

PyCAMA report generated by tropl2-proc

tropl2-proc

2024-12-17 (03:45)

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]	0.595 ± 0.366	20636552	5.000×10^{-3}	0.600	0.700	0.0	1.000
cloud fraction [1]	0.585 ± 0.338	20636552	0.995	0.707	0.583	3.659×10^{-3}	1.000
cloud top height [m]	$(0.393 \pm 0.260) \times 10^4$	20636552	1.725×10^3	3.638×10^3	3.434×10^3	0.0	2.000×10^4
cloud optical thickness [1]	20.2 ± 38.3	20636552	9.34	10.7	9.02	1.000	250
cloud fraction crb [1]	0.585 ± 0.339	20636552	0.995	0.707	0.582	1.400×10^{-3}	1.000
cloud height crb [m]	$(0.298 \pm 0.224) \times 10^4$	20636552	75.0	2.986×10^3	2.529×10^3	0.0	2.000×10^4
cloud albedo crb [1]	0.623 ± 0.222	20636552	0.995	0.323	0.608	0.0	1.000
surface albedo fitted [1]	0.297 ± 0.354	20636552	2.500×10^{-2}	0.551	6.412×10^{-2}	0.0	1.000
surface albedo fitted crb [1]	0.283 ± 0.339	20636552	1.500×10^{-2}	0.563	5.159×10^{-2}	0.0	1.000
fitted root mean square [1]	$(8.155 \pm 11.058) \times 10^{-4}$	20636552	5.000×10^{-5}	1.039×10^{-3}	4.702×10^{-4}	1.075×10^{-6}	0.353
fitted root mean square crb [1]	$(7.161 \pm 9.205) \times 10^{-4}$	20636552	5.000×10^{-5}	1.002×10^{-3}	3.626×10^{-4}	7.544×10^{-7}	0.711
wavelength shift [nm]	$(8.938 \pm 7.479) \times 10^{-3}$	20636552	3.000×10^{-4}	1.138×10^{-2}	8.524×10^{-3}	-5.008×10^{-2}	0.331
cloud fraction apriori [1]	0.596 ± 0.342	20636552	0.995	0.724	0.606	0.0	1.000
reflectance blue ocra [1]	0.600 ± 0.237	20636552	0.265	0.424	0.590	0.130	2.01
reflectance green ocra [1]	0.553 ± 0.268	20636552	0.185	0.498	0.550	7.479×10^{-2}	2.02
reflectance continuum aband [1]	0.504 ± 0.294	20636552	5.500×10^{-2}	0.514	0.512	1.195×10^{-2}	6.62

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]	2.894×10^{-2}	7.405×10^{-2}	0.115	0.169	0.271	0.978	1.000	1.000	1.000	1.000
cloud top height [m]	230	719	1.097×10^3	1.418×10^3	1.848×10^3	5.487×10^3	6.591×10^3	7.625×10^3	8.936×10^3	1.125×10^4
cloud optical thickness [1]	1.000	2.41	3.53	4.44	5.39	16.1	25.4	39.6	76.6	250
cloud fraction crb [1]	2.849×10^{-2}	7.326×10^{-2}	0.115	0.168	0.270	0.977	1.000	1.000	1.000	1.000
cloud height crb [m]	0.0	197	536	828	1.202×10^3	4.188×10^3	5.304×10^3	6.272×10^3	7.476×10^3	9.377×10^3
cloud albedo crb [1]	2.912×10^{-2}	0.250	0.366	0.425	0.473	0.796	0.878	0.932	0.992	1.000
surface albedo fitted [1]	0.0	8.638×10^{-3}	1.446×10^{-2}	1.966×10^{-2}	2.713×10^{-2}	0.578	0.843	0.932	0.975	1.000
surface albedo fitted crb [1]	0.0	6.810×10^{-3}	1.103×10^{-2}	1.510×10^{-2}	2.121×10^{-2}	0.585	0.808	0.866	0.905	0.948
fitted root mean square [1]	1.498×10^{-5}	3.028×10^{-5}	5.069×10^{-5}	8.270×10^{-5}	1.455×10^{-4}	1.184×10^{-3}	1.650×10^{-3}	2.080×10^{-3}	2.626×10^{-3}	3.715×10^{-3}
fitted root mean square crb [1]	8.142×10^{-6}	1.865×10^{-5}	3.210×10^{-5}	5.047×10^{-5}	9.095×10^{-5}	1.093×10^{-3}	1.548×10^{-3}	1.948×10^{-3}	2.466×10^{-3}	3.446×10^{-3}
wavelength shift [nm]	-7.392×10^{-3}	-5.793×10^{-4}	2.357×10^{-4}	1.159×10^{-3}	2.930×10^{-3}	1.431×10^{-2}	1.671×10^{-2}	1.872×10^{-2}	2.128×10^{-2}	2.669×10^{-2}
cloud fraction apriori [1]	3.536×10^{-2}	7.074×10^{-2}	0.111	0.166	0.276	1.000	1.000	1.000	1.000	1.000
reflectance blue ocra [1]	0.235	0.261	0.289	0.324	0.385	0.809	0.875	0.913	0.946	1.08
reflectance green ocra [1]	0.154	0.176	0.199	0.231	0.296	0.794	0.869	0.913	0.946	1.04
reflectance continuum aband [1]	3.169×10^{-2}	5.892×10^{-2}	9.421×10^{-2}	0.143	0.244	0.759	0.838	0.884	0.929	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]	0.558 ± 0.399	7614239	0.880	0.690	0.0	1.000	6.000×10^{-2}	0.940
cloud fraction [1]	0.544 ± 0.342	7614239	0.696	0.518	3.659×10^{-3}	1.000	0.218	0.914
cloud top height [m]	$(0.446 \pm 0.271) \times 10^4$	7614239	4.080×10^3	3.975×10^3	0.0	2.000×10^4	2.209×10^3	6.289×10^3
cloud optical thickness [1]	30.7 ± 51.9	7614239	20.2	10.6	1.000	250	6.16	26.4
cloud fraction crb [1]	0.542 ± 0.341	7614239	0.694	0.514	8.432×10^{-3}	1.000	0.217	0.911
cloud height crb [m]	$(0.373 \pm 0.229) \times 10^4$	7614239	3.531×10^3	3.413×10^3	0.0	2.000×10^4	1.780×10^3	5.311×10^3
cloud albedo crb [1]	0.599 ± 0.213	7614239	0.273	0.589	0.0	1.000	0.469	0.742
surface albedo fitted [1]	0.165 ± 0.194	7614239	0.237	5.715×10^{-2}	0.0	1.000	2.879×10^{-2}	0.265
surface albedo fitted crb [1]	0.158 ± 0.193	7614239	0.235	4.565×10^{-2}	0.0	1.000	2.193×10^{-2}	0.257
fitted root mean square [1]	$(4.021 \pm 5.733) \times 10^{-4}$	7614239	4.173×10^{-4}	2.278×10^{-4}	1.075×10^{-6}	0.150	8.849×10^{-5}	5.058×10^{-4}
fitted root mean square crb [1]	$(3.215 \pm 4.788) \times 10^{-4}$	7614239	3.482×10^{-4}	1.332×10^{-4}	7.544×10^{-7}	3.815×10^{-2}	4.585×10^{-5}	3.941×10^{-4}
wavelength shift [nm]	$(6.216 \pm 6.728) \times 10^{-3}$	7614239	9.200×10^{-3}	4.928×10^{-3}	-4.417×10^{-2}	5.920×10^{-2}	1.157×10^{-3}	1.036×10^{-2}
cloud fraction apriori [1]	0.546 ± 0.347	7614239	0.727	0.521	0.0	1.000	0.212	0.939
reflectance blue ocra [1]	0.549 ± 0.211	7614239	0.318	0.529	0.136	2.01	0.374	0.692
reflectance green ocra [1]	0.490 ± 0.235	7614239	0.381	0.473	7.706×10^{-2}	2.02	0.280	0.661
reflectance continuum aband [1]	0.436 ± 0.274	7614239	0.422	0.419	1.308×10^{-2}	6.62	0.210	0.632

