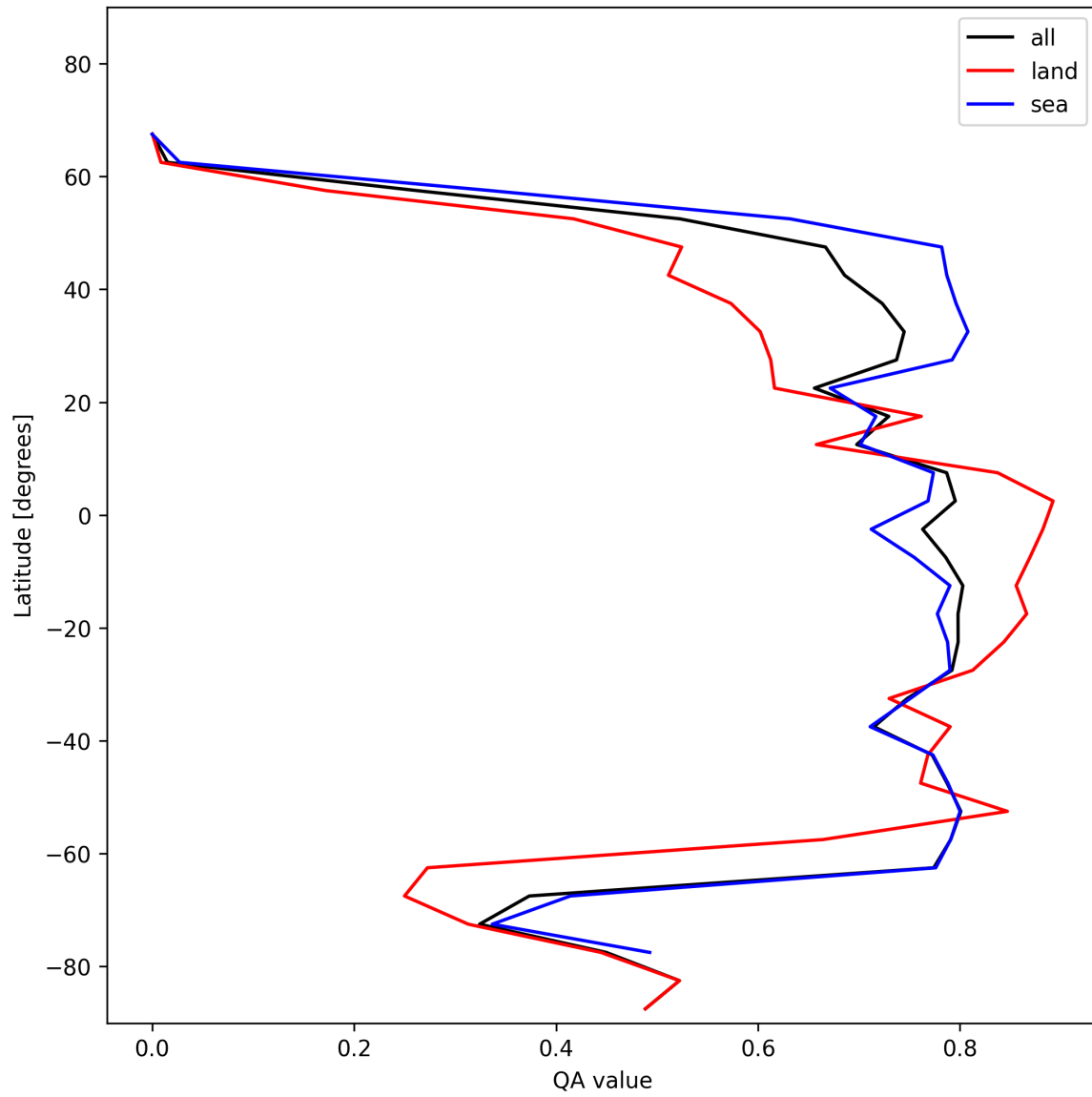


Figure 20: Zonal average of “QA value” for 2024-12-21 to 2024-12-22.

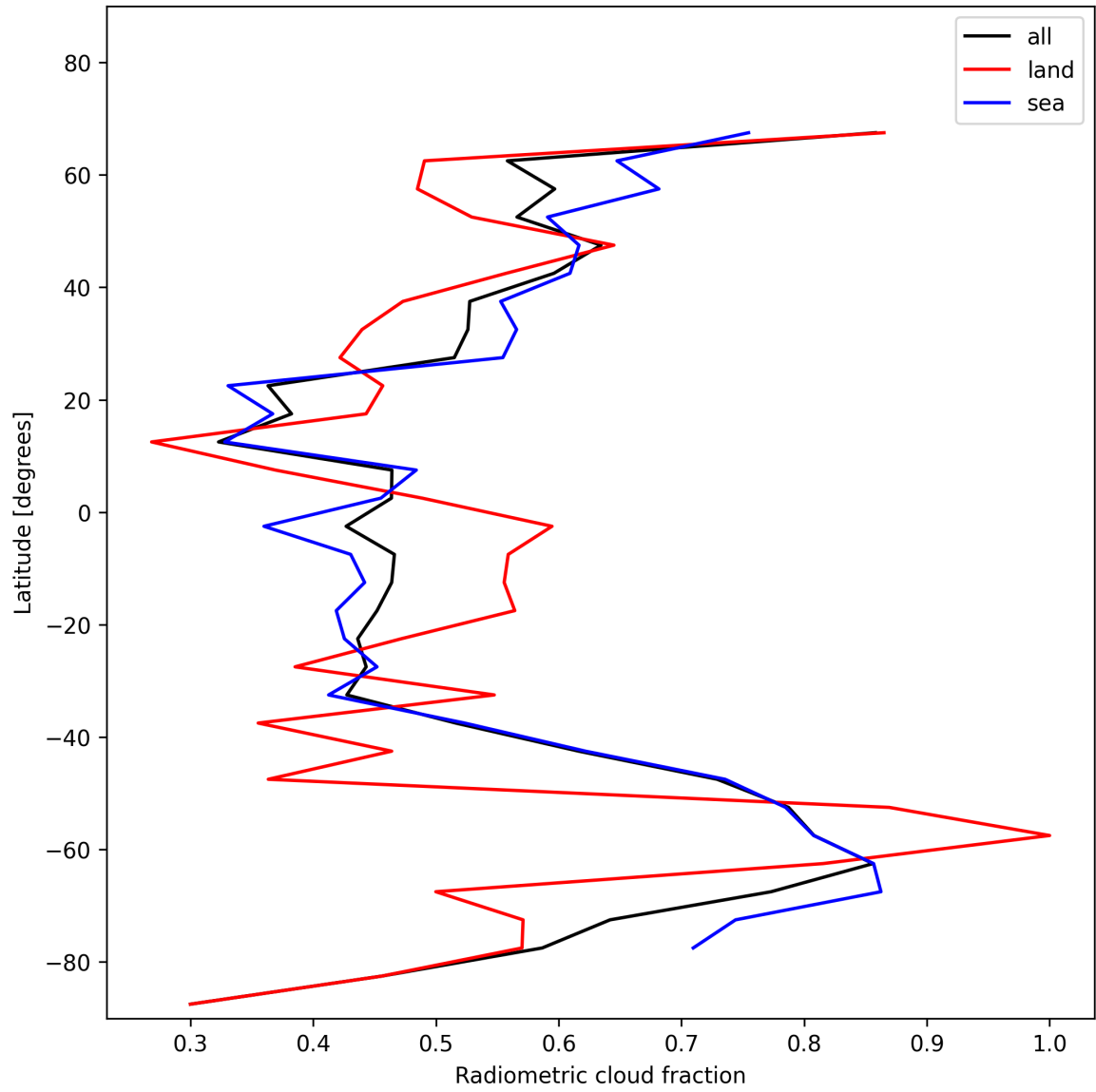


Figure 21: Zonal average of “Radiometric cloud fraction” for 2024-12-21 to 2024-12-22.

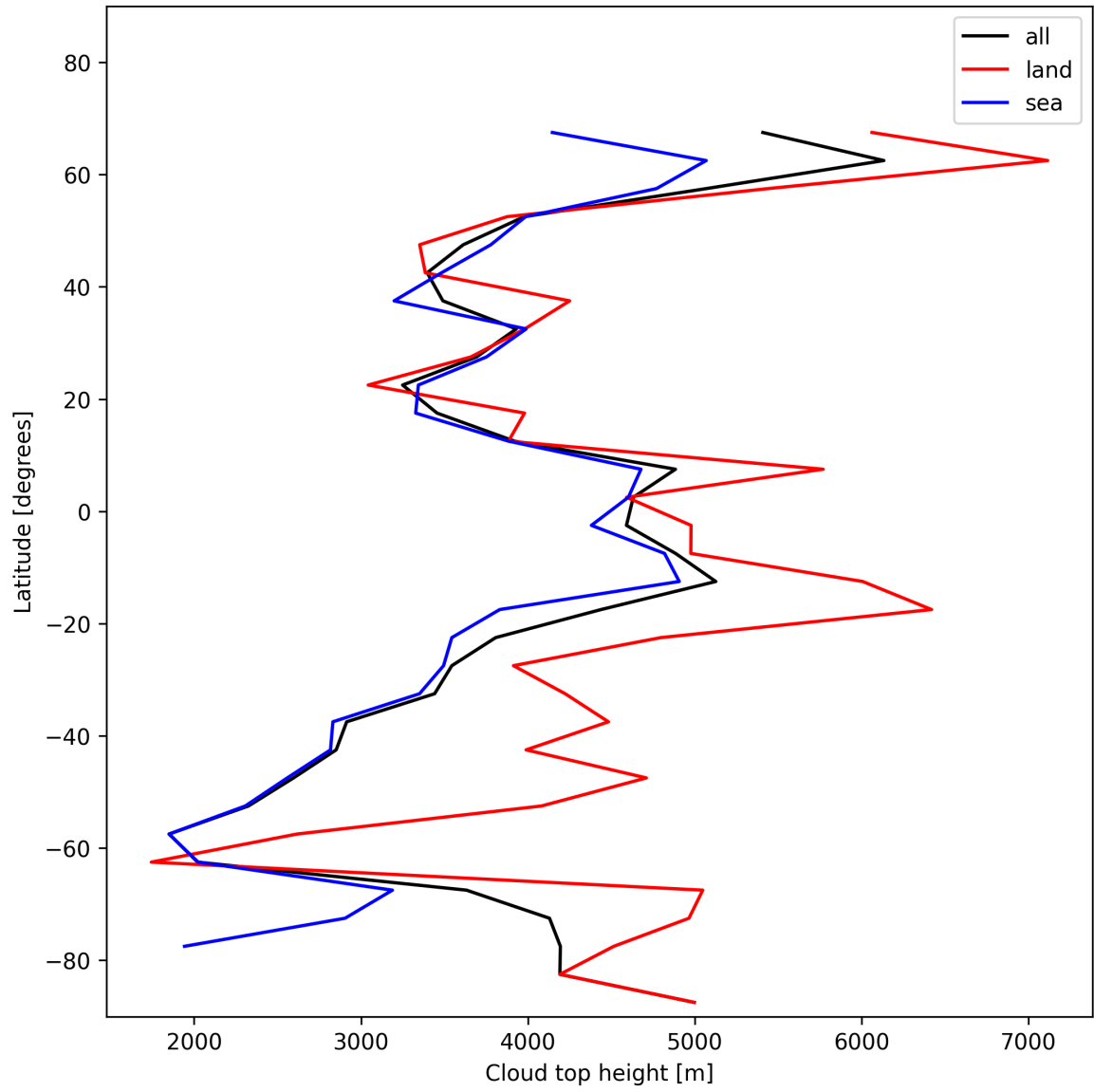


Figure 22: Zonal average of “Cloud top height” for 2024-12-21 to 2024-12-22.

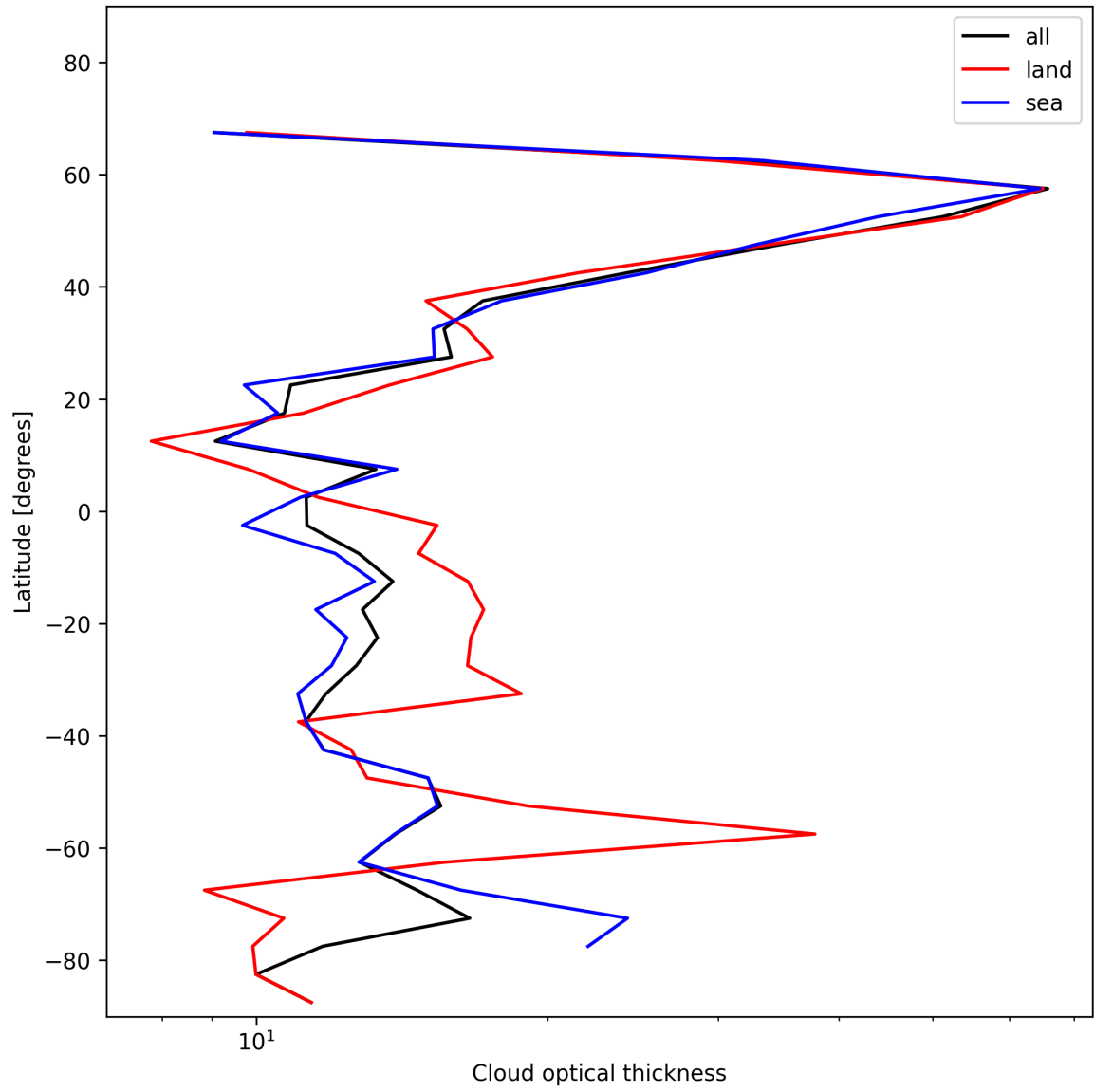


Figure 23: Zonal average of “Cloud optical thickness” for 2024-12-21 to 2024-12-22.

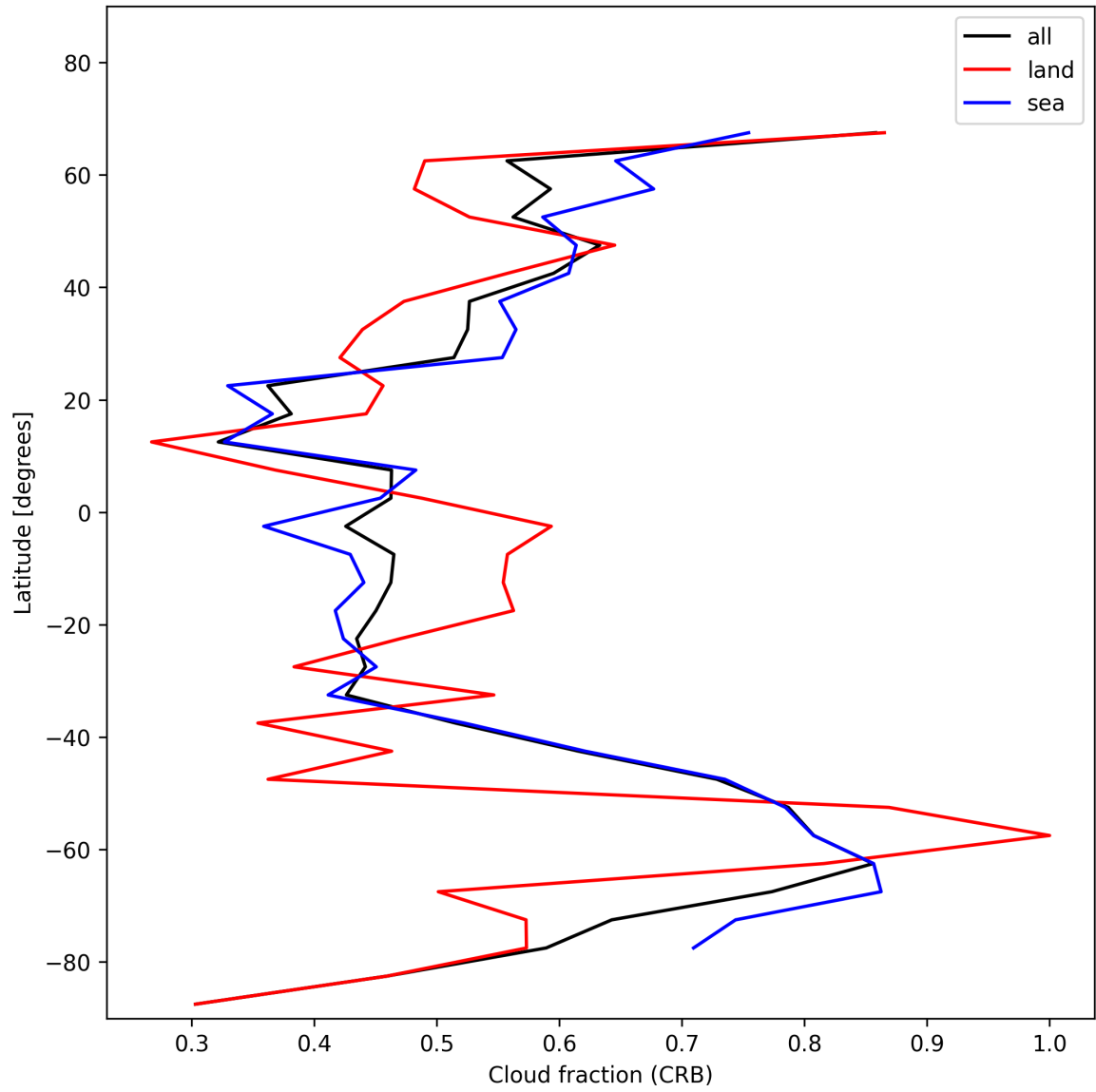


Figure 24: Zonal average of “Cloud fraction (CRB)” for 2024-12-21 to 2024-12-22.

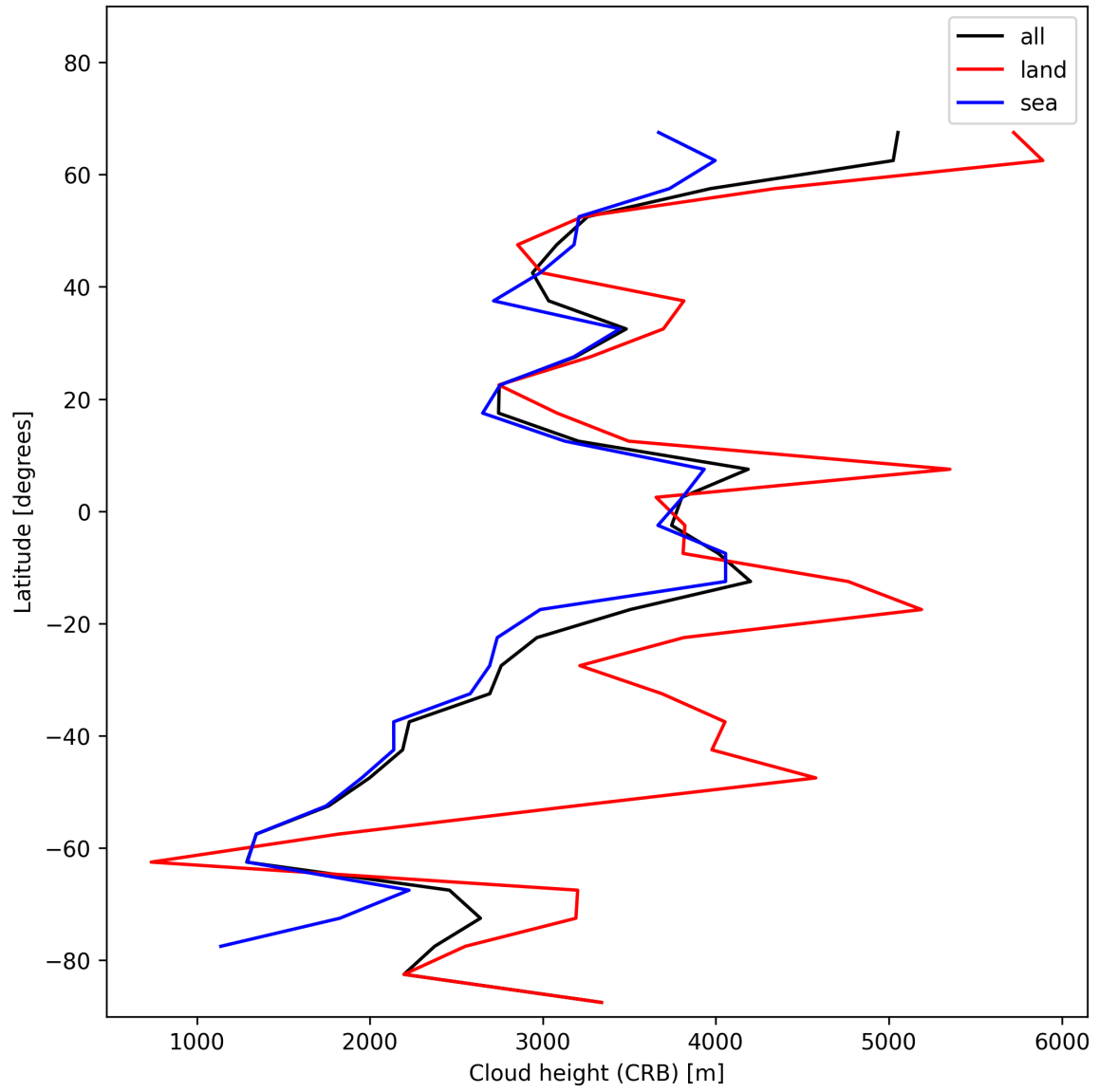


Figure 25: Zonal average of “Cloud height (CRB)” for 2024-12-21 to 2024-12-22.

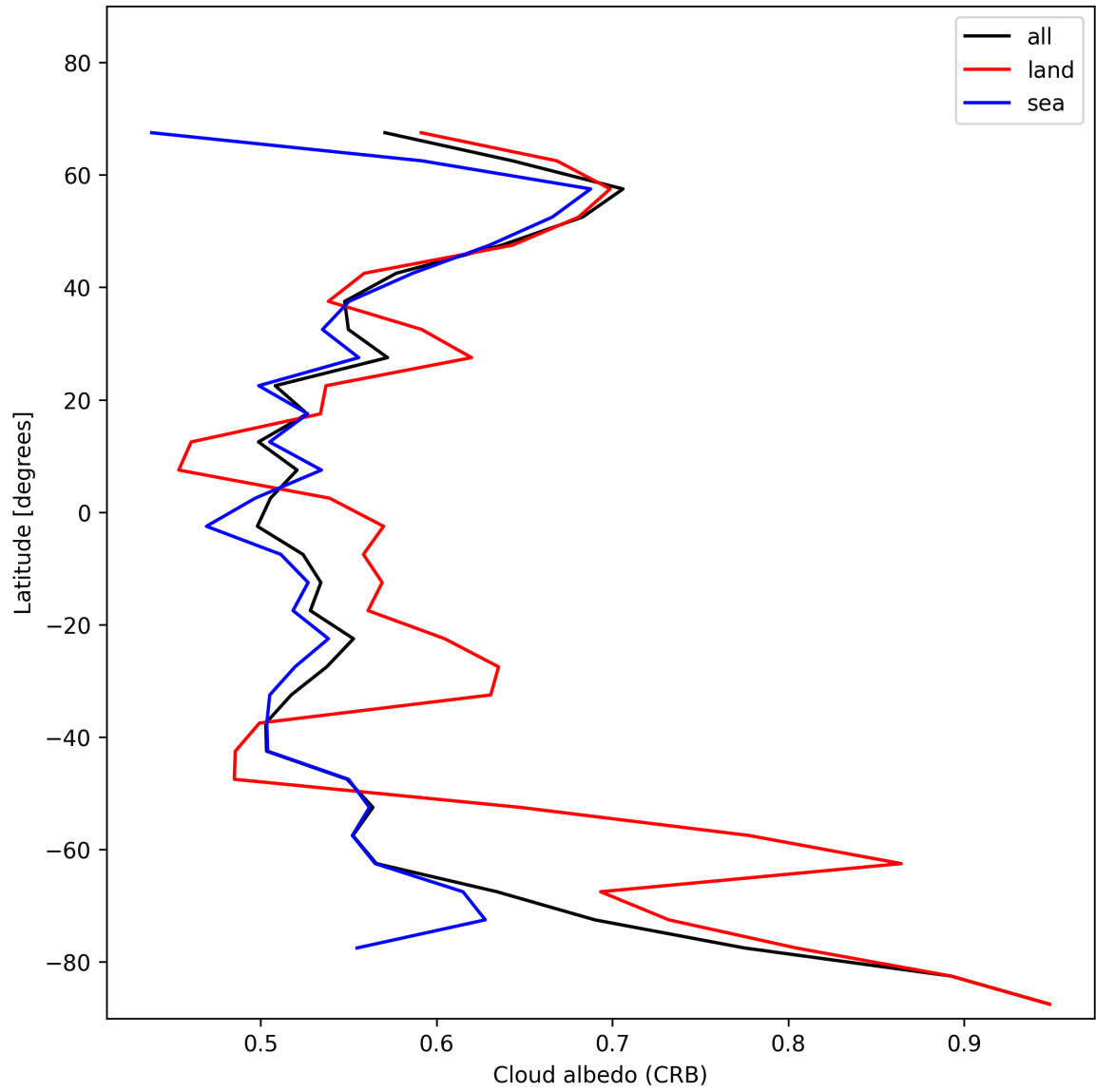


Figure 26: Zonal average of “Cloud albedo (CRB)” for 2024-12-21 to 2024-12-22.

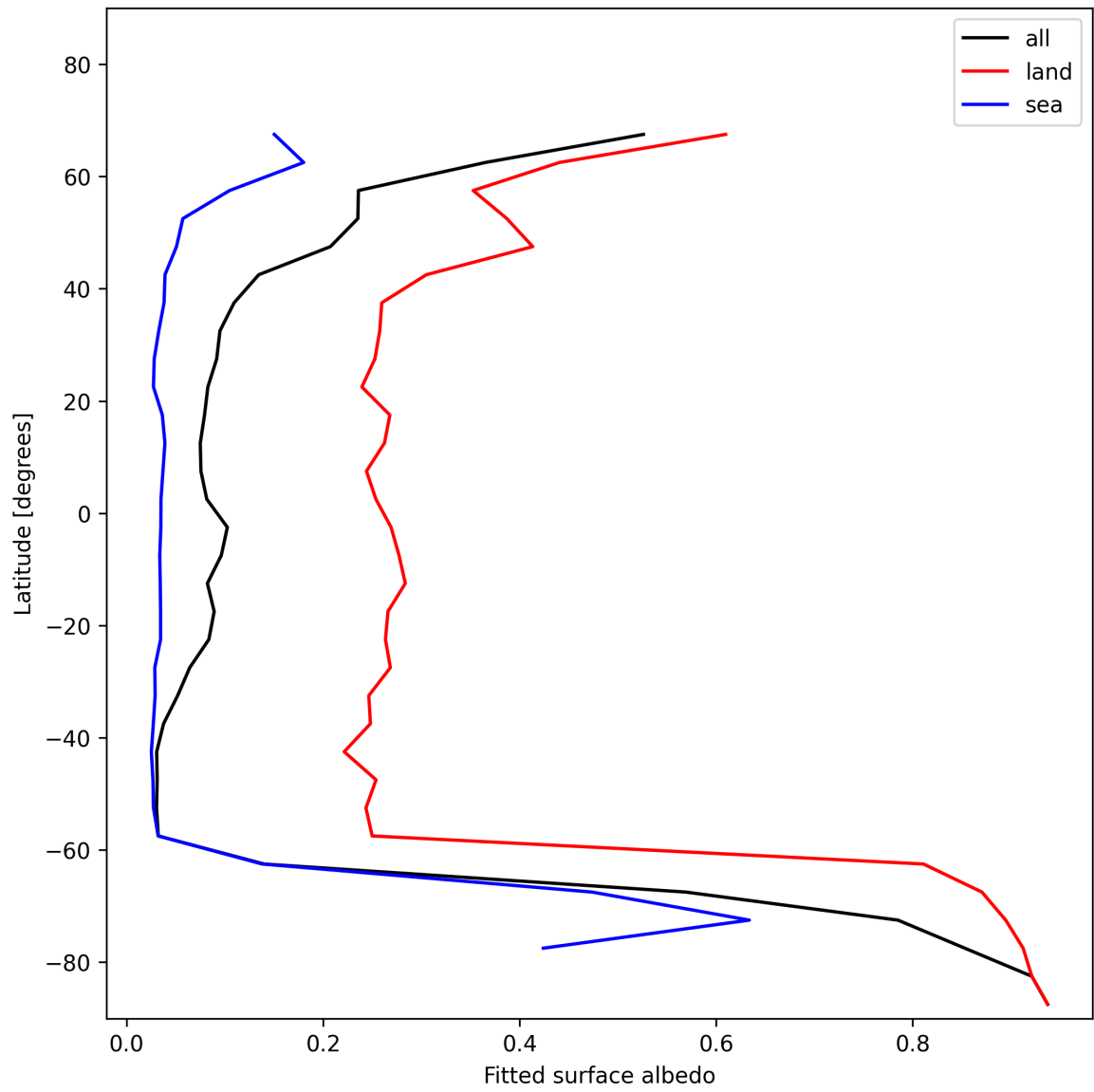


Figure 27: Zonal average of “Fitted surface albedo” for 2024-12-21 to 2024-12-22.

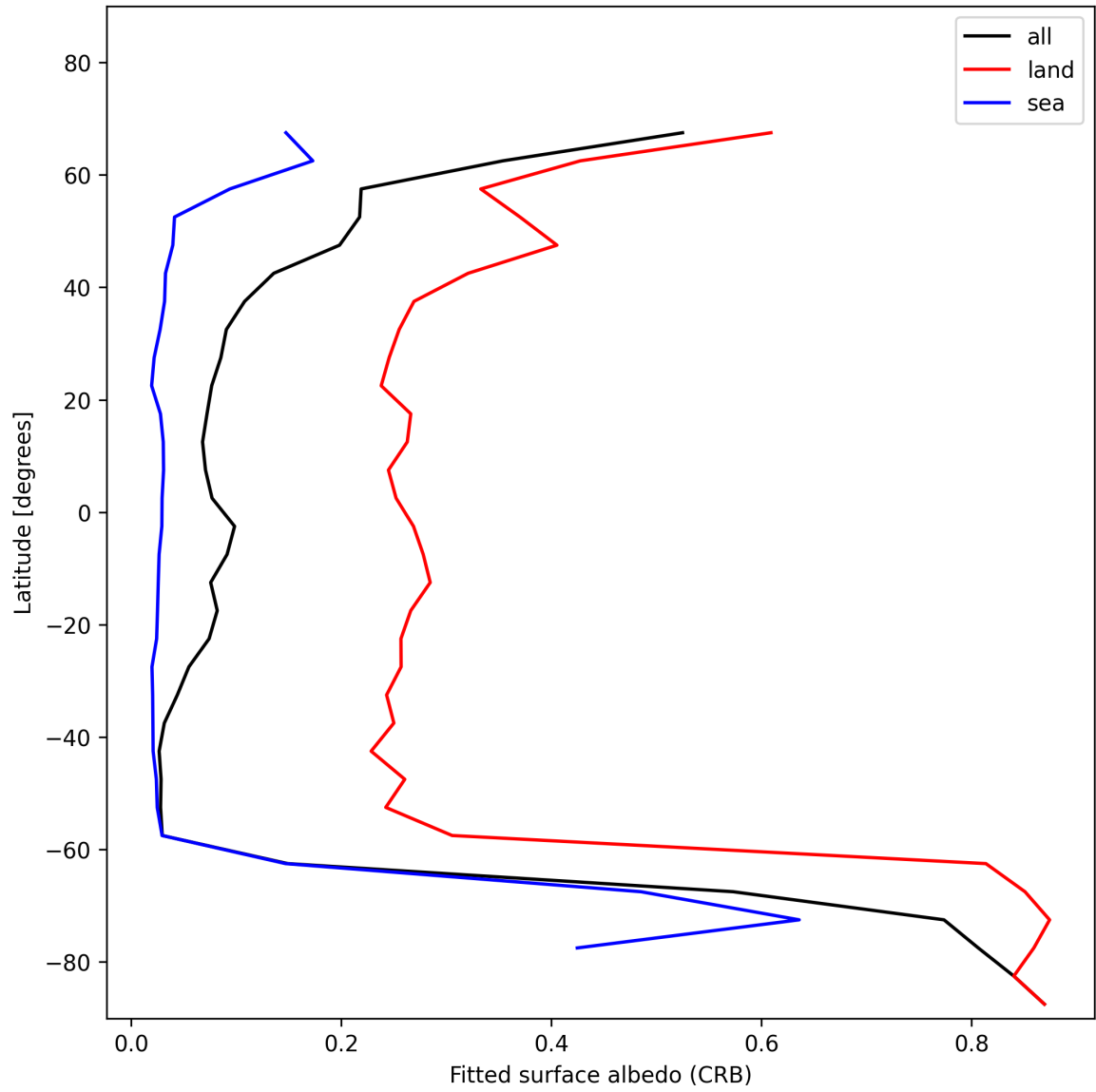


Figure 28: Zonal average of “Fitted surface albedo (CRB)” for 2024-12-21 to 2024-12-22.

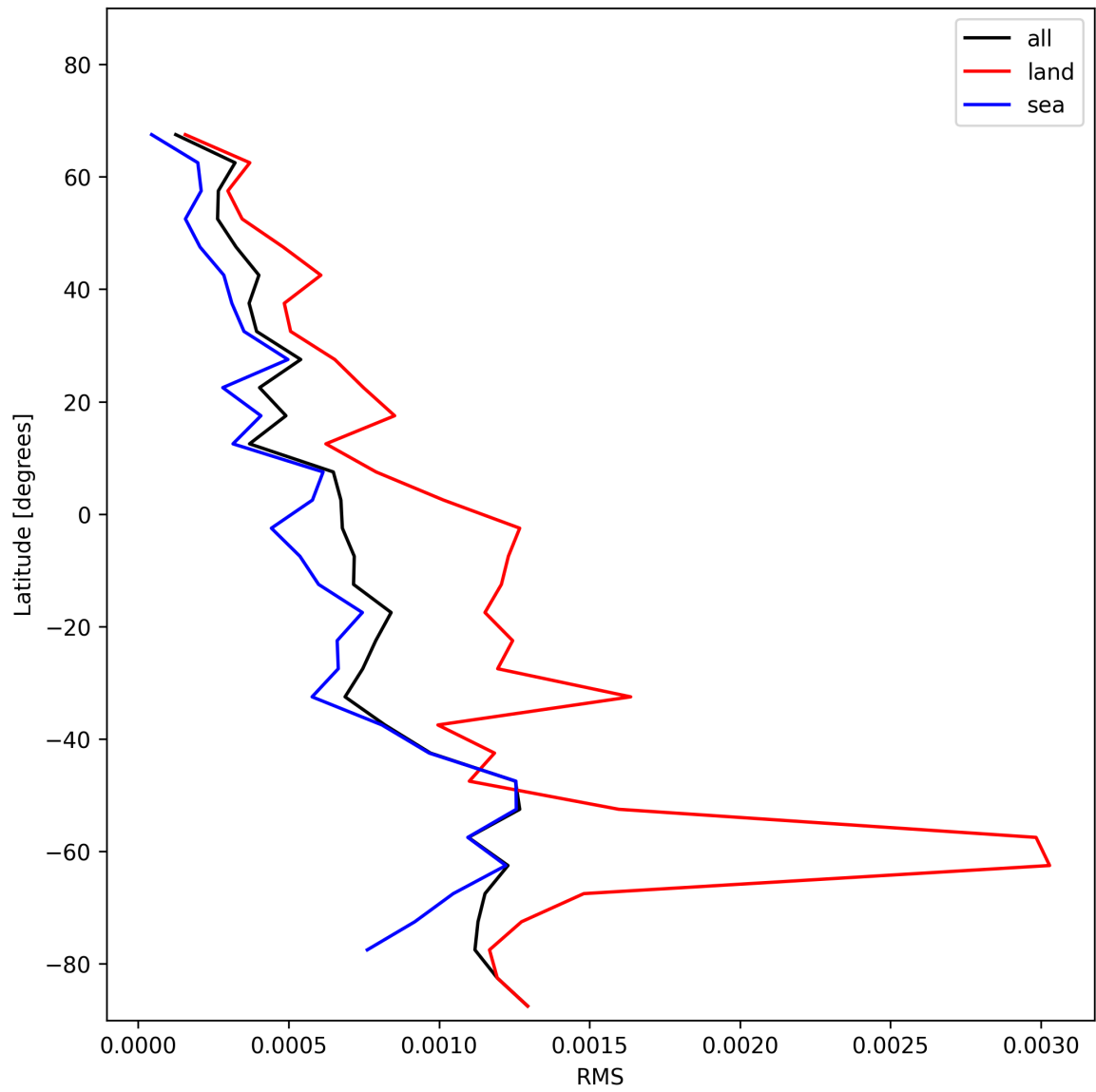


Figure 29: Zonal average of “RMS” for 2024-12-21 to 2024-12-22.

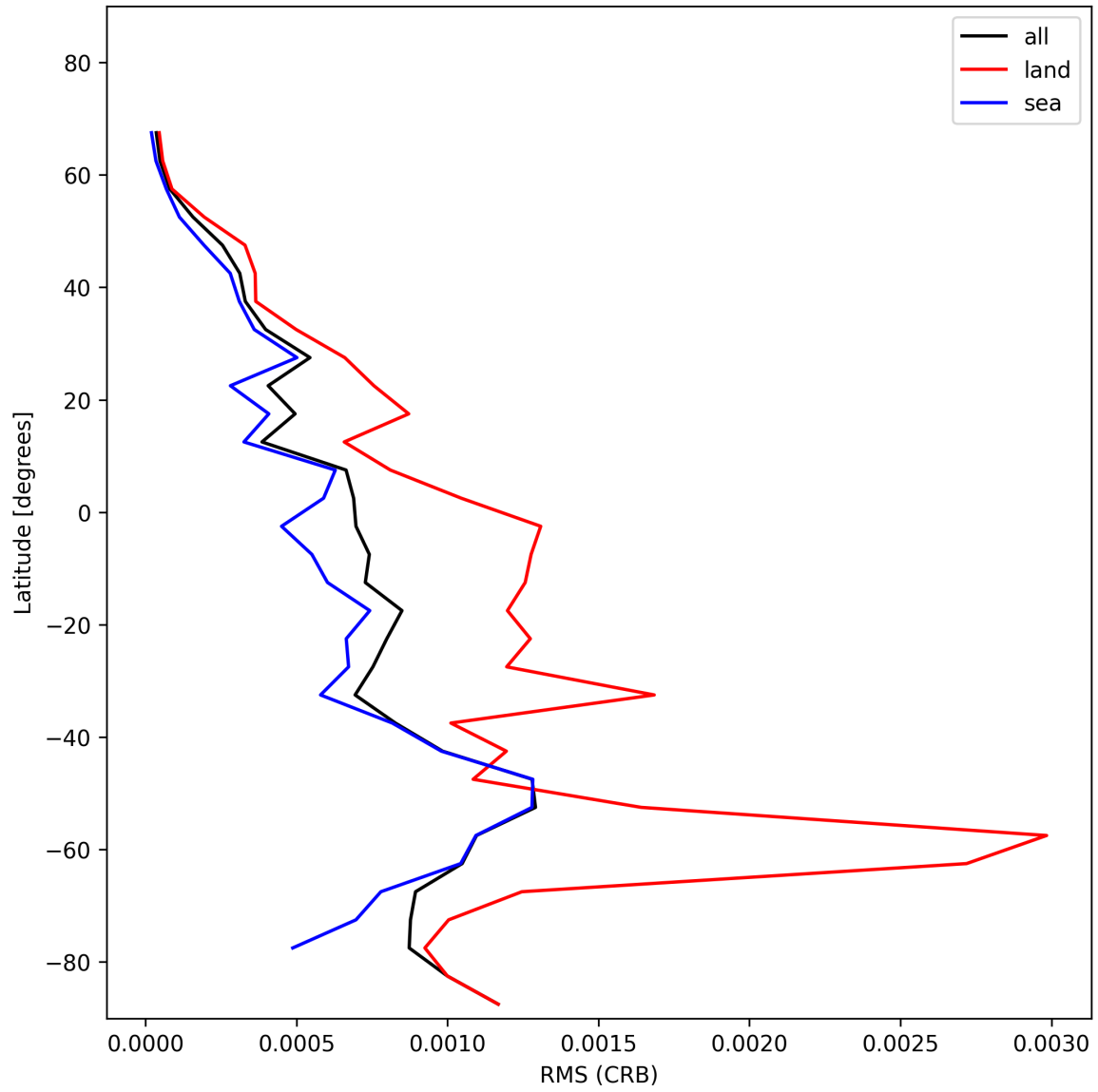


Figure 30: Zonal average of “RMS (CRB)” for 2024-12-21 to 2024-12-22.

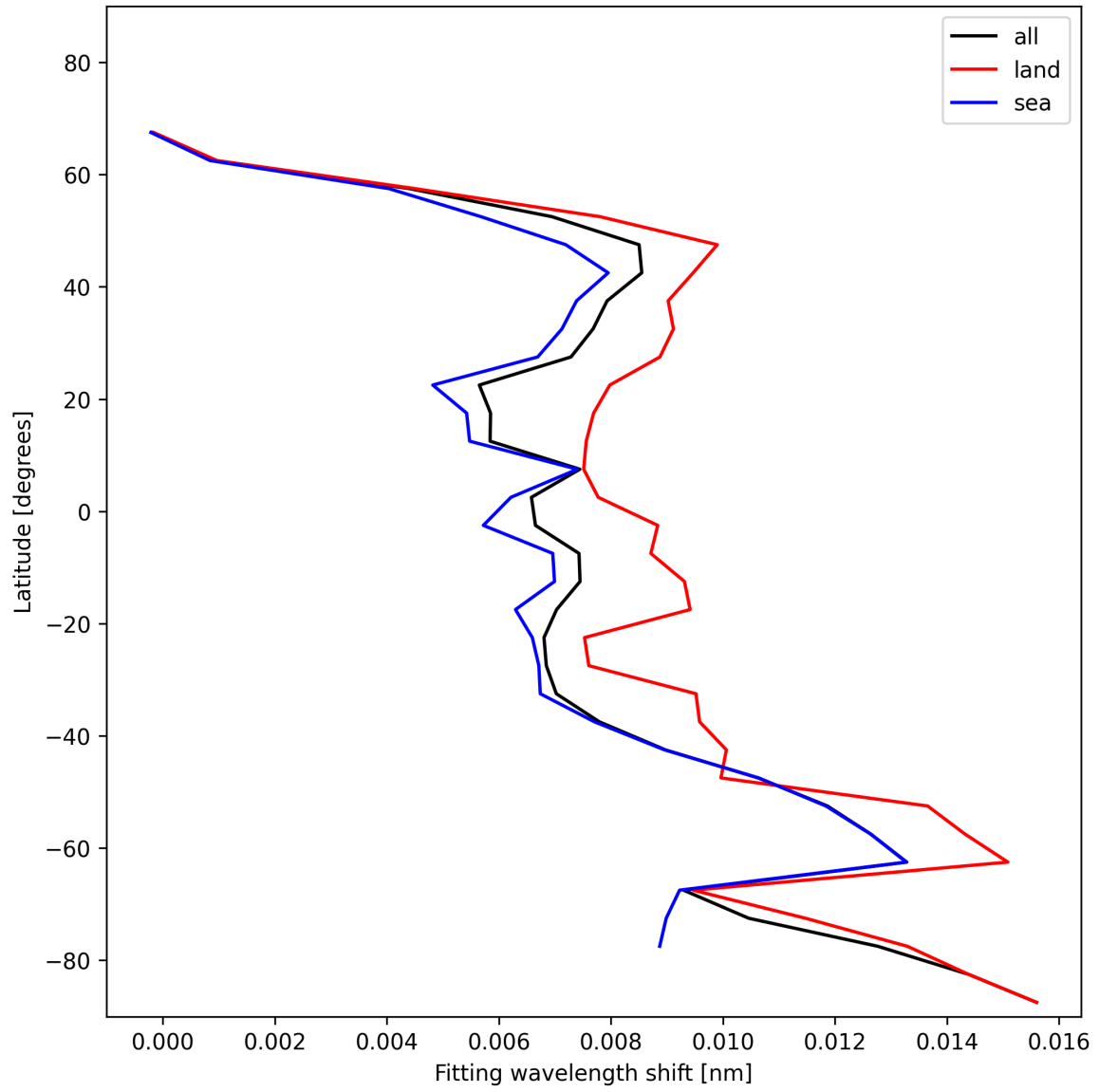


Figure 31: Zonal average of “Fitting wavelength shift” for 2024-12-21 to 2024-12-22.