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]	0.616 ± 0.343	13022313	0.500	0.700	0.0	1.000	0.400	0.900
cloud fraction [1]	0.610 ± 0.334	13022313	0.688	0.619	7.024×10^{-3}	1.000	0.308	0.996
cloud top height [m]	$(0.362 \pm 0.248) \times 10^4$	13022313	3.385×10^3	3.157×10^3	0.0	2.000×10^4	1.663×10^3	5.048×10^3
cloud optical thickness [1]	14.1 ± 25.3	13022313	8.03	8.45	1.000	250	5.11	13.1
cloud fraction crb [1]	0.610 ± 0.334	13022313	0.690	0.620	1.400×10^{-3}	1.000	0.308	0.998
cloud height crb [m]	$(0.254 \pm 0.210) \times 10^4$	13022313	2.586×10^3	2.098×10^3	0.0	2.000×10^4	948	3.534×10^3
cloud albedo crb [1]	0.637 ± 0.225	13022313	0.352	0.624	0.0	1.000	0.475	0.827
surface albedo fitted [1]	0.375 ± 0.401	13022313	0.813	7.390×10^{-2}	0.0	1.000	2.609×10^{-2}	0.839
surface albedo fitted crb [1]	0.356 ± 0.381	13022313	0.784	5.970×10^{-2}	0.0	1.000	2.071×10^{-2}	0.805
fitted root mean square [1]	$(1.057 \pm 1.260) \times 10^{-3}$	13022313	1.337×10^{-3}	7.759×10^{-4}	1.205×10^{-6}	0.353	2.404×10^{-4}	1.577×10^{-3}
fitted root mean square crb [1]	$(9.468 \pm 10.317) \times 10^{-4}$	13022313	1.305×10^{-3}	6.803×10^{-4}	8.043×10^{-7}	0.711	1.734×10^{-4}	1.479×10^{-3}
wavelength shift [nm]	$(1.053 \pm 0.744) \times 10^{-2}$	13022313	1.086×10^{-2}	1.083×10^{-2}	-5.008×10^{-2}	0.331	4.932×10^{-3}	1.579×10^{-2}
cloud fraction apriori [1]	0.625 ± 0.336	13022313	0.677	0.652	0.0	1.000	0.323	1.000
reflectance blue oca [1]	0.630 ± 0.246	13022313	0.462	0.653	0.130	1.97	0.394	0.856
reflectance green oca [1]	0.590 ± 0.278	13022313	0.538	0.625	7.479×10^{-2}	1.85	0.312	0.850
reflectance continuum aband [1]	0.543 ± 0.298	13022313	0.535	0.583	1.195×10^{-2}	5.73	0.276	0.811

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	12868220	0.550	0.850	0.0	1.000	0.400	0.950
cloud fraction [1]	0.609 ± 0.360	12868220	0.760	0.658	7.024×10^{-3}	1.000	0.240	1.000
cloud top height [m]	$(0.351 \pm 0.255) \times 10^4$	12868220	3.313×10^3	2.707×10^3	0.0	2.000×10^4	1.585×10^3	4.899×10^3
cloud optical thickness [1]	18.5 ± 30.6	12868220	10.1	9.89	1.000	250	6.65	16.7
cloud fraction crb [1]	0.608 ± 0.361	12868220	0.761	0.656	7.664×10^{-3}	1.000	0.239	1.000
cloud height crb [m]	$(0.277 \pm 0.230) \times 10^4$	12868220	3.027×10^3	2.056×10^3	0.0	2.000×10^4	1.004×10^3	4.032×10^3
cloud albedo crb [1]	0.560 ± 0.181	12868220	0.232	0.542	0.0	1.000	0.452	0.684
surface albedo fitted [1]	0.114 ± 0.215	12868220	3.562×10^{-2}	3.278×10^{-2}	0.0	1.000	1.953×10^{-2}	5.515×10^{-2}
surface albedo fitted crb [1]	0.110 ± 0.219	12868220	2.942×10^{-2}	2.596×10^{-2}	0.0	1.000	1.498×10^{-2}	4.440×10^{-2}
fitted root mean square [1]	$(7.414 \pm 11.883) \times 10^{-4}$	12868220	9.957×10^{-4}	3.318×10^{-4}	1.075×10^{-6}	0.353	9.716×10^{-5}	1.093×10^{-3}
fitted root mean square crb [1]	$(6.884 \pm 9.222) \times 10^{-4}$	12868220	9.809×10^{-4}	2.925×10^{-4}	7.544×10^{-7}	0.470	7.495×10^{-5}	1.056×10^{-3}
wavelength shift [nm]	$(8.305 \pm 7.694) \times 10^{-3}$	12868220	1.130×10^{-2}	7.540×10^{-3}	-4.665×10^{-2}	0.331	2.371×10^{-3}	1.367×10^{-2}
cloud fraction apriori [1]	0.612 ± 0.366	12868220	0.768	0.670	0.0	1.000	0.232	1.000
reflectance blue ocr [1]	0.524 ± 0.207	12868220	0.334	0.491	0.157	1.97	0.345	0.679
reflectance green ocr [1]	0.465 ± 0.235	12868220	0.404	0.432	8.968×10^{-2}	1.91	0.248	0.652
reflectance continuum aband [1]	0.400 ± 0.272	12868220	0.479	0.376	1.195×10^{-2}	6.62	0.143	0.622

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]	0.461 ± 0.352	6439857	0.700	0.560	0.0	1.000	0.0	0.700
cloud fraction [1]	0.533 ± 0.287	6439857	0.458	0.509	3.659×10^{-3}	1.000	0.304	0.762
cloud top height [m]	$(0.459 \pm 0.245) \times 10^4$	6439857	2.939×10^3	4.371×10^3	0.0	2.000×10^4	2.921×10^3	5.861×10^3
cloud optical thickness [1]	18.9 ± 42.2	6439857	7.71	6.10	1.000	250	4.36	12.1
cloud fraction crb [1]	0.535 ± 0.287	6439857	0.459	0.510	1.400×10^{-3}	1.000	0.304	0.763
cloud height crb [m]	$(0.318 \pm 0.203) \times 10^4$	6439857	2.245×10^3	2.966×10^3	0.0	2.000×10^4	1.770×10^3	4.015×10^3
cloud albedo crb [1]	0.740 ± 0.241	6439857	0.329	0.811	0.0	1.000	0.599	0.929
surface albedo fitted [1]	0.658 ± 0.321	6439857	0.646	0.828	0.0	1.000	0.305	0.951
surface albedo fitted crb [1]	0.622 ± 0.296	6439857	0.580	0.789	0.0	1.000	0.301	0.881
fitted root mean square [1]	$(1.023 \pm 0.959) \times 10^{-3}$	6439857	1.090×10^{-3}	7.411×10^{-4}	1.205×10^{-6}	0.299	3.516×10^{-4}	1.441×10^{-3}
fitted root mean square crb [1]	$(8.447 \pm 9.421) \times 10^{-4}$	6439857	1.073×10^{-3}	5.786×10^{-4}	1.206×10^{-6}	0.711	1.941×10^{-4}	1.268×10^{-3}
wavelength shift [nm]	$(1.081 \pm 0.682) \times 10^{-2}$	6439857	1.030×10^{-2}	1.111×10^{-2}	-5.008×10^{-2}	7.407×10^{-2}	5.478×10^{-3}	1.578×10^{-2}
cloud fraction apriori [1]	0.561 ± 0.290	6439857	0.473	0.546	0.0	1.000	0.329	0.802
reflectance blue ocrs [1]	0.740 ± 0.227	6439857	0.325	0.827	0.131	2.01	0.584	0.909
reflectance green ocrs [1]	0.718 ± 0.253	6439857	0.370	0.822	7.479×10^{-2}	2.02	0.543	0.913
reflectance continuum aband [1]	0.699 ± 0.237	6439857	0.367	0.782	1.481×10^{-2}	5.73	0.515	0.882

3 Granule outlines

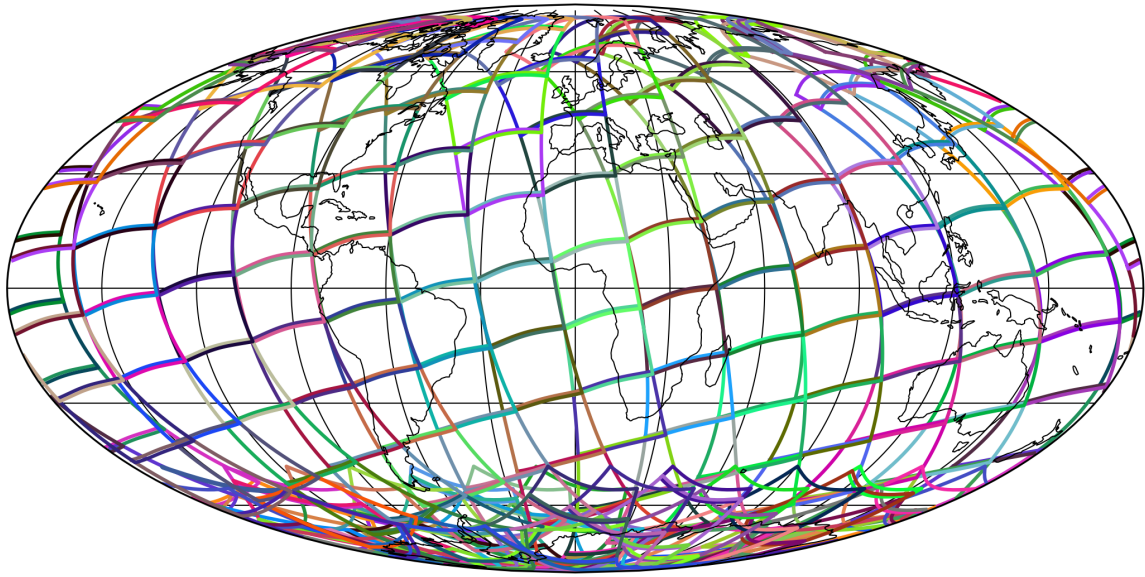


Figure 1: Outline of the granules.