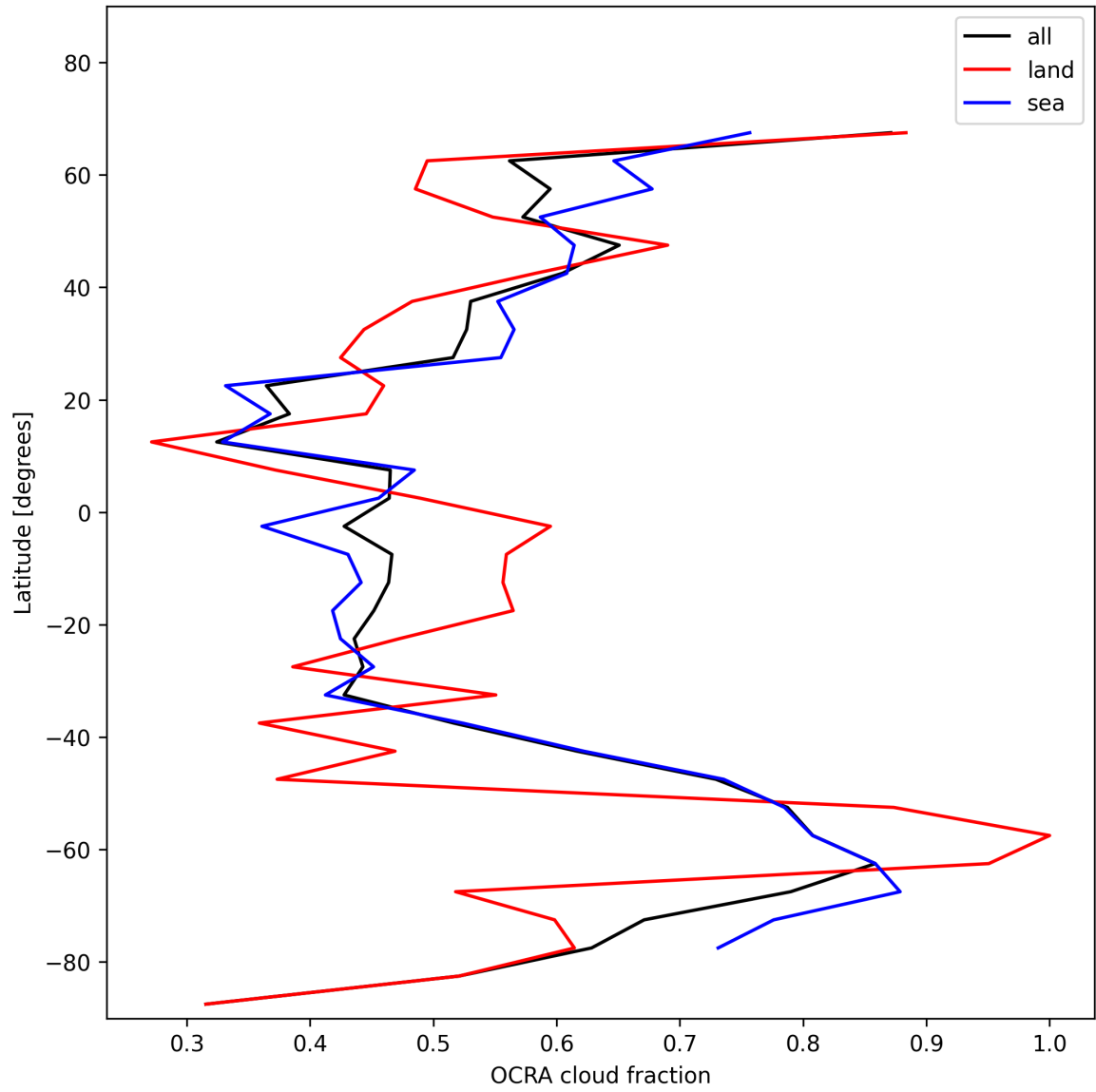


Figure 32: Zonal average of “OCRA cloud fraction” for 2024-12-21 to 2024-12-22.

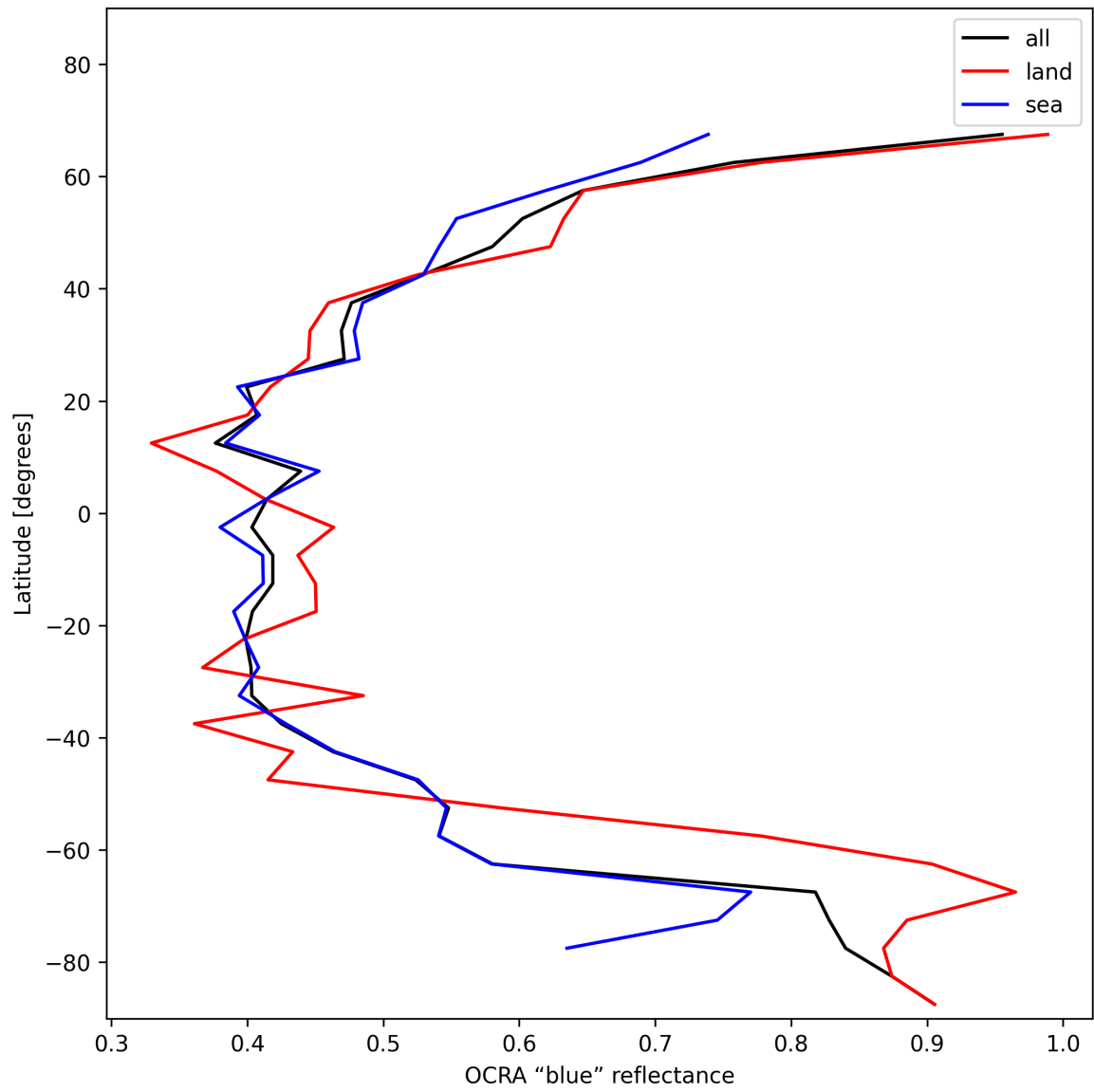


Figure 33: Zonal average of “OCRA “blue” reflectance” for 2024-12-21 to 2024-12-22.

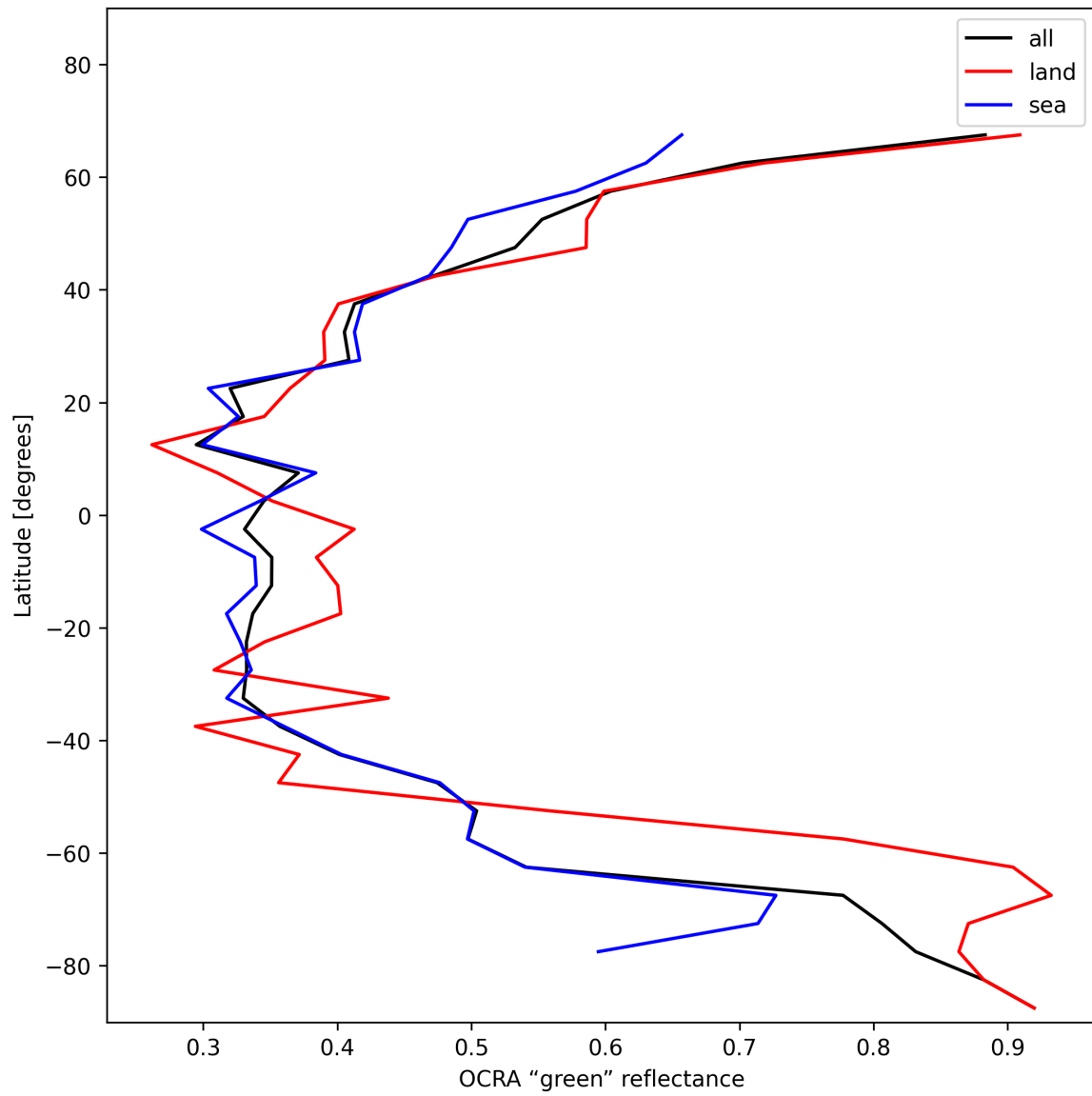


Figure 34: Zonal average of “OCRA “green” reflectance” for 2024-12-21 to 2024-12-22.

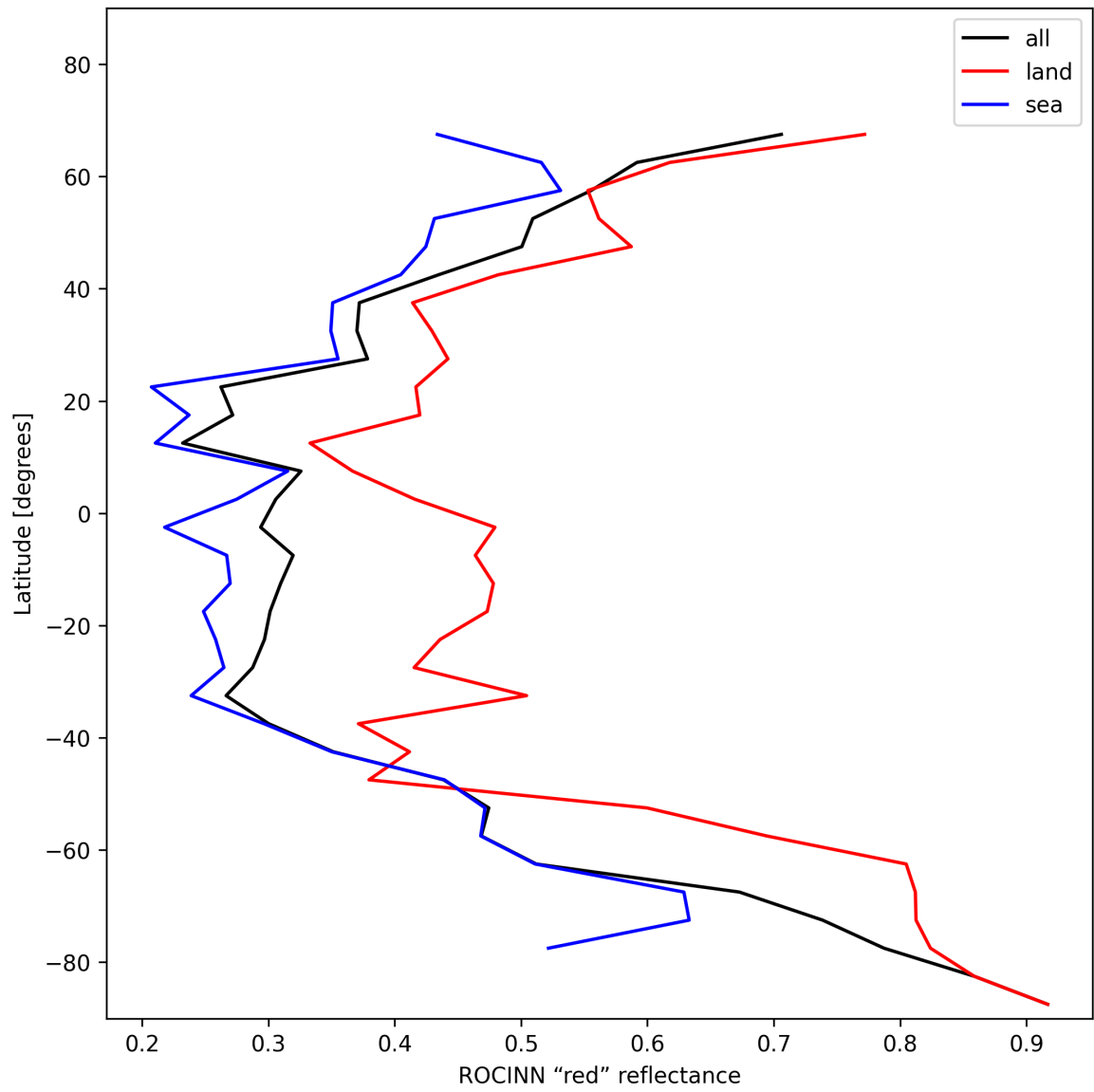


Figure 35: Zonal average of “ROCINN “red” reflectance” for 2024-12-21 to 2024-12-22.

8 Histograms

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

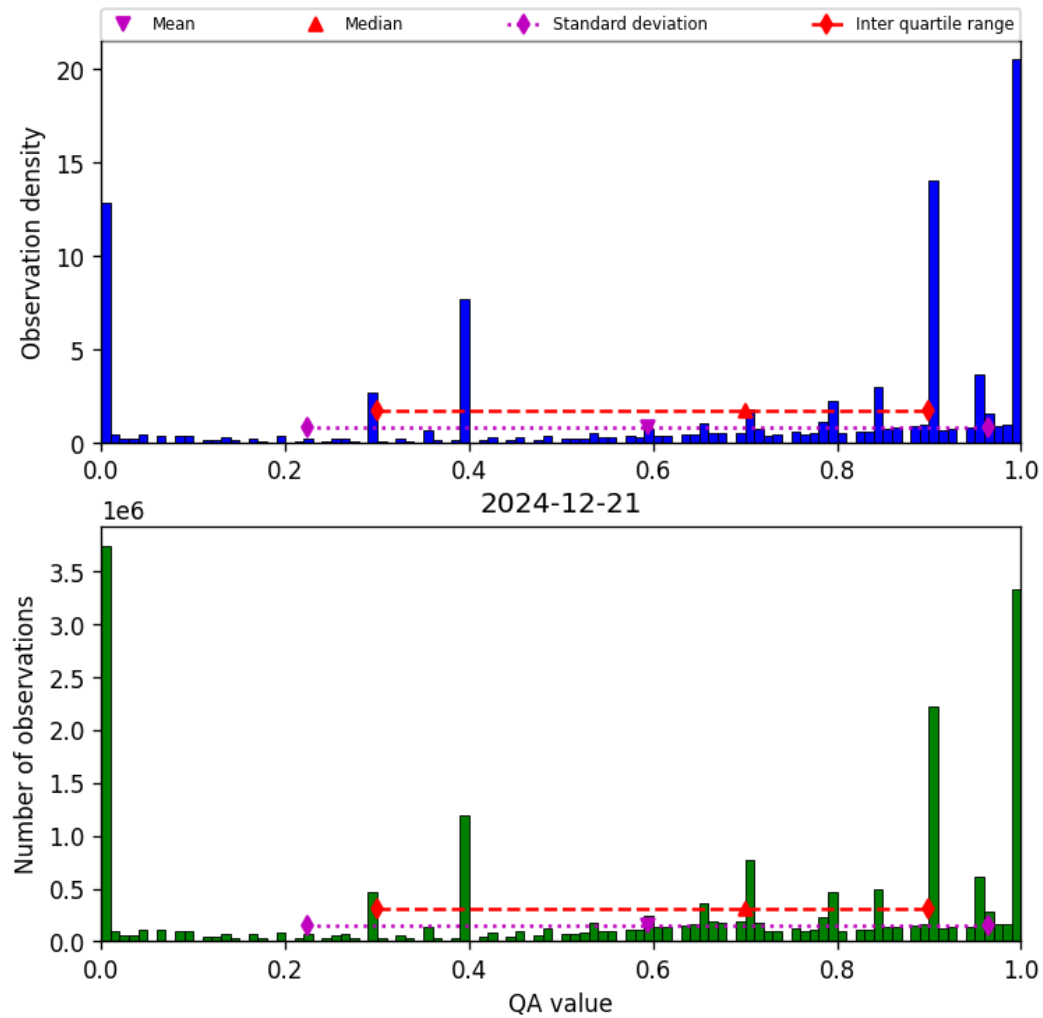


Figure 36: Histogram of “QA value” for 2024-12-21 to 2024-12-22

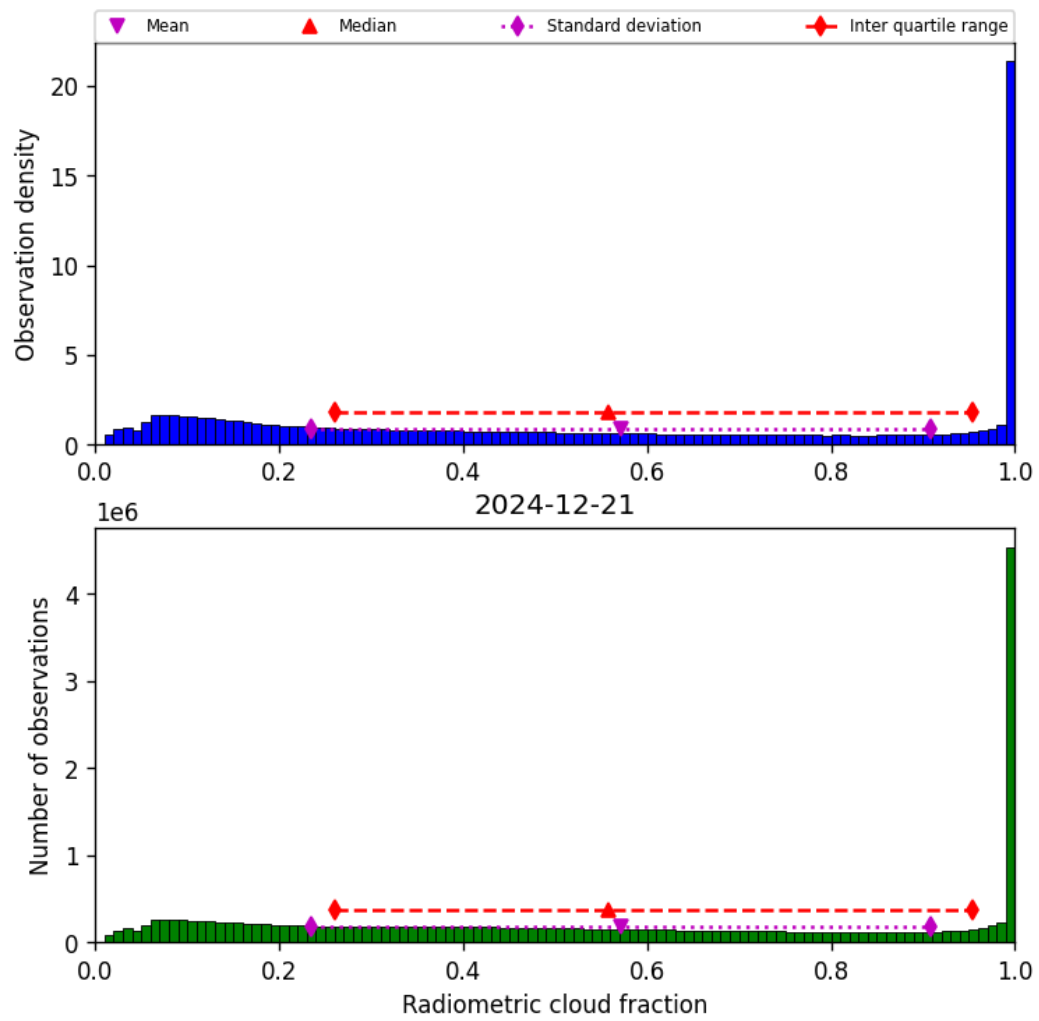


Figure 37: Histogram of “Radiometric cloud fraction” for 2024-12-21 to 2024-12-22

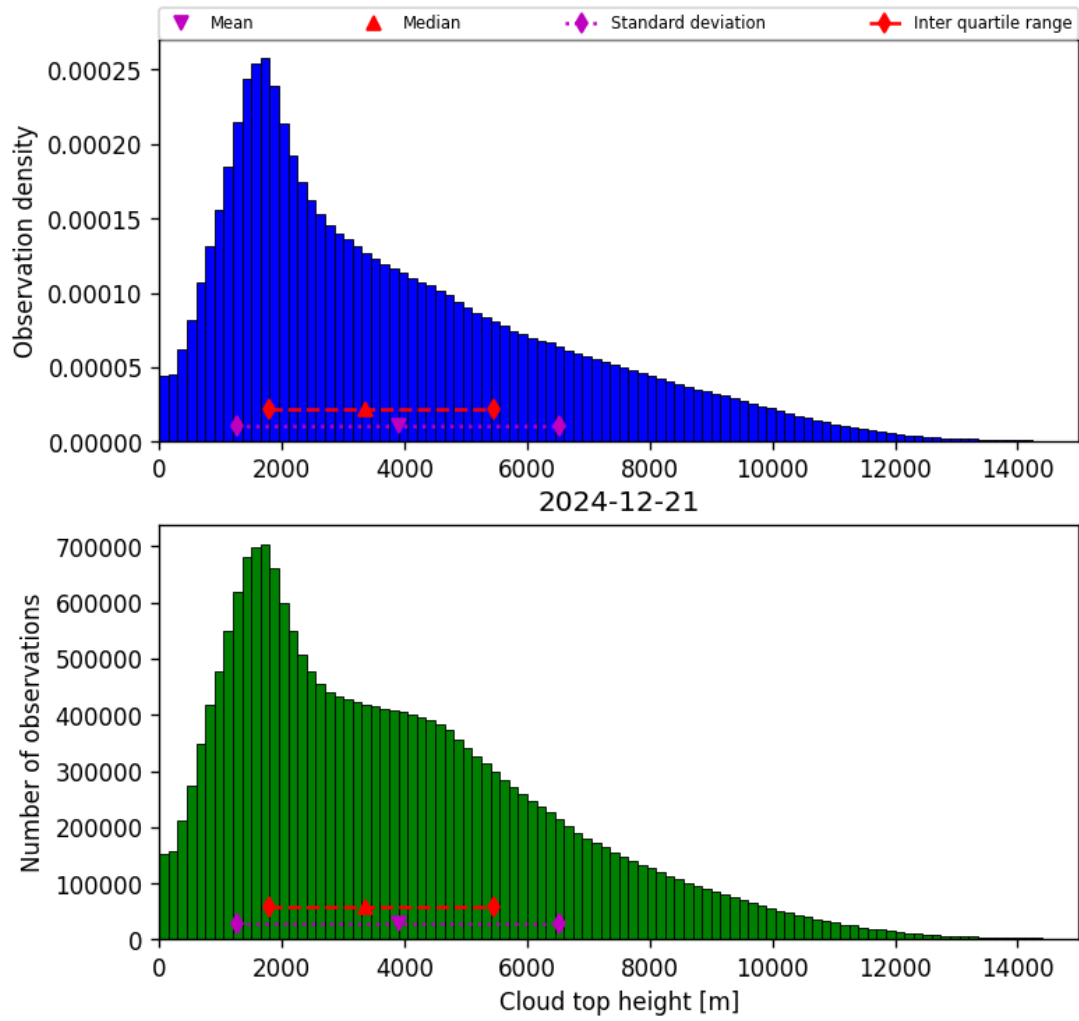


Figure 38: Histogram of “Cloud top height” for 2024-12-21 to 2024-12-22

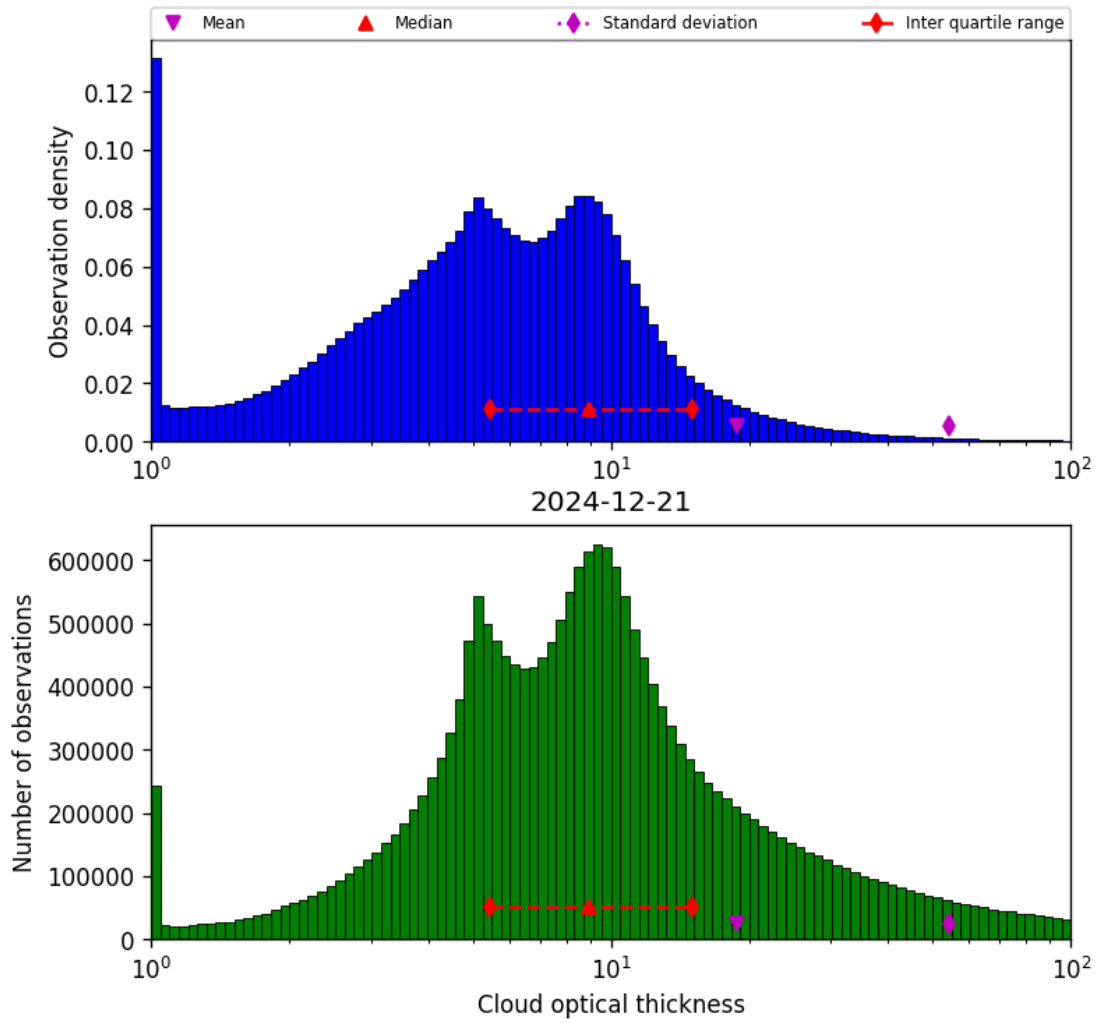


Figure 39: Histogram of “Cloud optical thickness” for 2024-12-21 to 2024-12-22

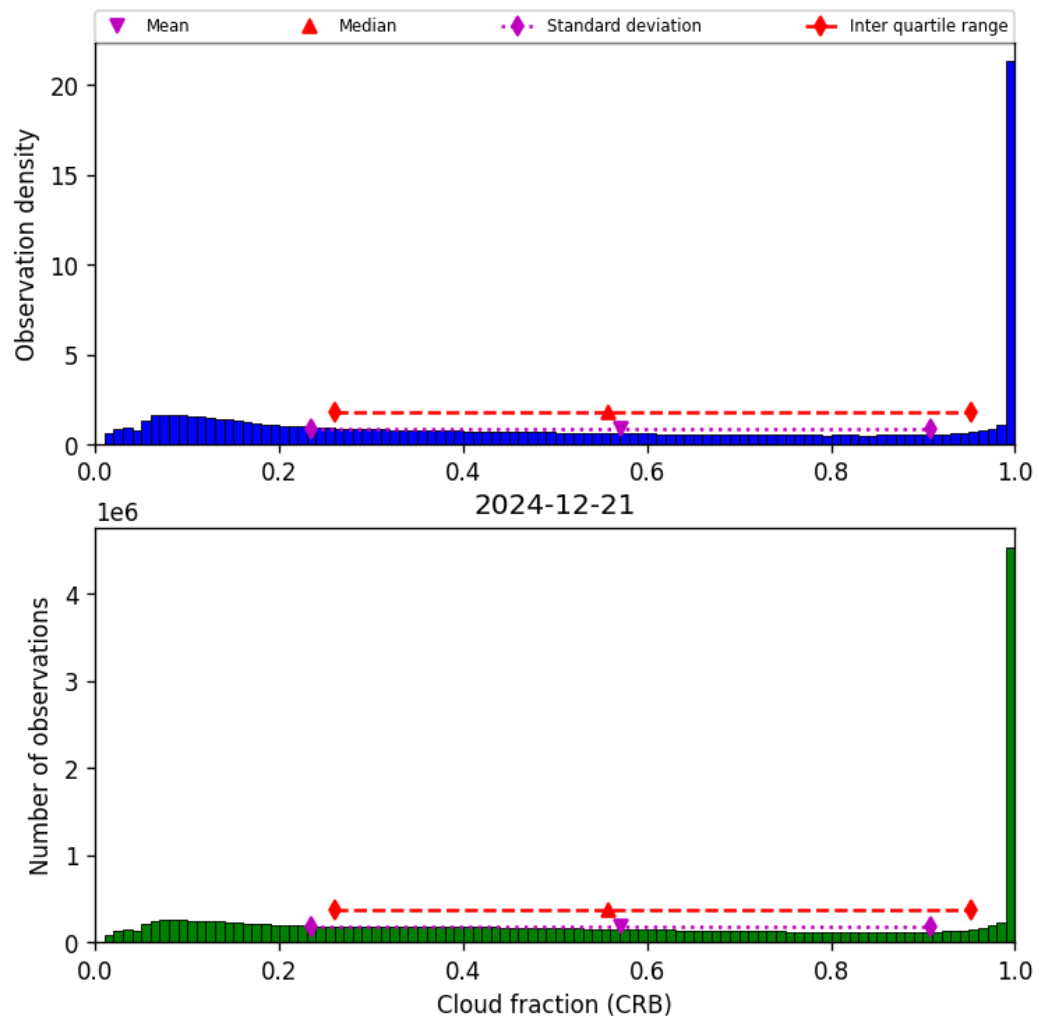


Figure 40: Histogram of “Cloud fraction (CRB)” for 2024-12-21 to 2024-12-22

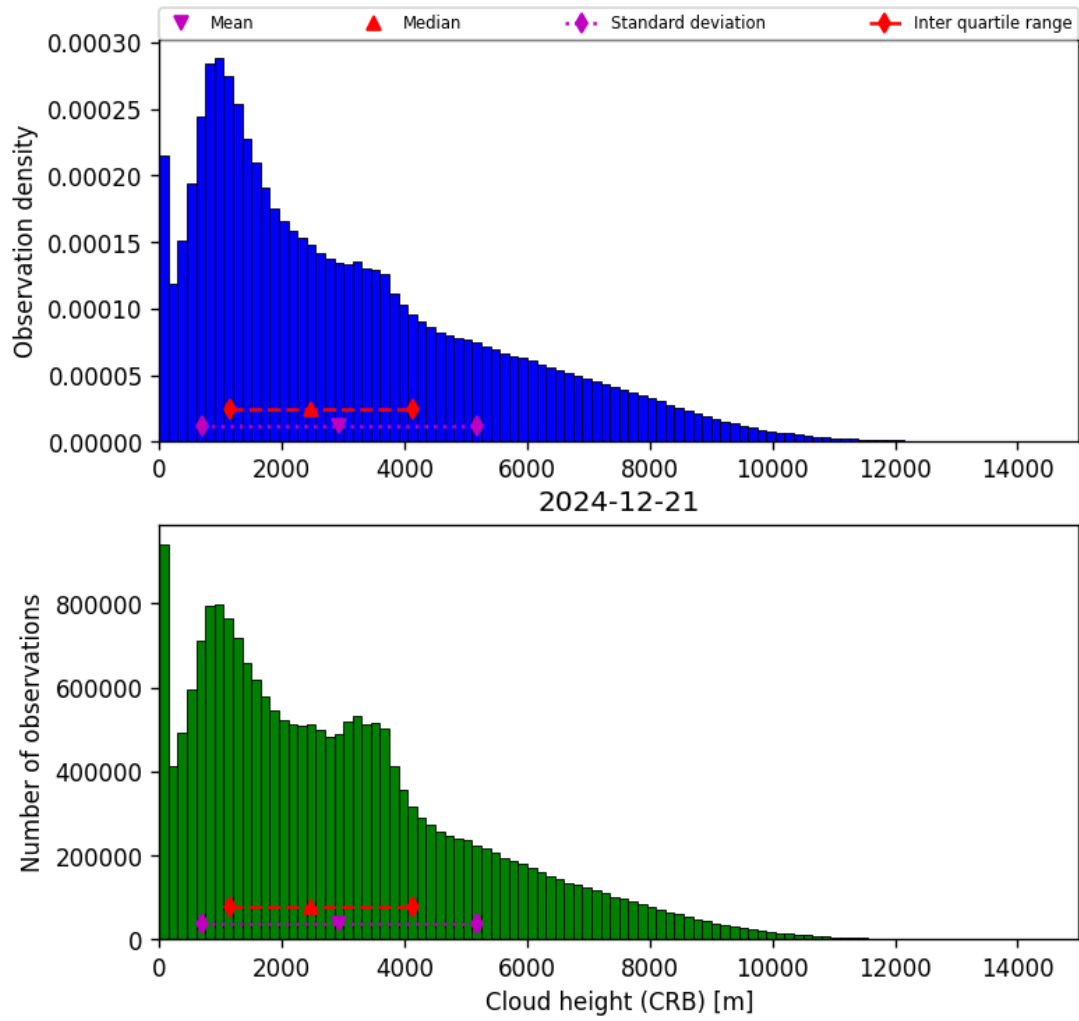


Figure 41: Histogram of “Cloud height (CRB)” for 2024-12-21 to 2024-12-22

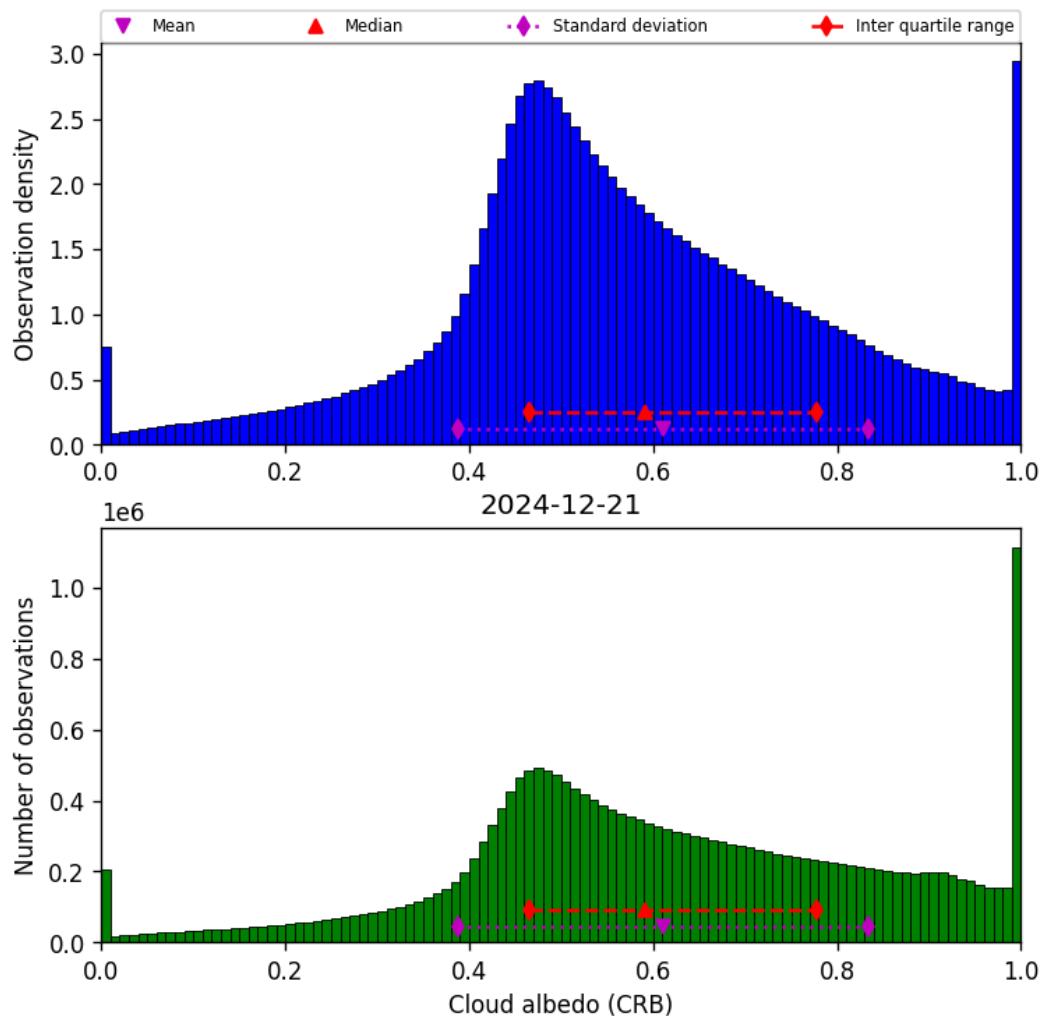


Figure 42: Histogram of “Cloud albedo (CRB)” for 2024-12-21 to 2024-12-22

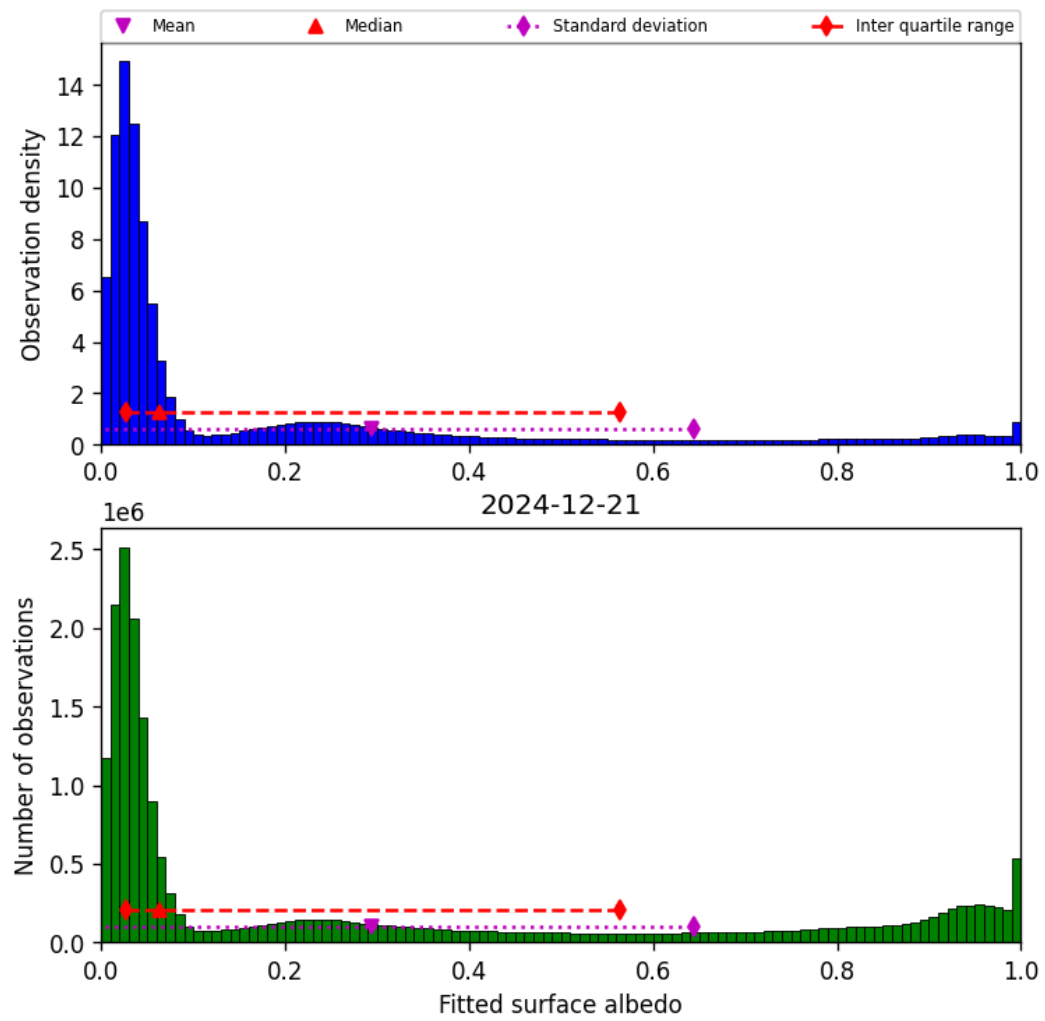


Figure 43: Histogram of “Fitted surface albedo” for 2024-12-21 to 2024-12-22

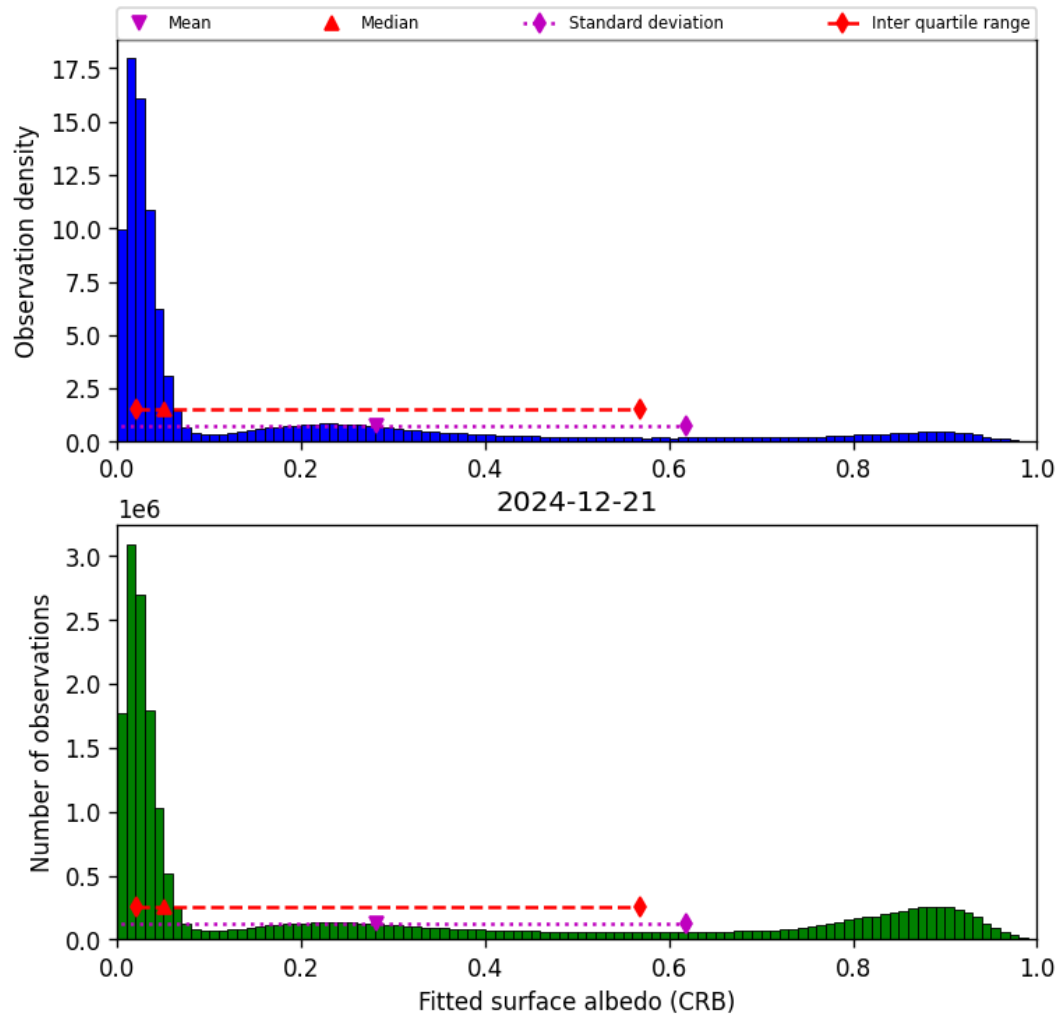


Figure 44: Histogram of “Fitted surface albedo (CRB)” for 2024-12-21 to 2024-12-22