4 Input data monitoring

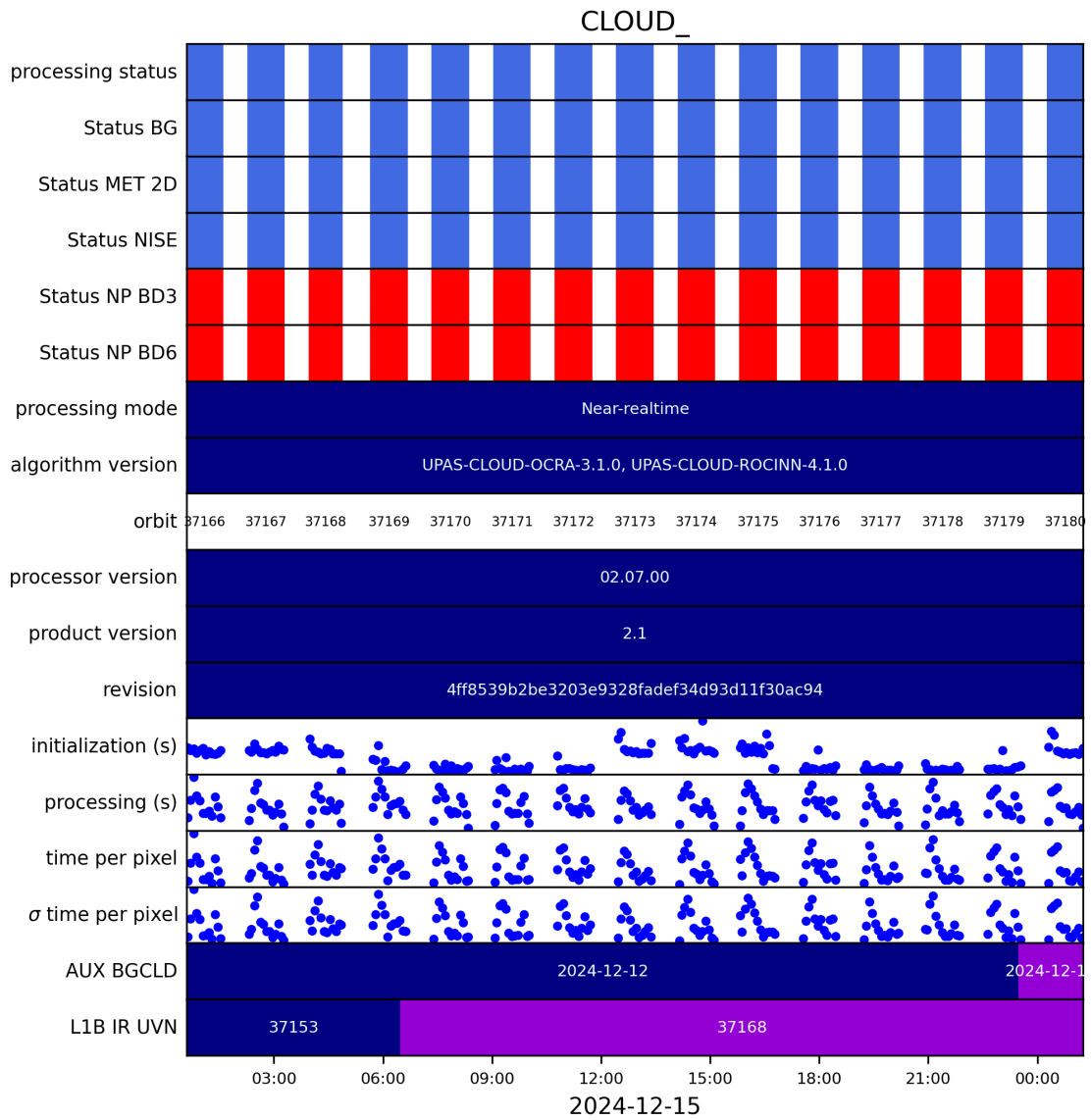


Figure 2: Input data per granule

5 Warnings and errors

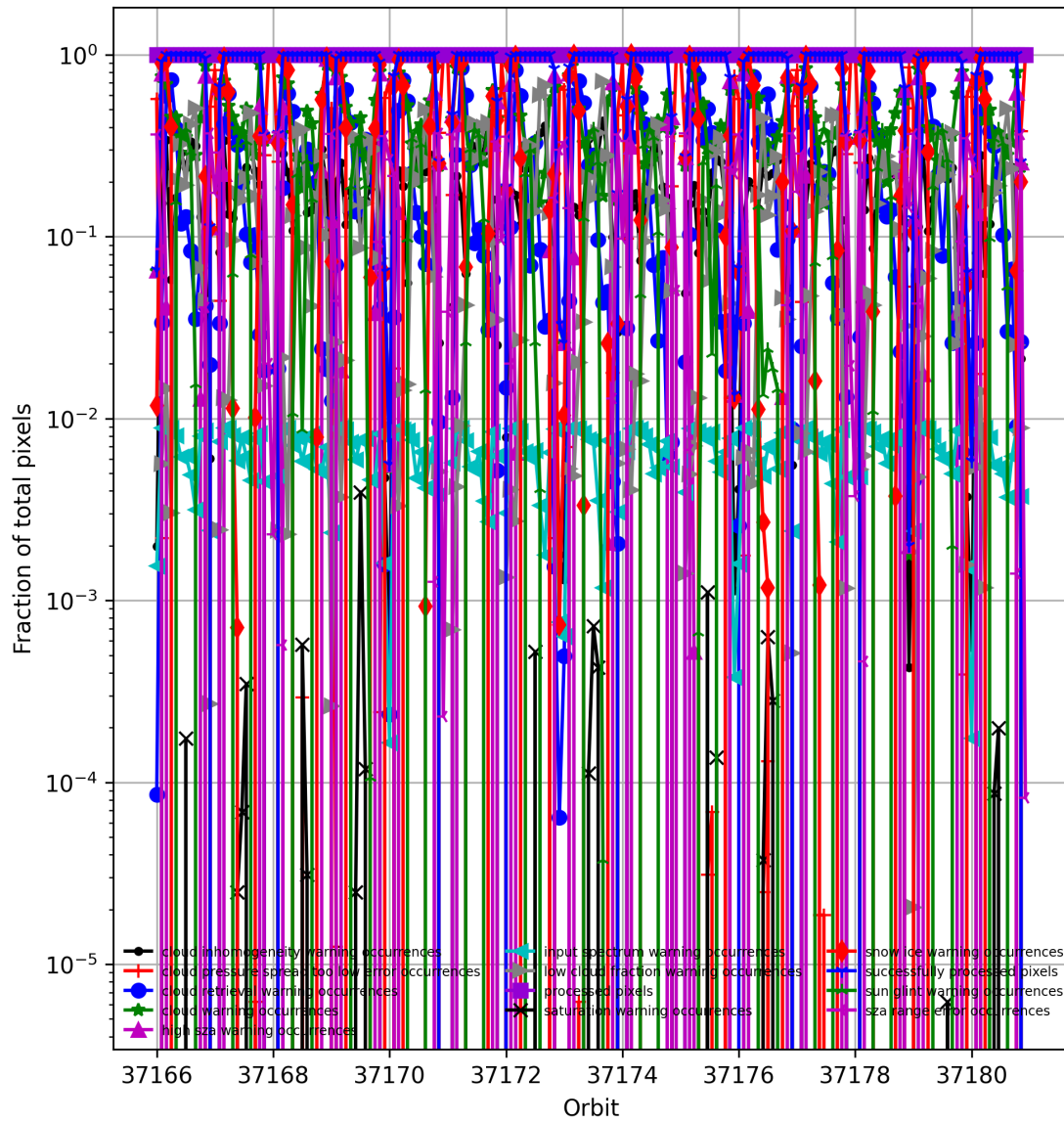


Figure 3: Fraction of pixels with specific