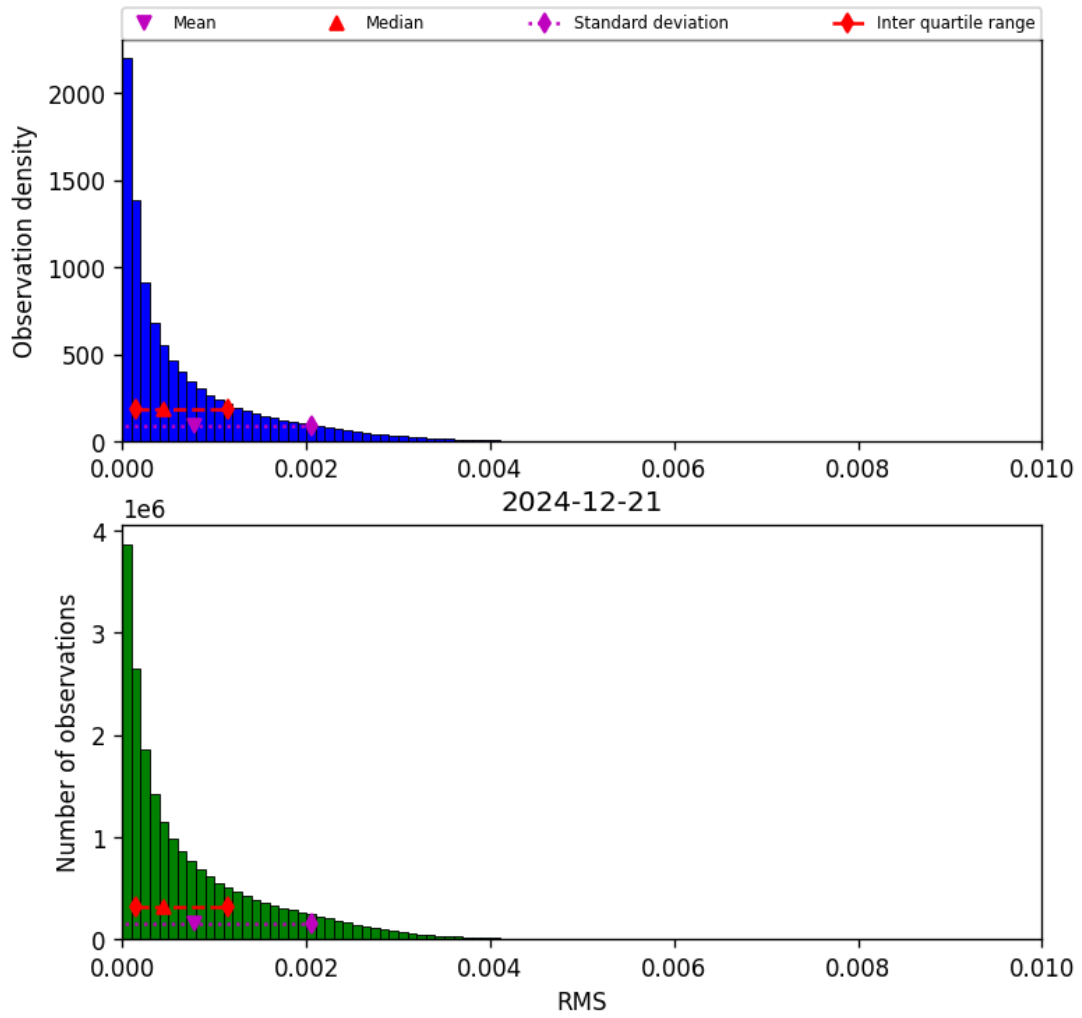


Figure 45: Histogram of “RMS” for 2024-12-21 to 2024-12-22

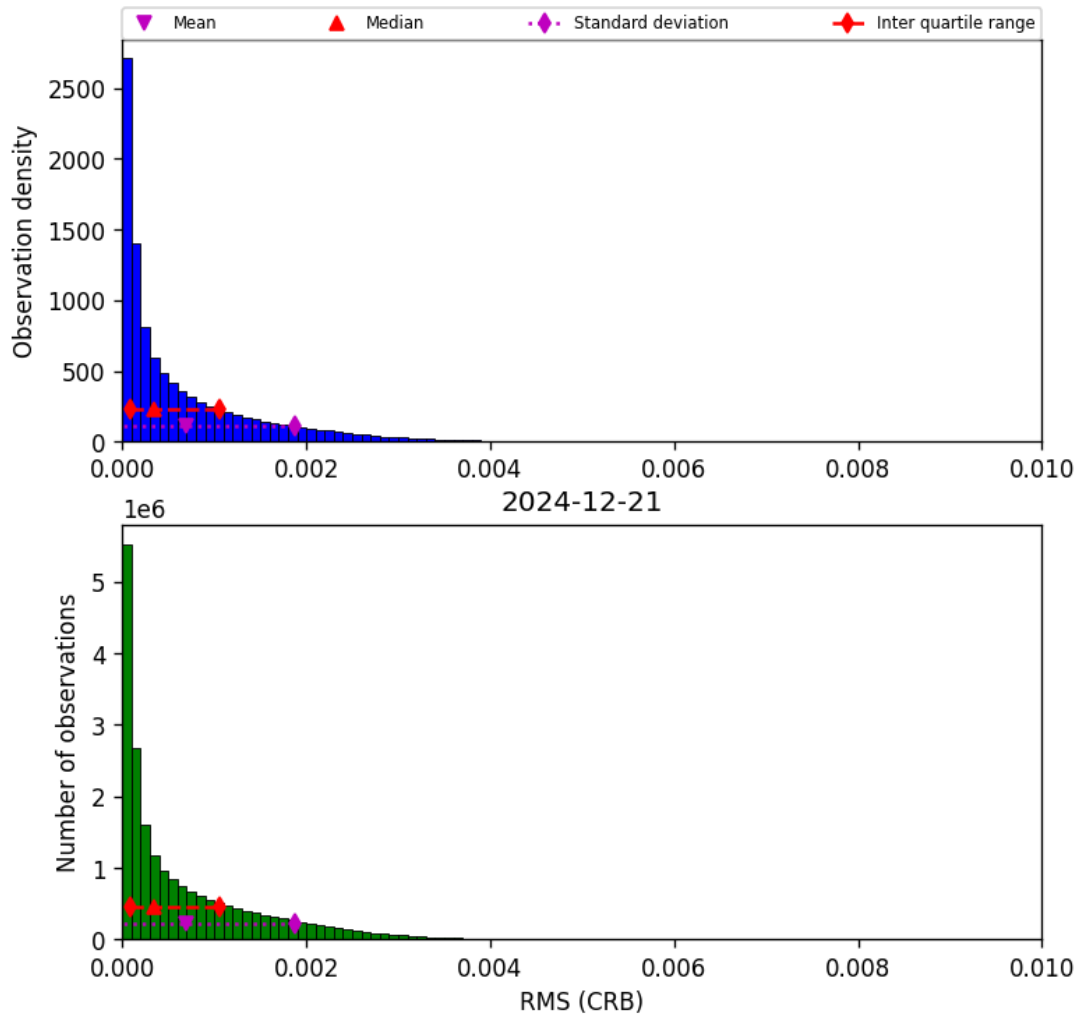


Figure 46: Histogram of "RMS (CRB)" for 2024-12-21 to 2024-12-22

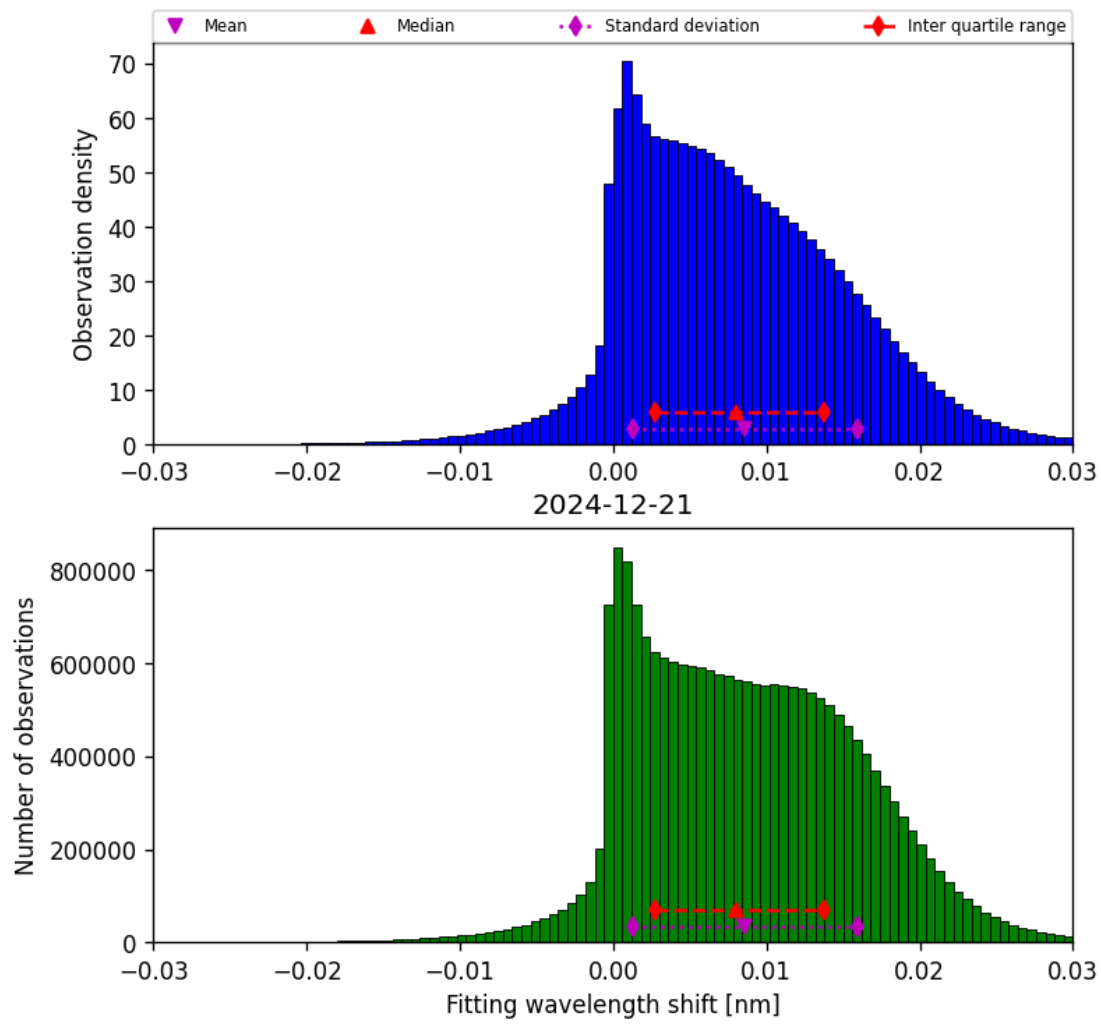


Figure 47: Histogram of “Fitting wavelength shift” for 2024-12-21 to 2024-12-22

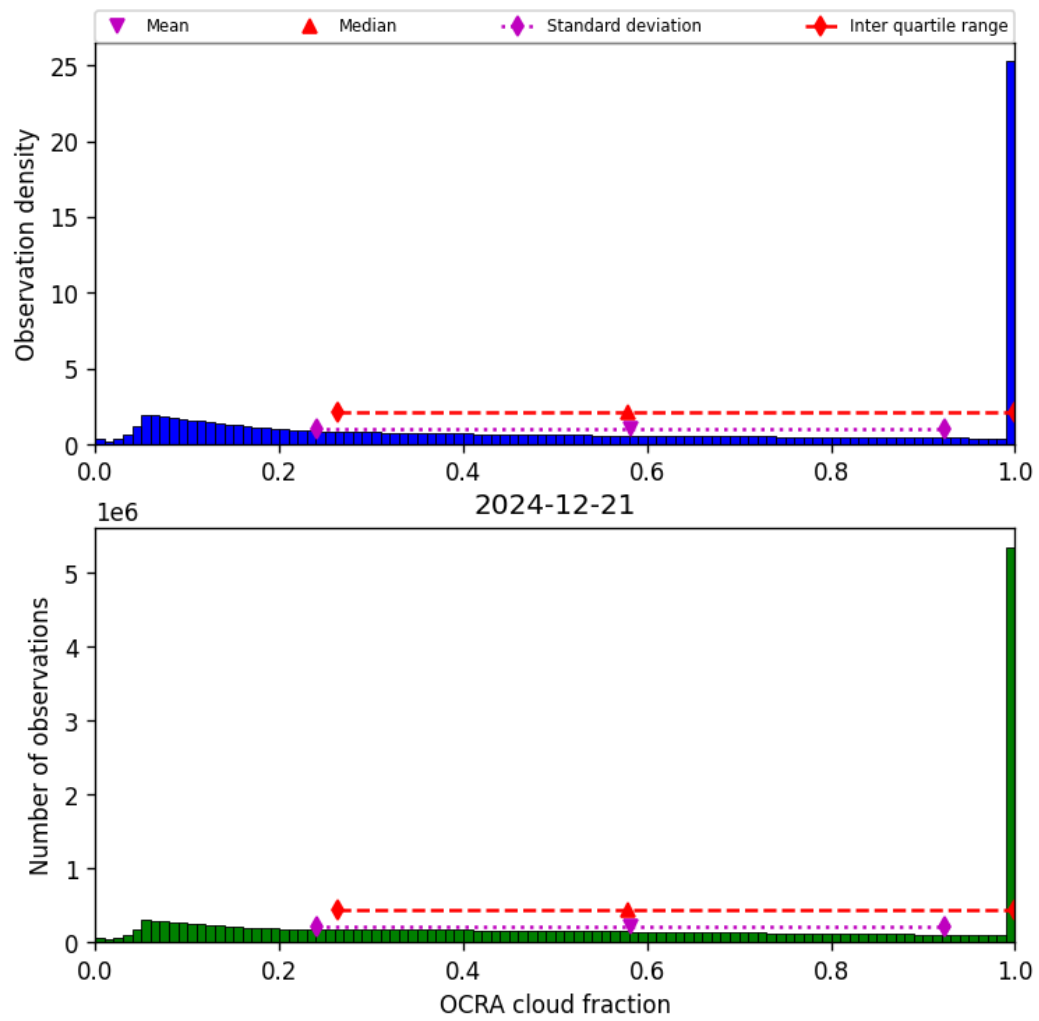


Figure 48: Histogram of “OCRA cloud fraction” for 2024-12-21 to 2024-12-22

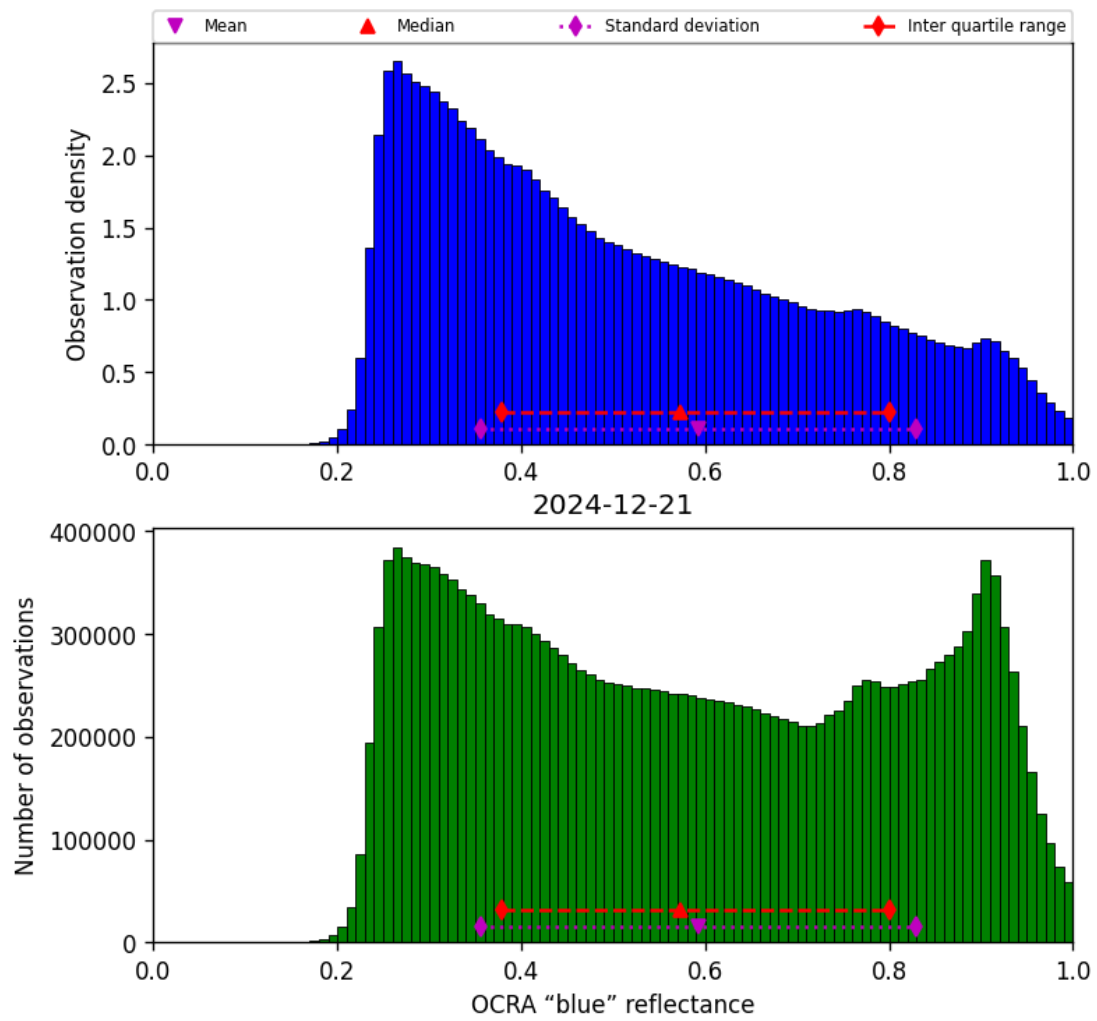


Figure 49: Histogram of “OCRA “blue” reflectance” for 2024-12-21 to 2024-12-22

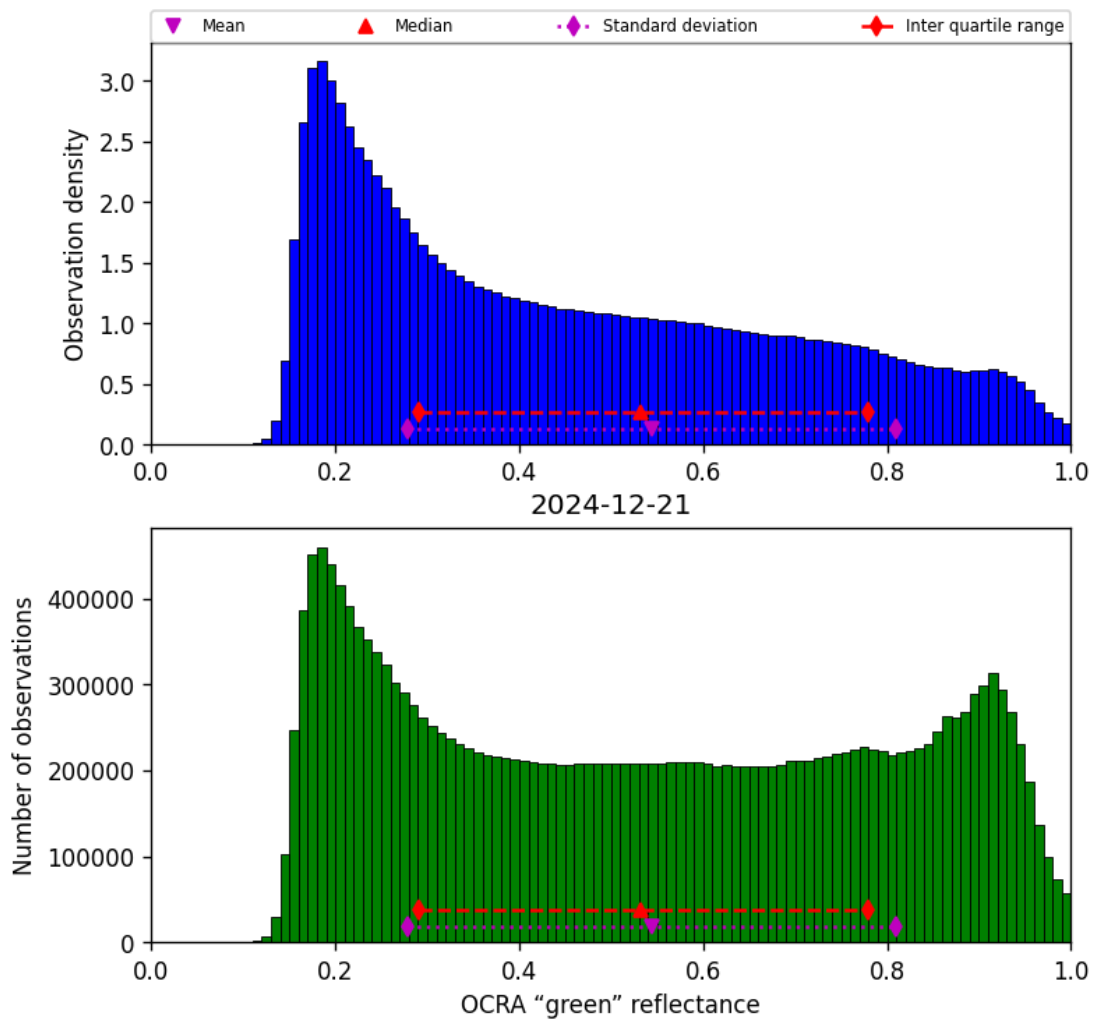


Figure 50: Histogram of “OCRA “green” reflectance” for 2024-12-21 to 2024-12-22

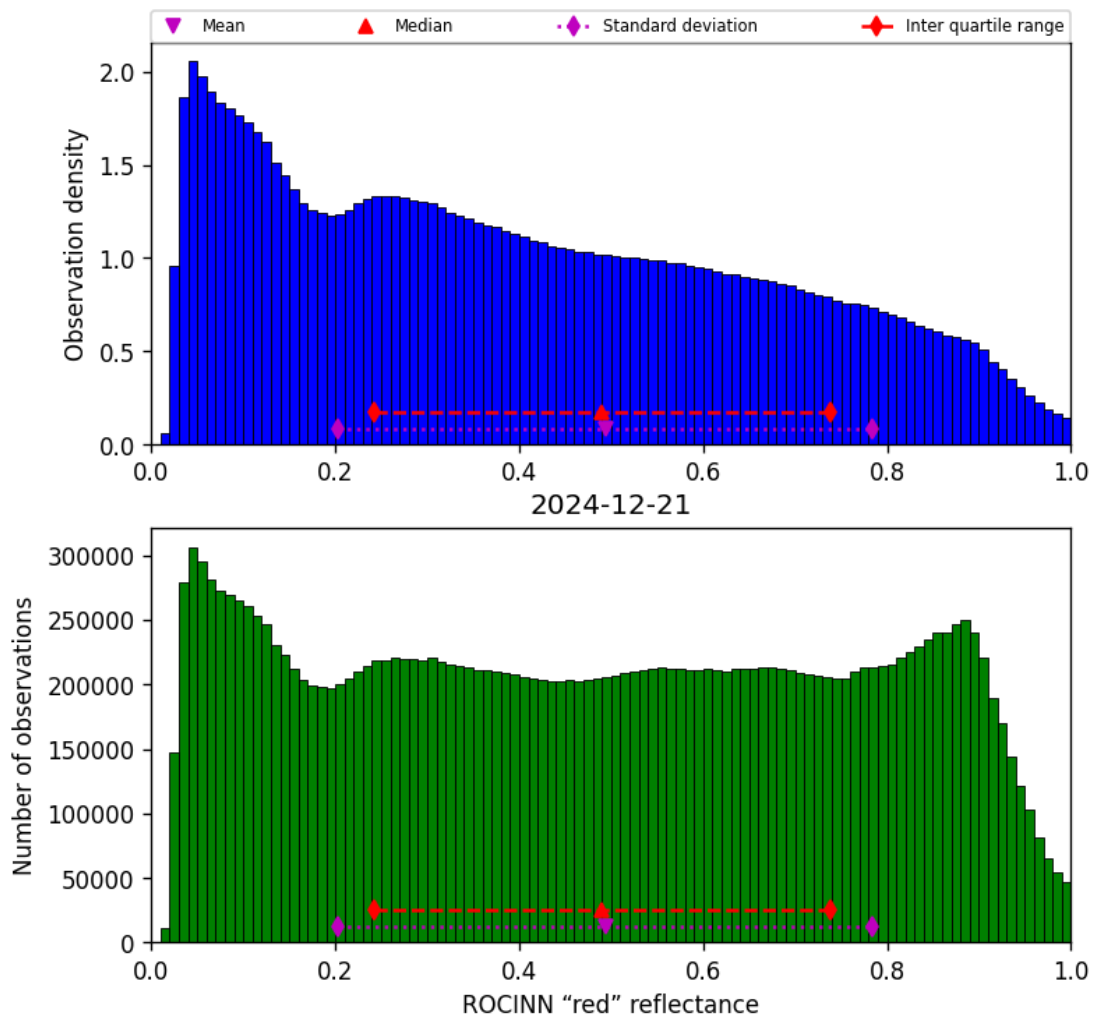