warnings and errors during processing

6 World maps

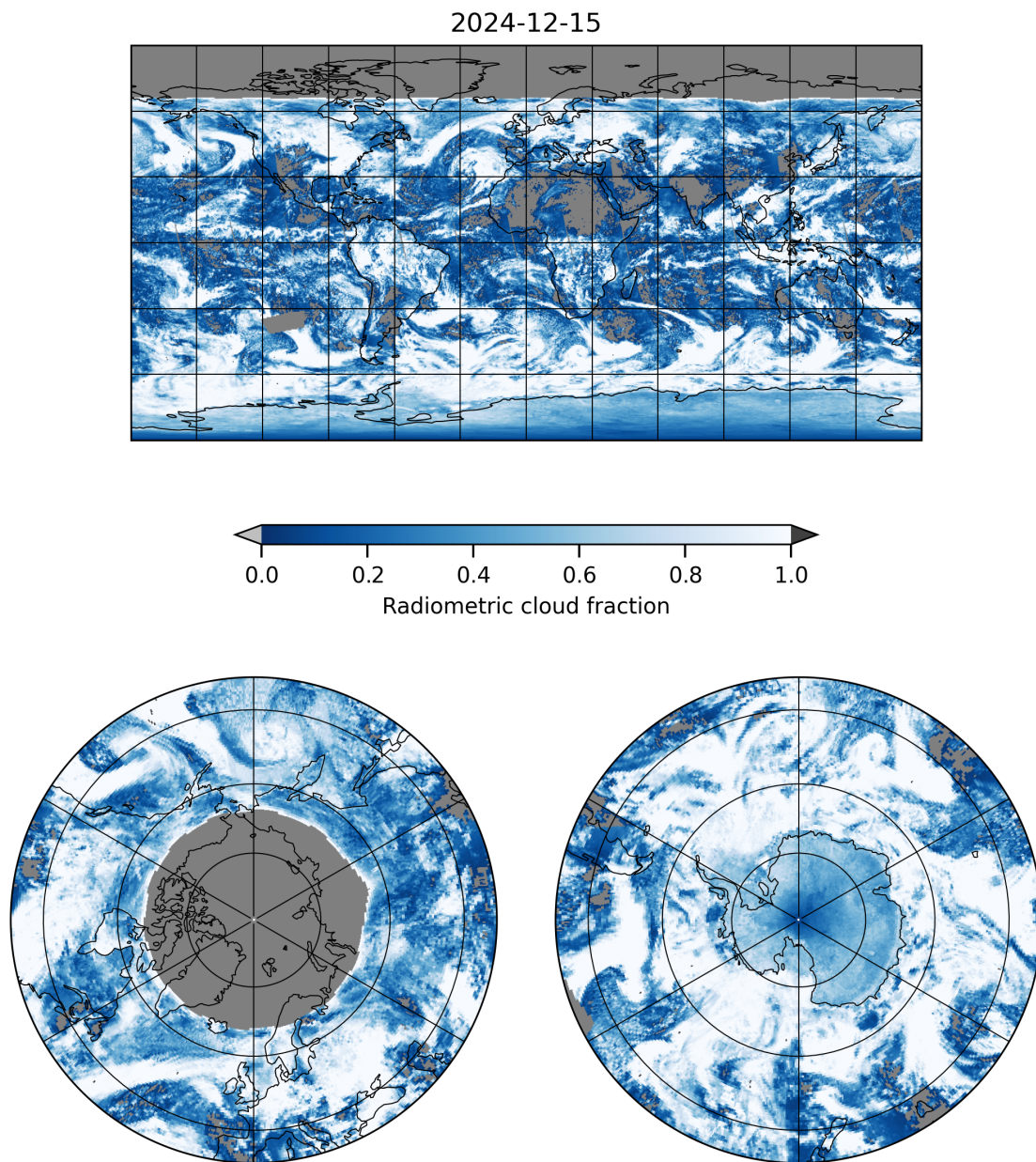


Figure 4: Map of “Radiometric cloud fraction” for 2024-12-15 to 2024-12-16

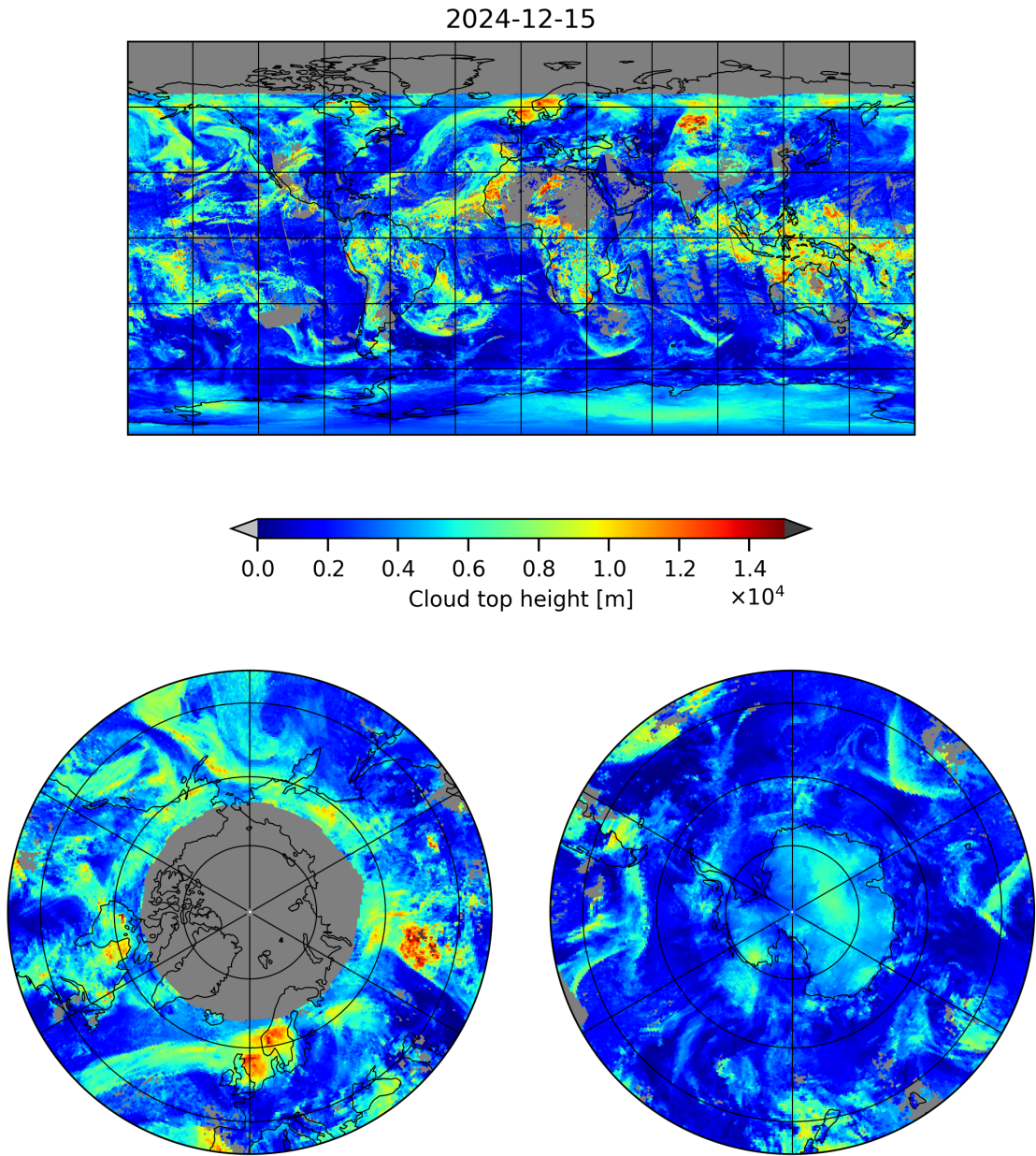


Figure 5: Map of “Cloud top height” for 2024-12-15 to 2024-12-16

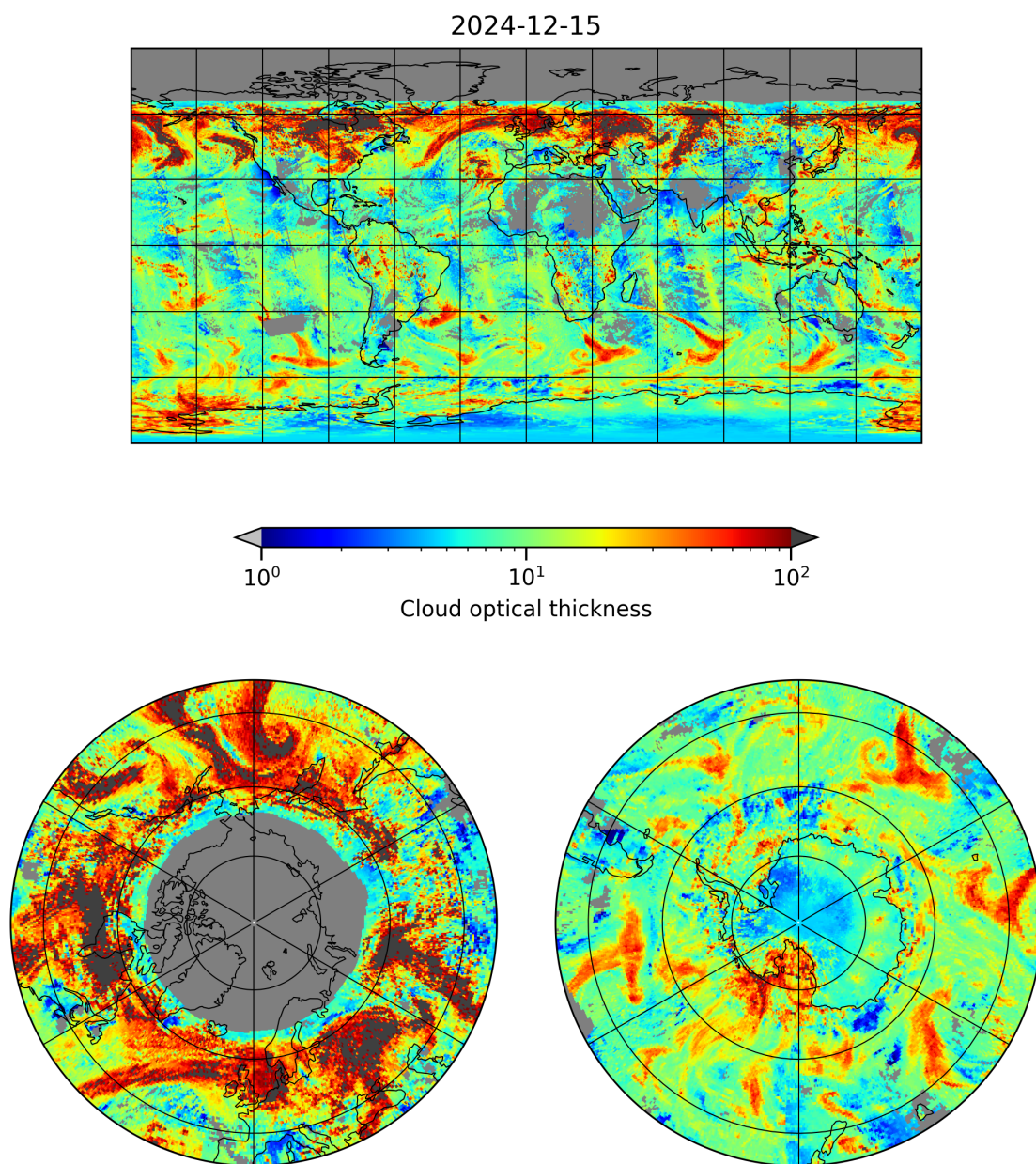


Figure 6: Map of “Cloud optical thickness” for 2024-12-15 to 2024-12-16

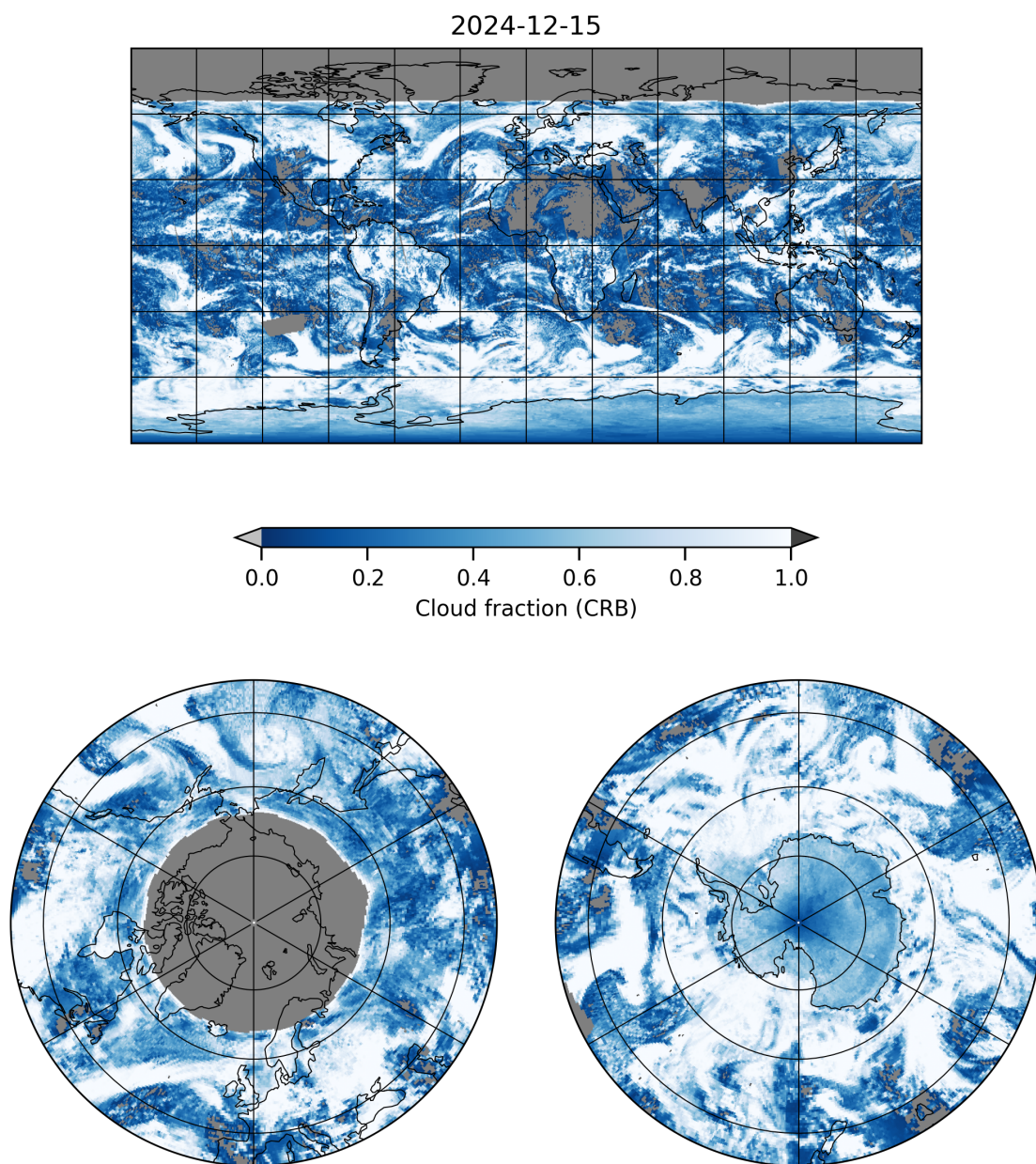