Figure 51: Histogram of “ROCINN “red” reflectance” for 2024-12-21 to 2024-12-22

9 Along track statistics

The TROPOMI instrument uses different binned detector rows for different viewing directions. In this section statistics are presented for each of the binned rows in the instrument.

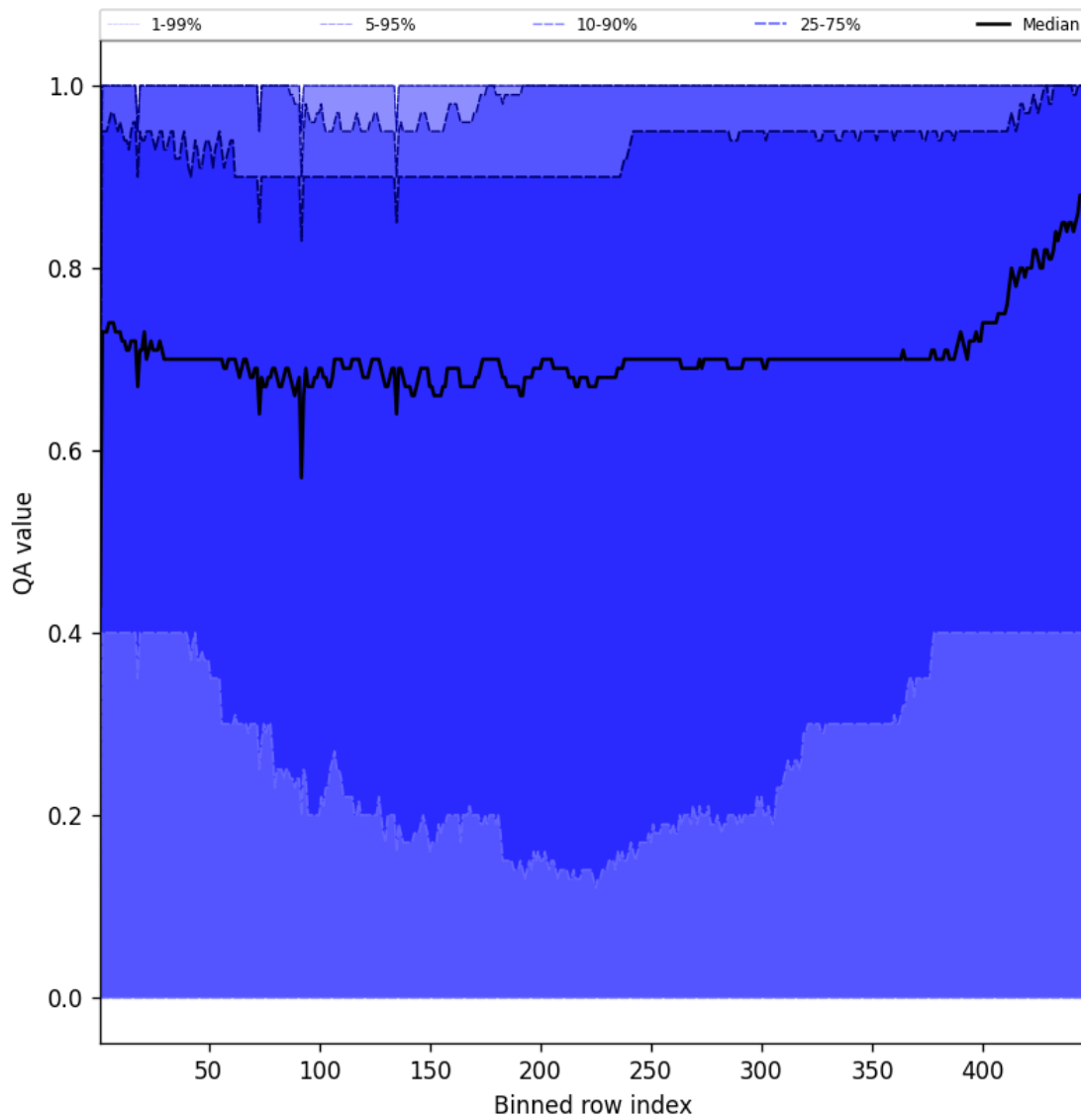


Figure 52: Along track statistics of “QA value” for 2024-12-21 to 2024-12-22

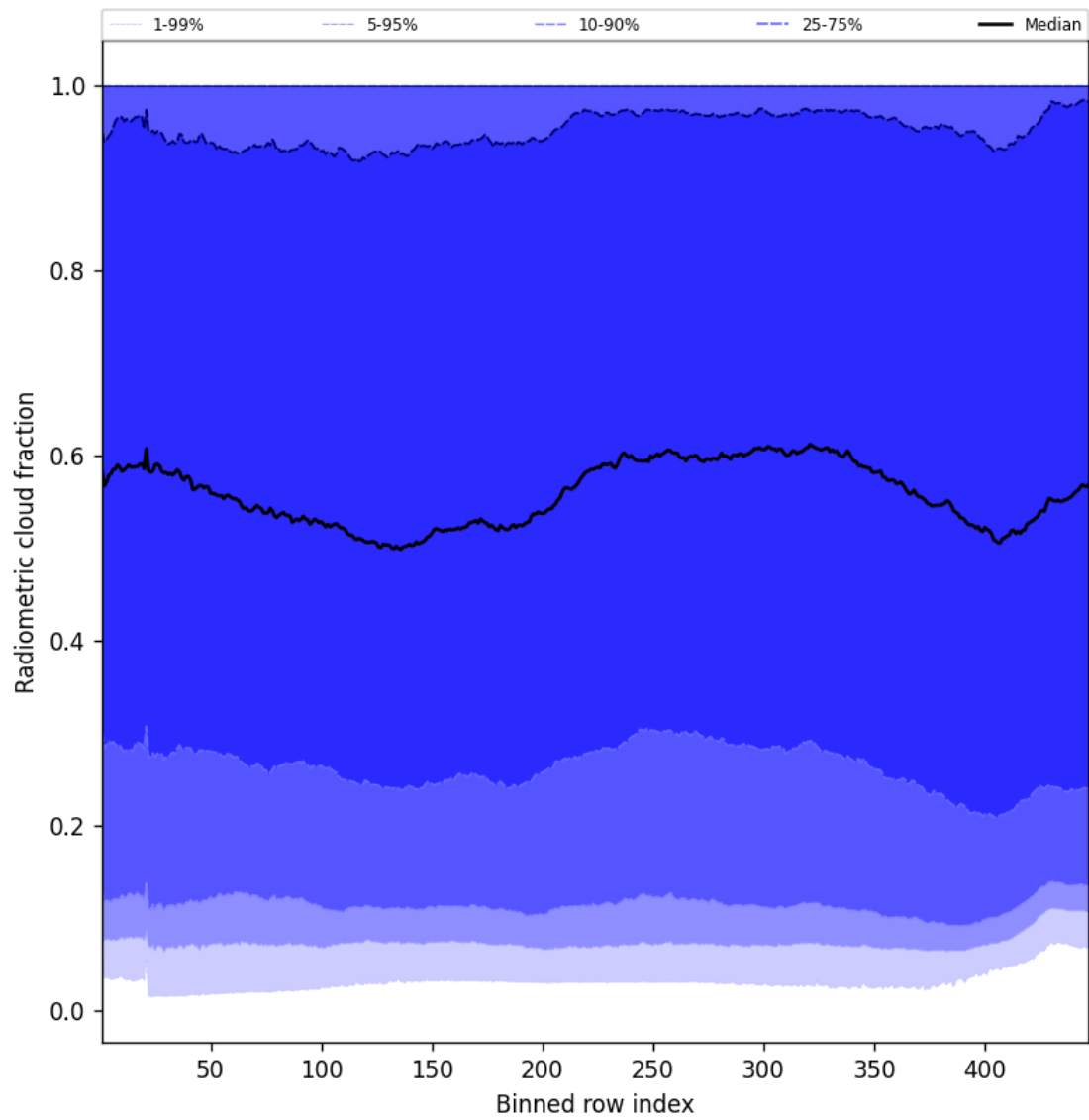


Figure 53: Along track statistics of “Radiometric cloud fraction” for 2024-12-21 to 2024-12-22

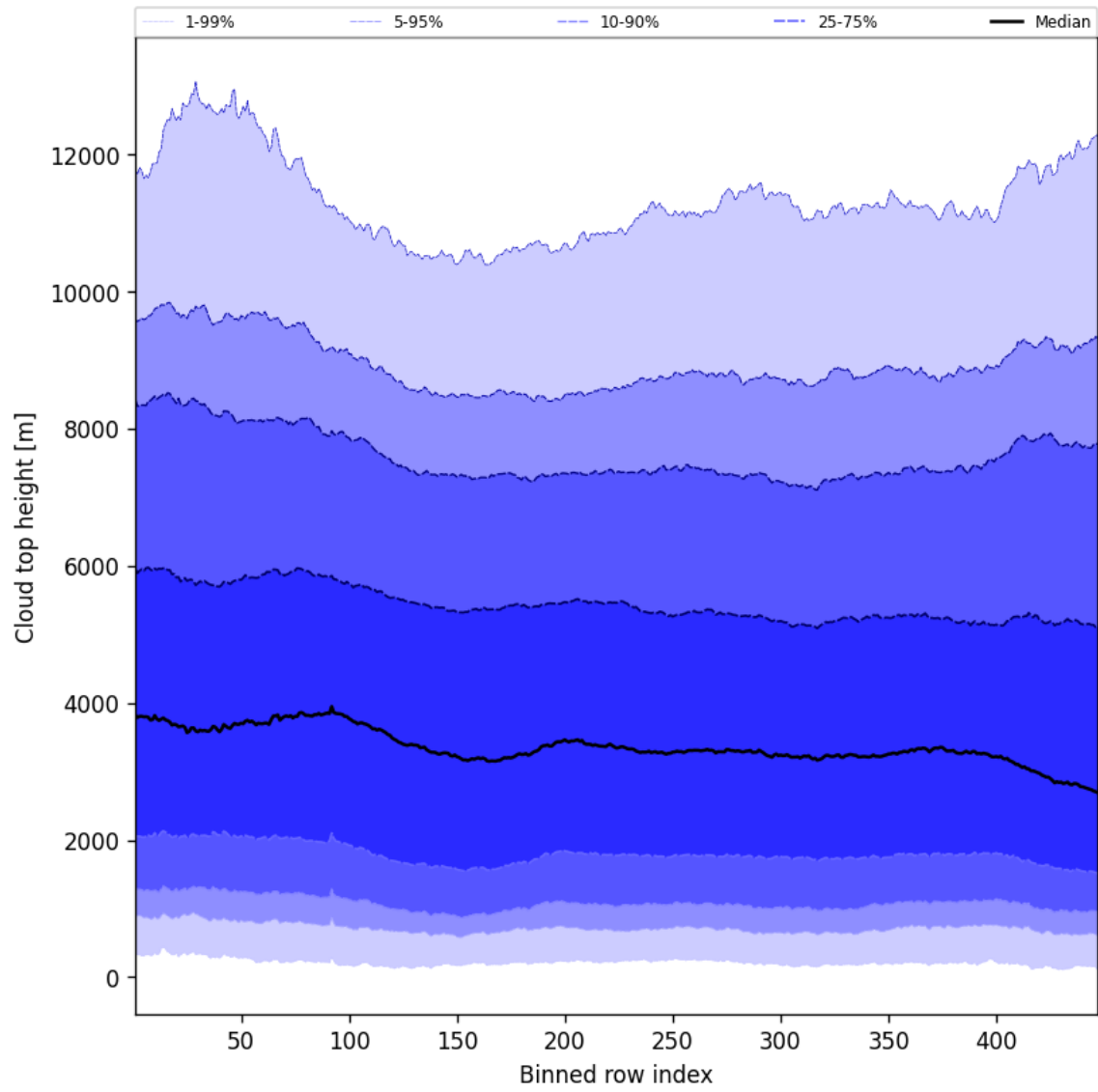


Figure 54: Along track statistics of “Cloud top height” for 2024-12-21 to 2024-12-22

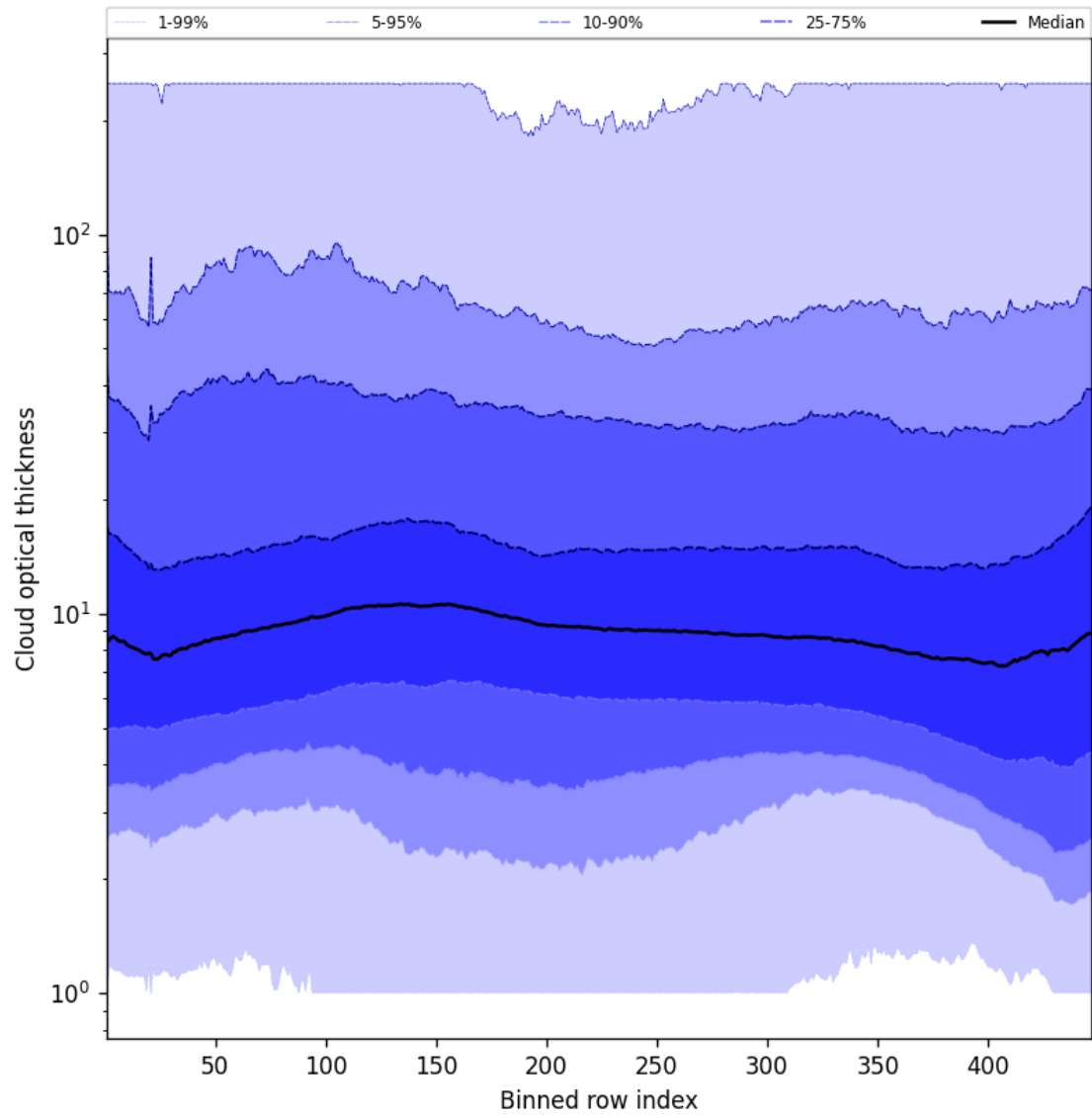


Figure 55: Along track statistics of “Cloud optical thickness” for 2024-12-21 to 2024-12-22