Figure 7: Map of “Cloud fraction (CRB)” for 2024-12-15 to 2024-12-16

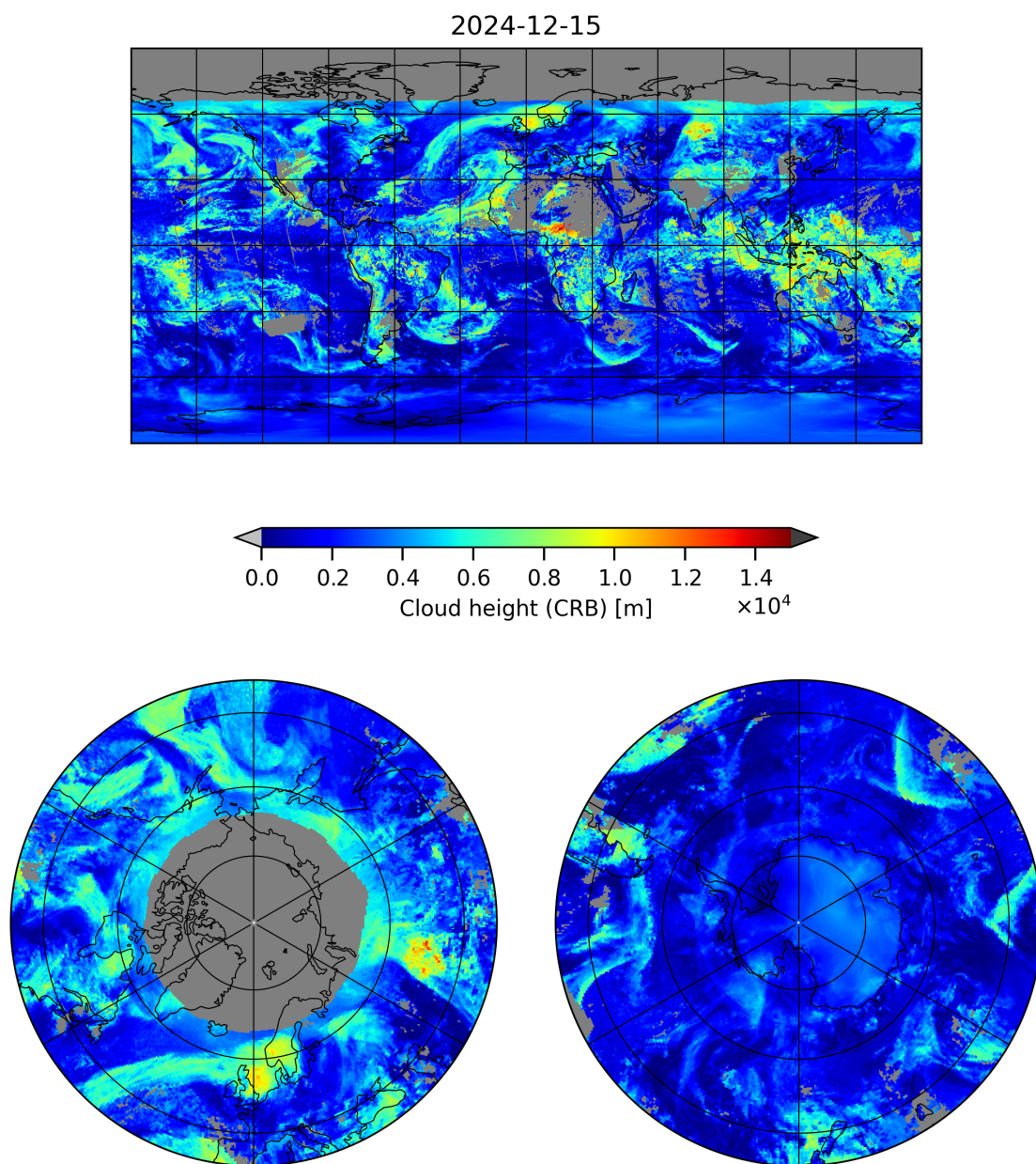


Figure 8: Map of “Cloud height (CRB)” for 2024-12-15 to 2024-12-16