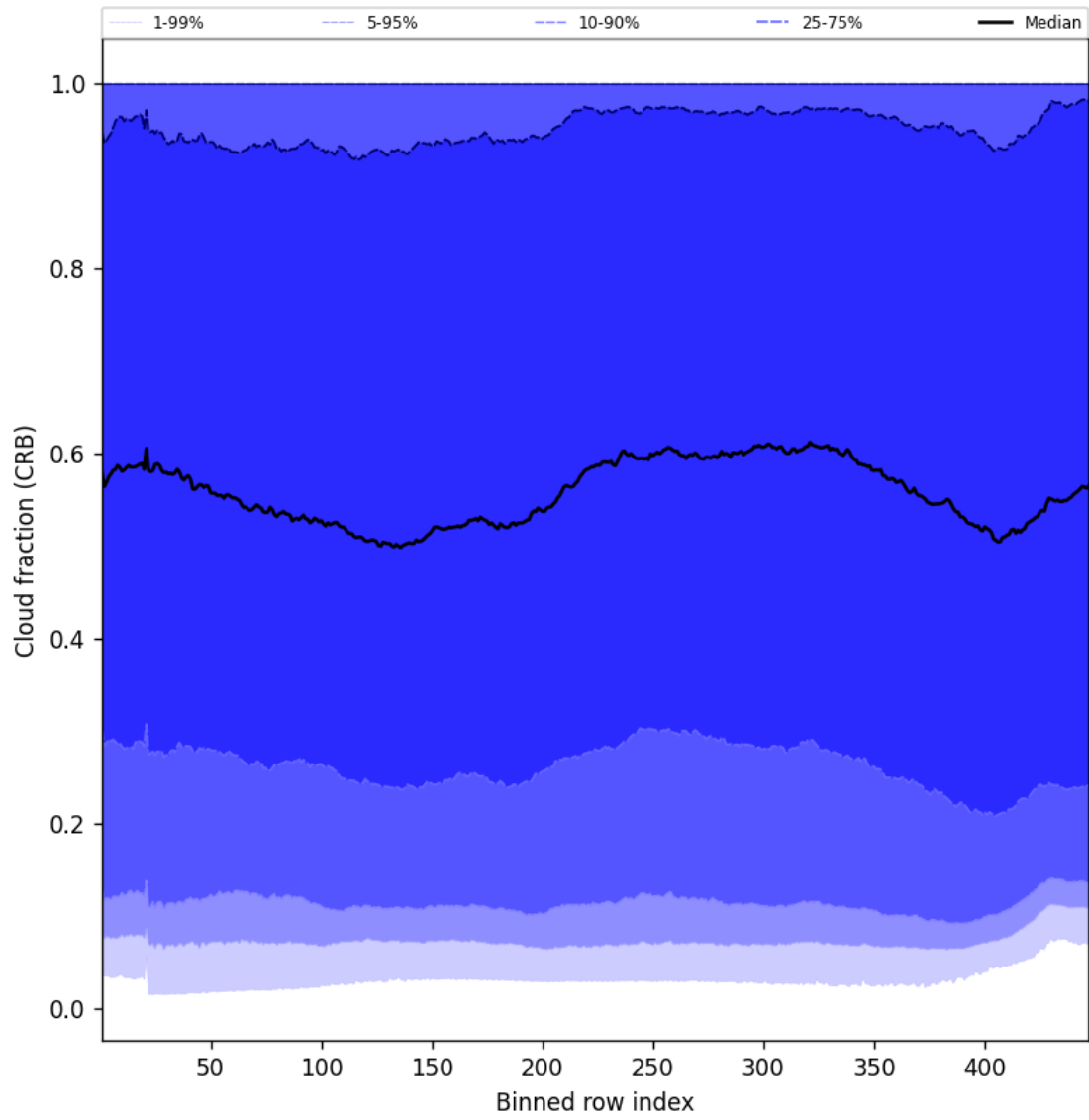


Figure 56: Along track statistics of “Cloud fraction (CRB)” for 2024-12-21 to 2024-12-22

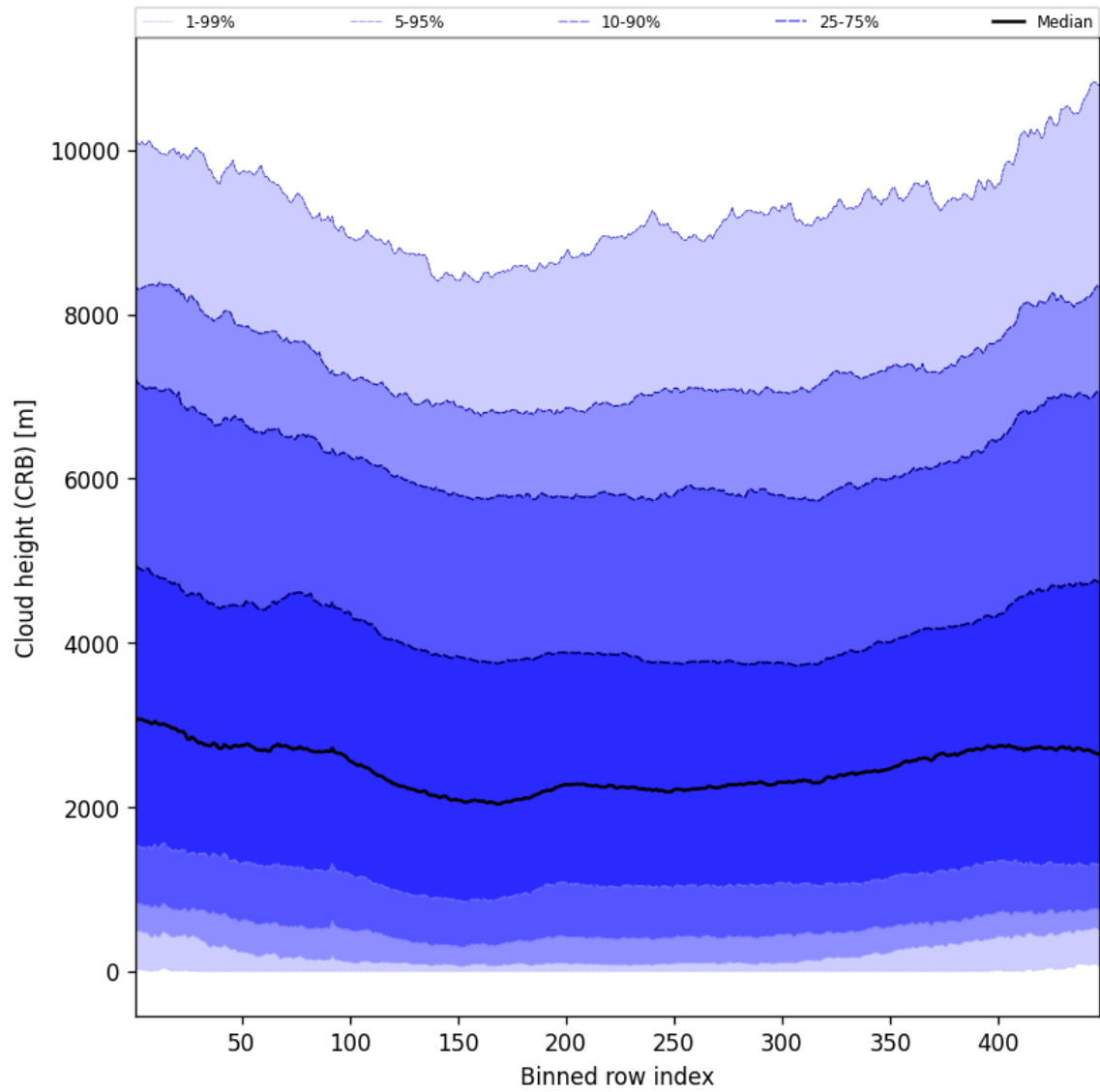


Figure 57: Along track statistics of “Cloud height (CRB)” for 2024-12-21 to 2024-12-22

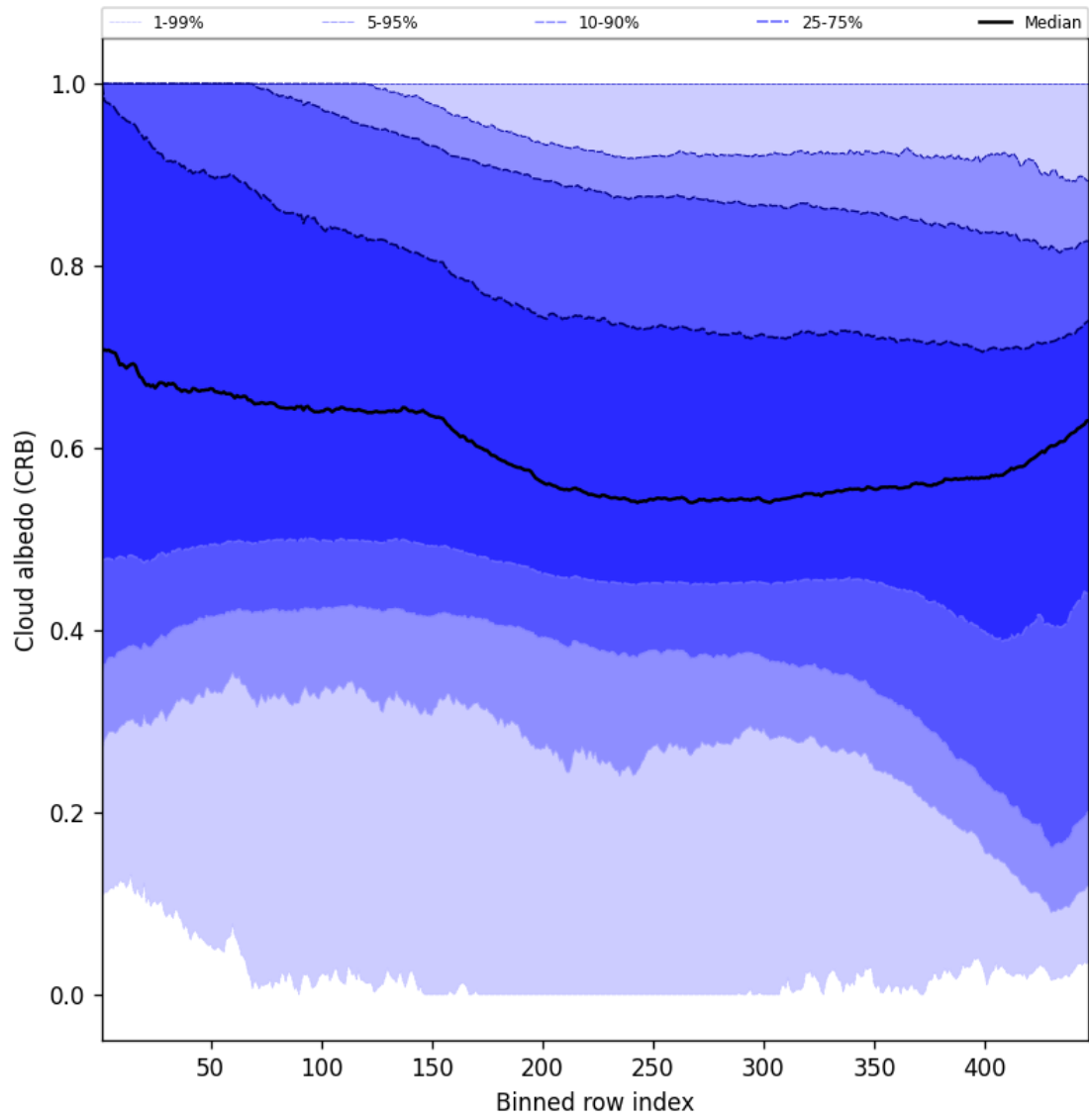


Figure 58: Along track statistics of “Cloud albedo (CRB)” for 2024-12-21 to 2024-12-22

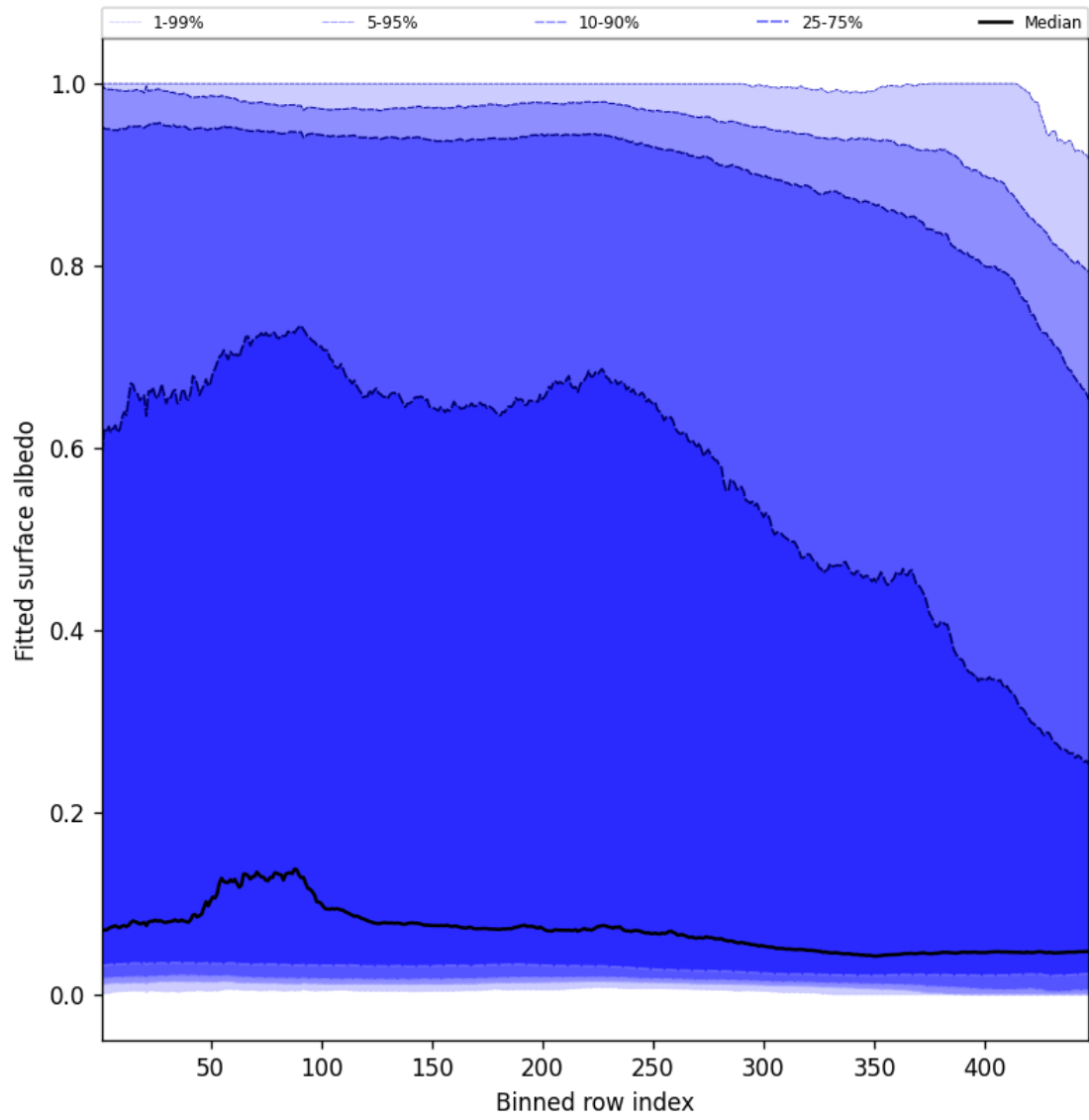


Figure 59: Along track statistics of “Fitted surface albedo” for 2024-12-21 to 2024-12-22

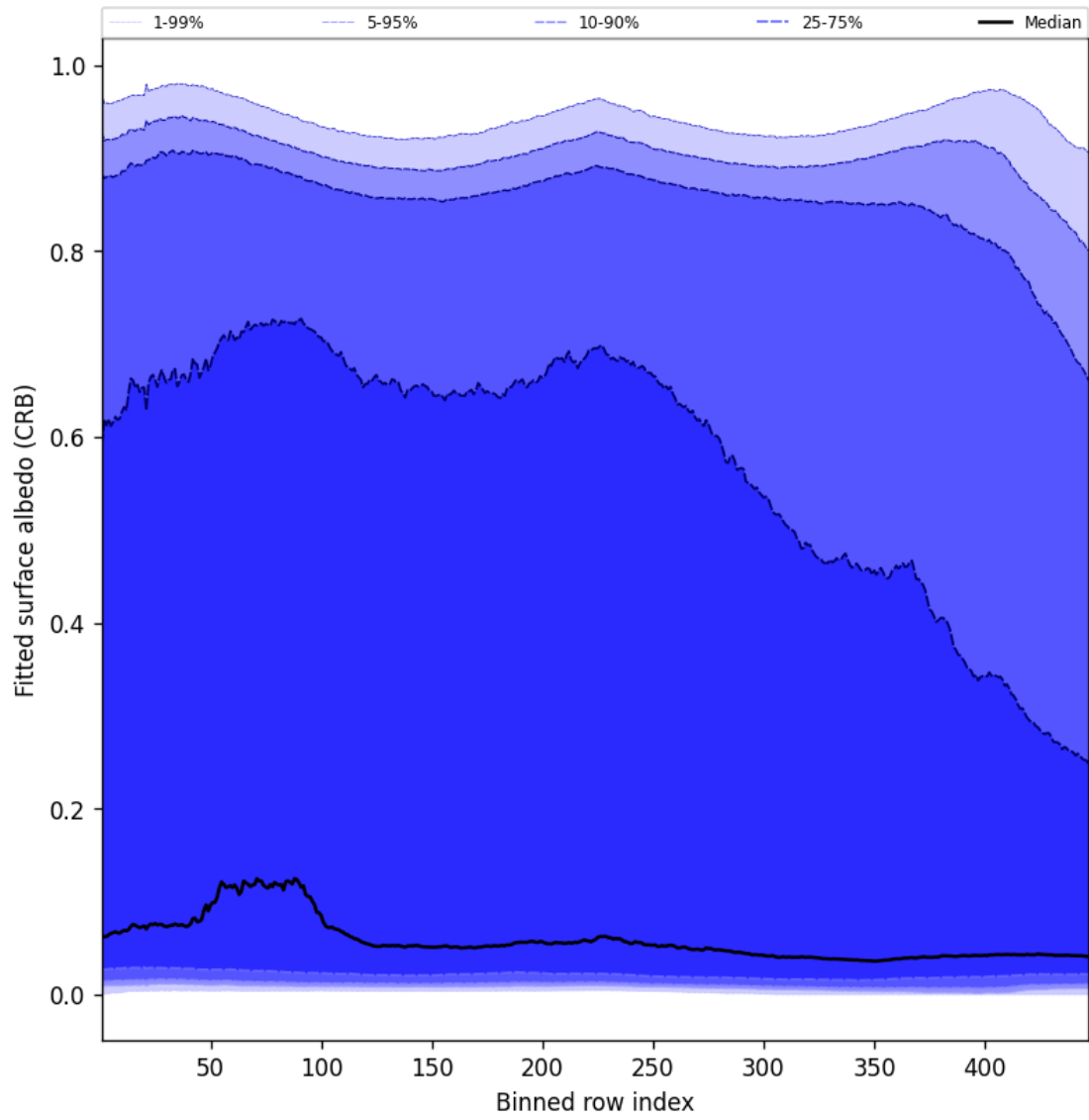


Figure 60: Along track statistics of “Fitted surface albedo (CRB)” for 2024-12-21 to 2024-12-22

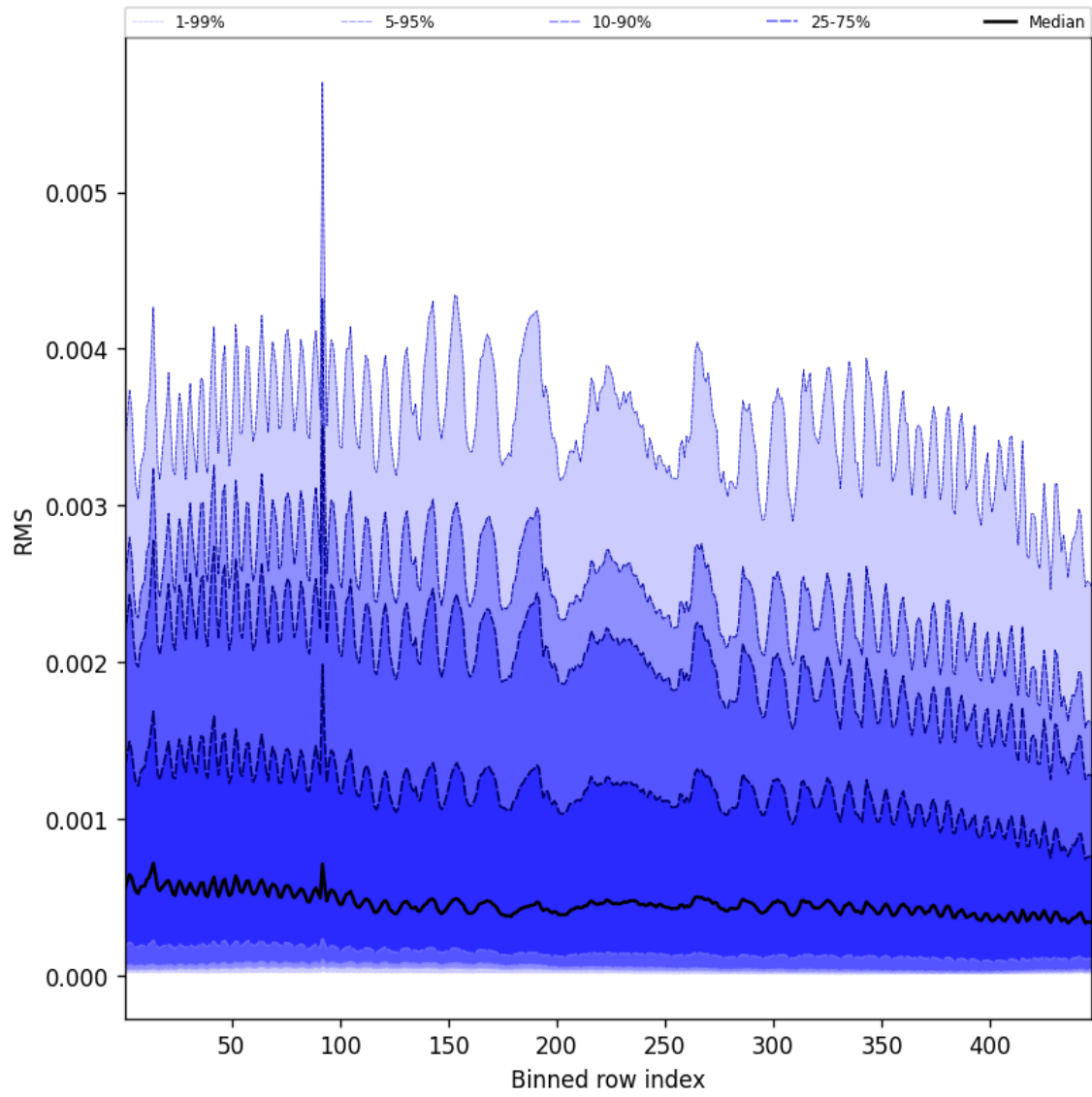


Figure 61: Along track statistics of “RMS” for 2024-12-21 to 2024-12-22

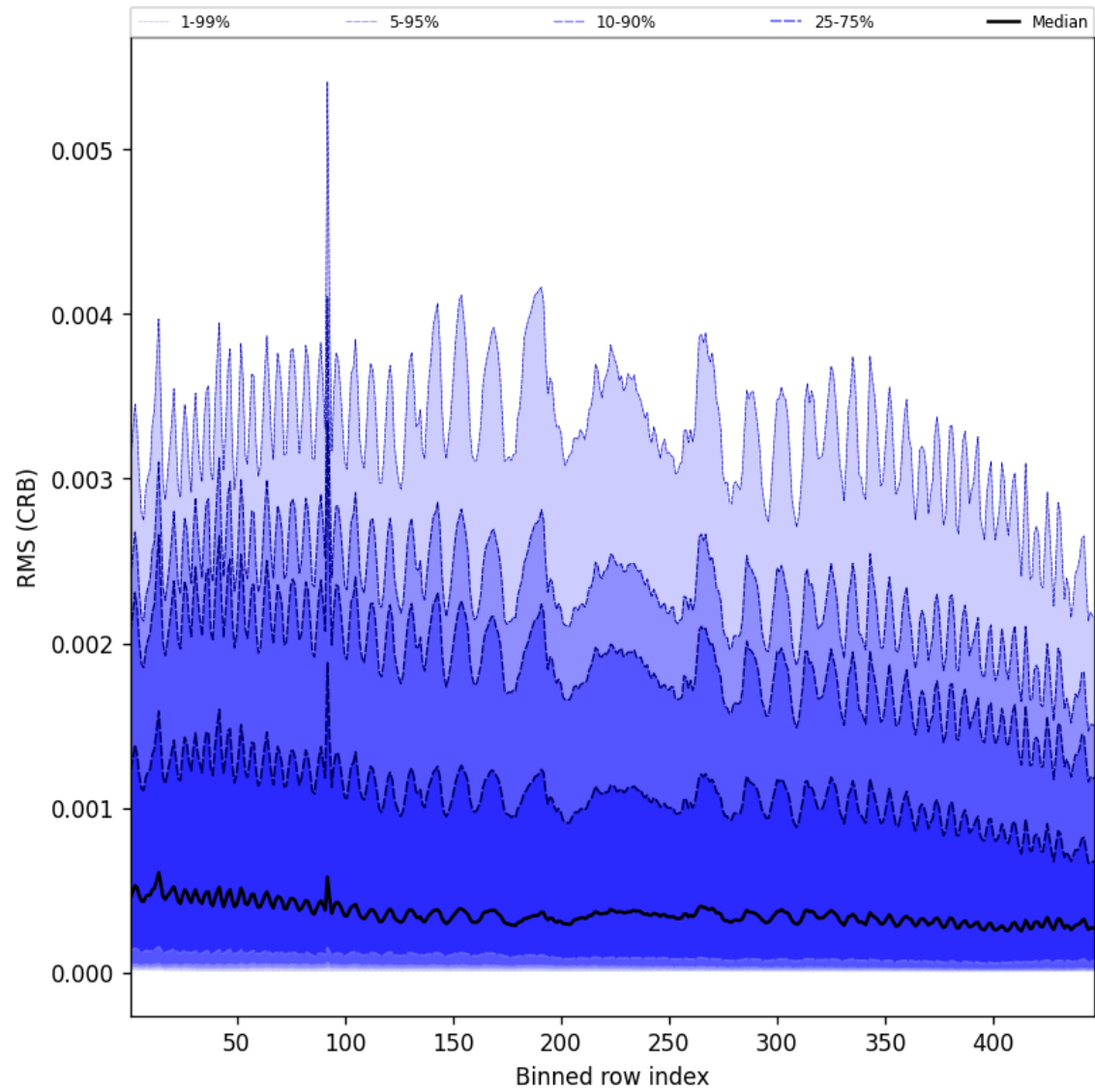


Figure 62: Along track statistics of “RMS (CRB)” for 2024-12-21 to 2024-12-22

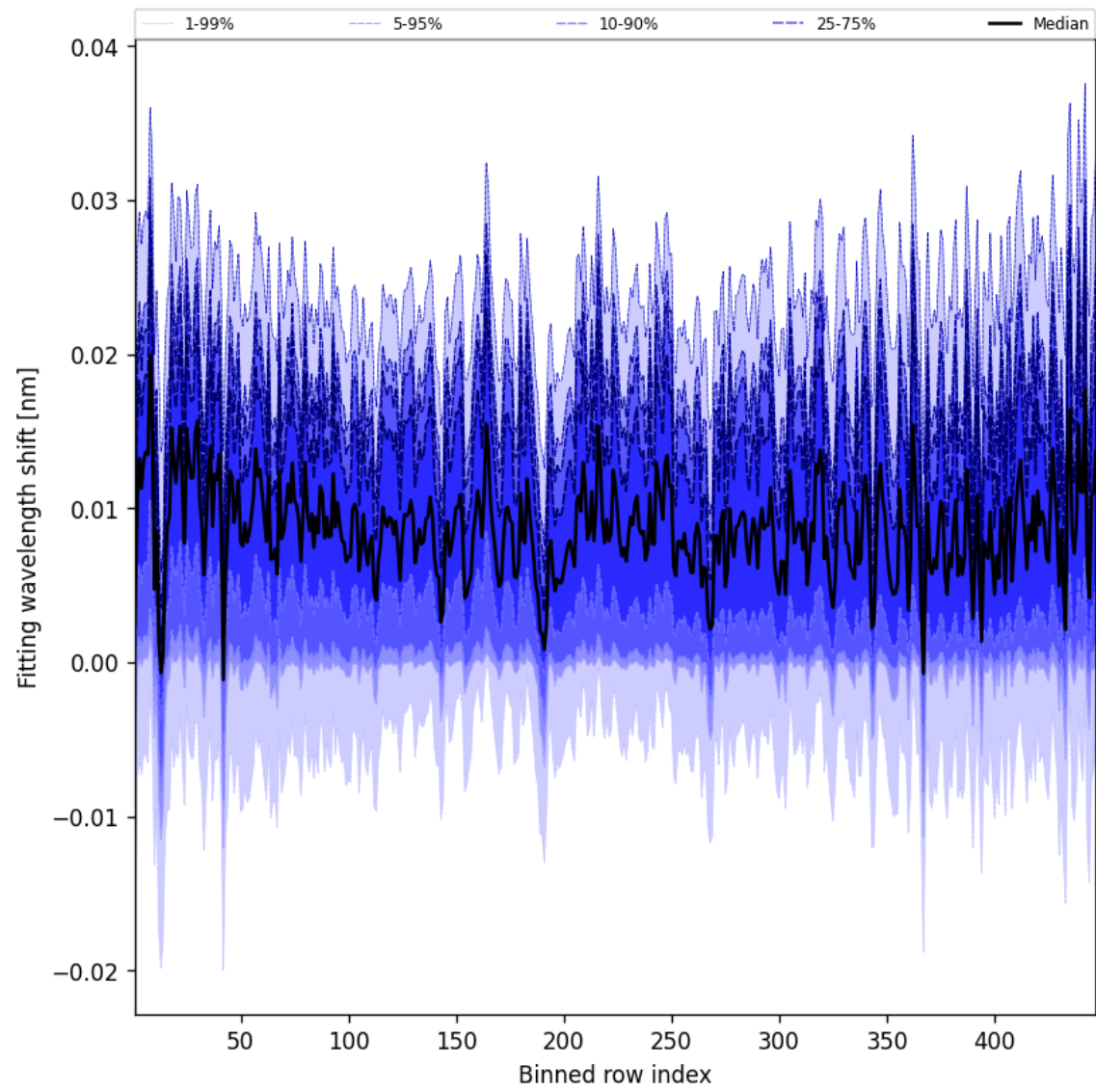


Figure 63: Along track statistics of “Fitting wavelength shift” for 2024-12-21 to 2024-12-22

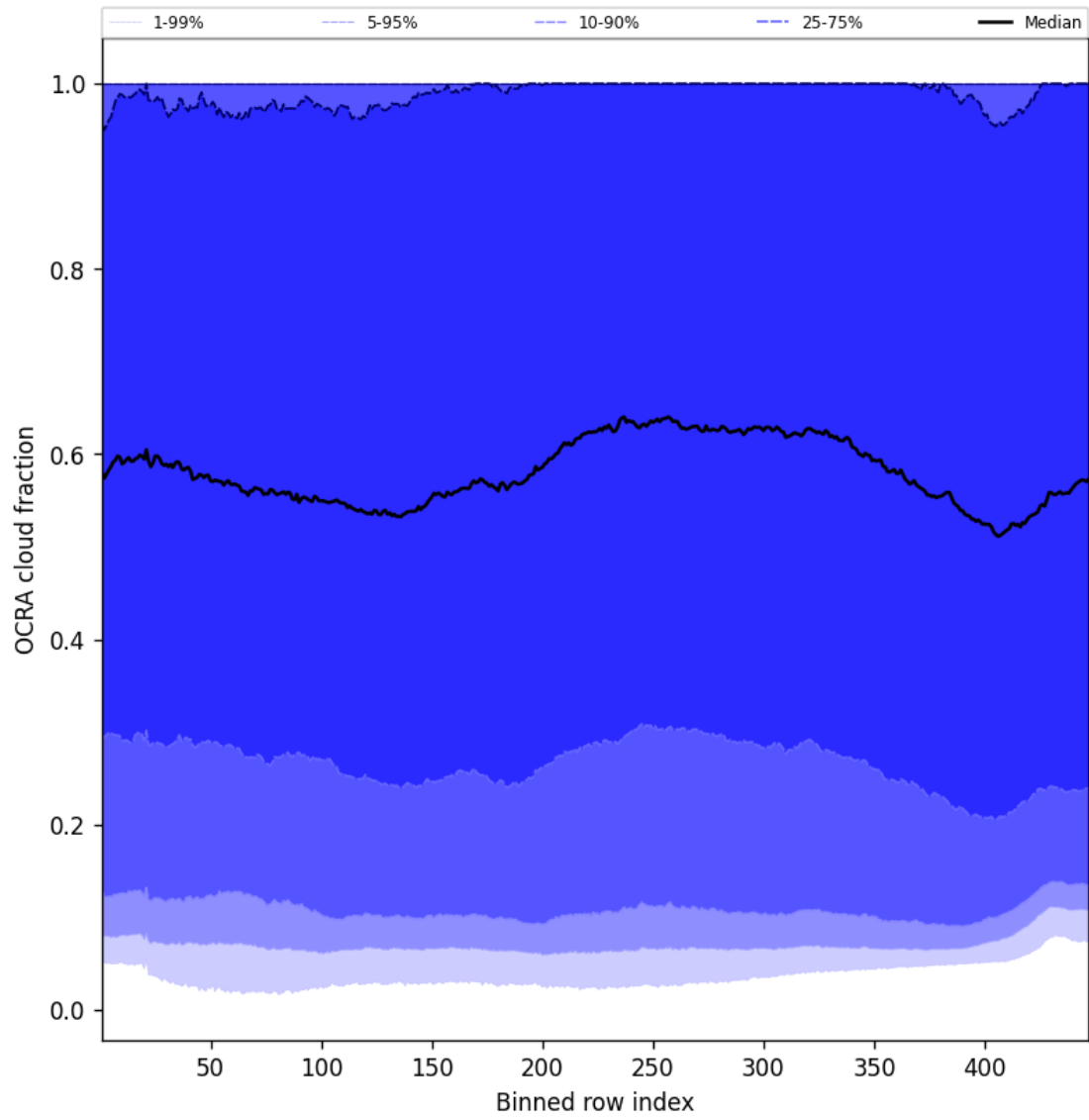


Figure 64: Along track statistics of “OCRA cloud fraction” for 2024-12-21 to 2024-12-22

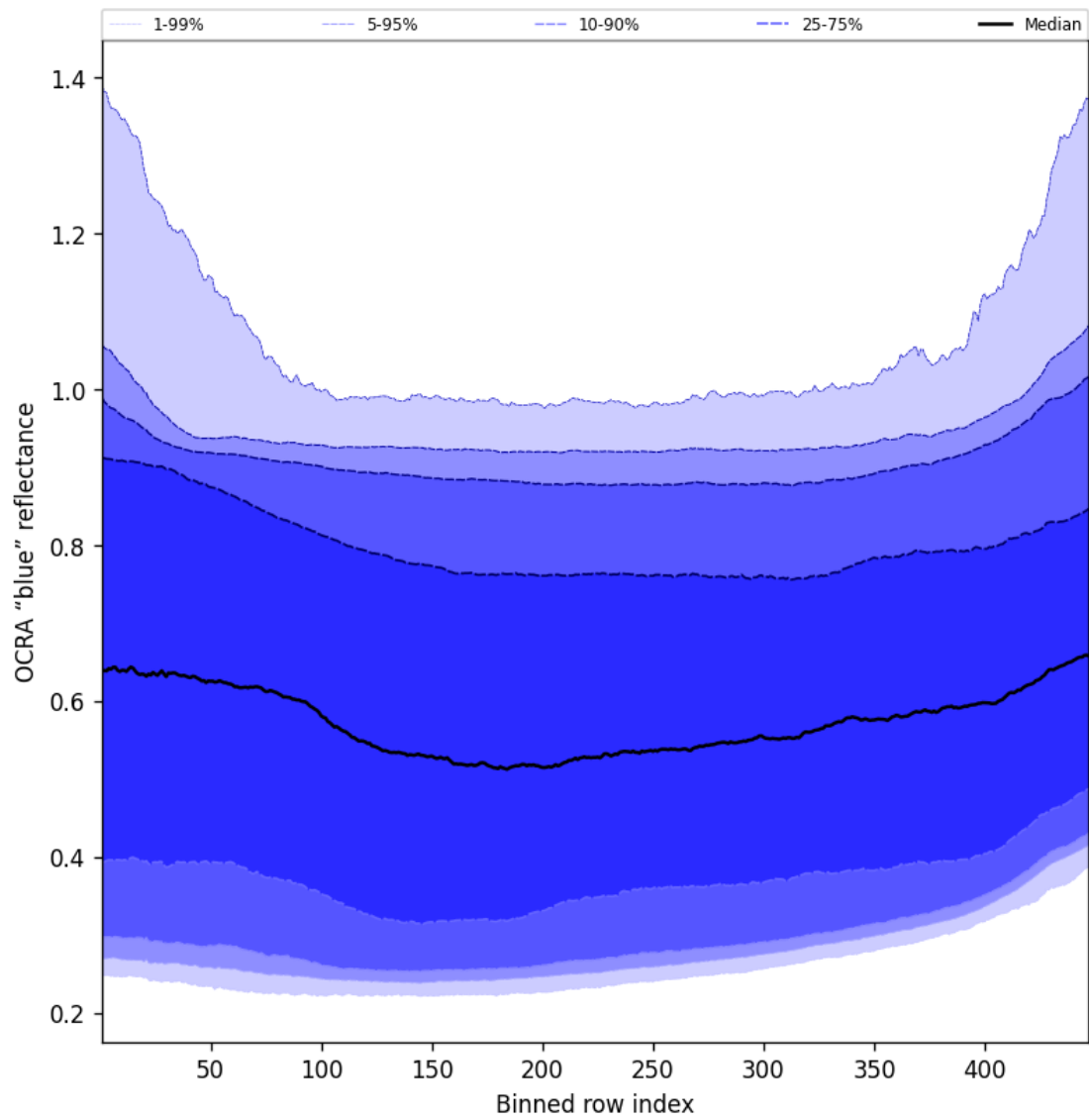


Figure 65: Along track statistics of “OCRA “blue” reflectance” for 2024-12-21 to 2024-12-22

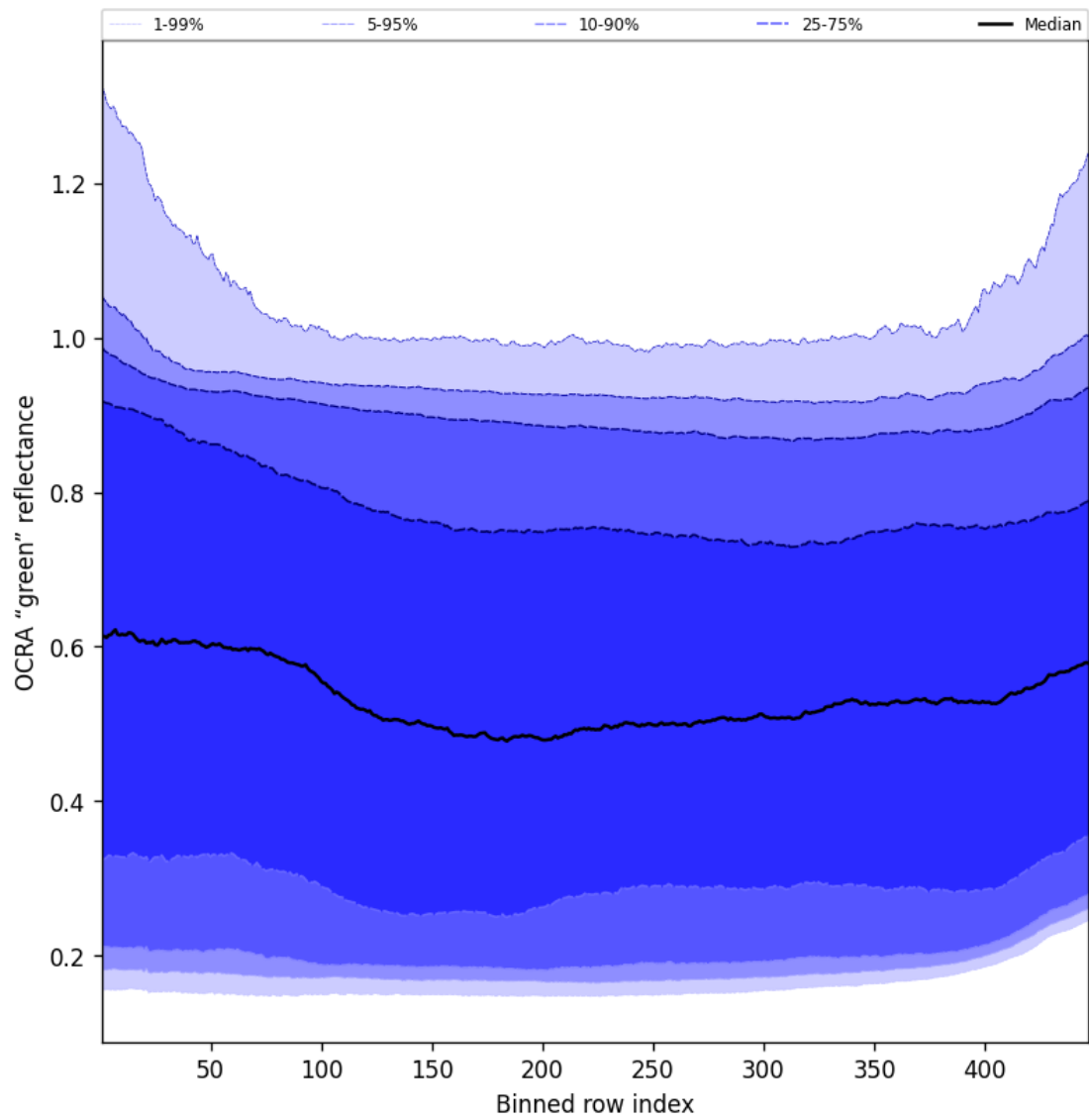


Figure 66: Along track statistics of “OCRA “green” reflectance” for 2024-12-21 to 2024-12-22

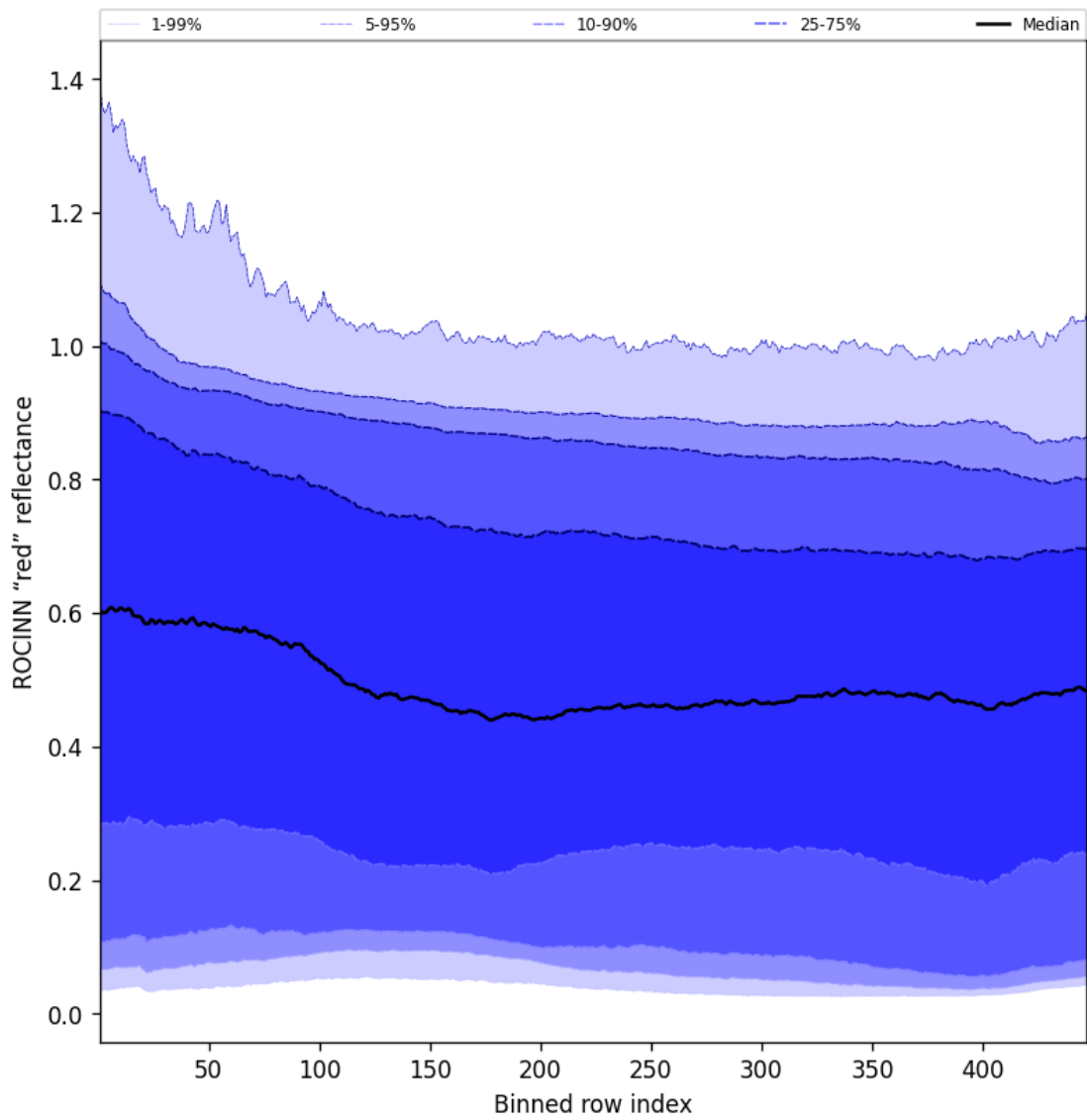


Figure 67: Along track statistics of “ROCINN “red” reflectance” for 2024-12-21 to 2024-12-22

10 Coincidence density

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

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