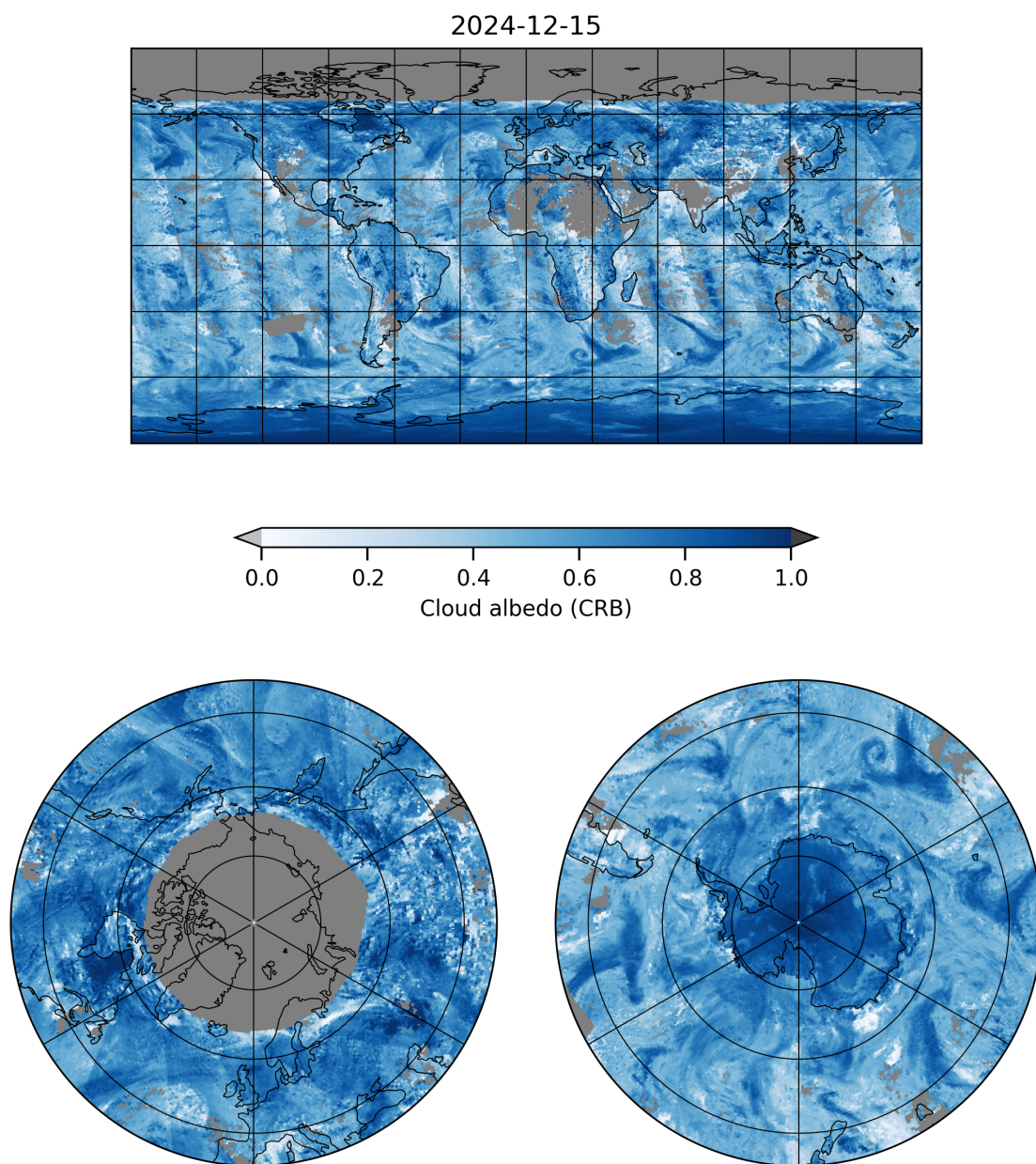


Figure 9: Map of “Cloud albedo (CRB)” for 2024-12-15 to 2024-12-16

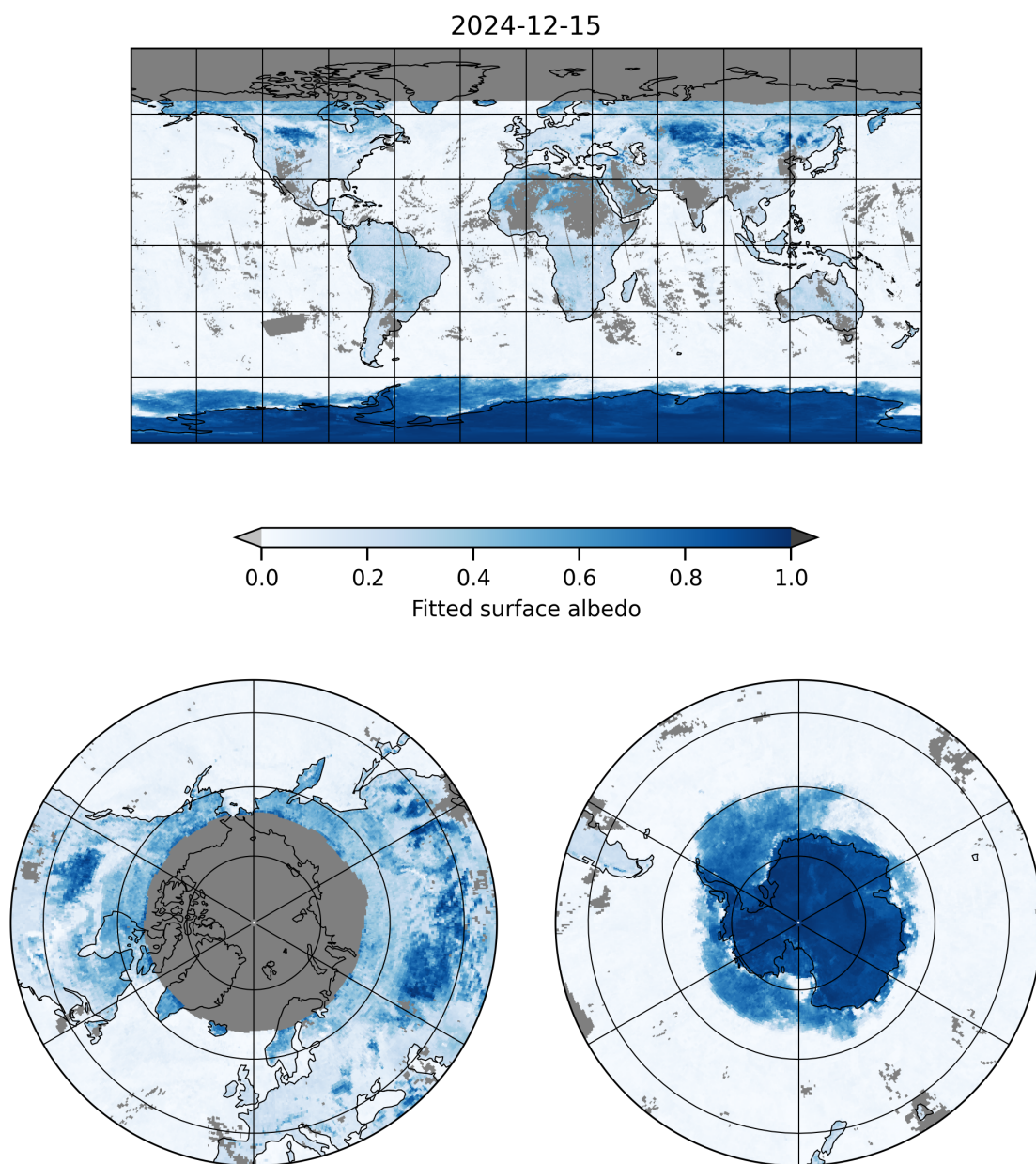


Figure 10: Map of “Fitted surface albedo” for 2024-12-15 to 2024-12-16

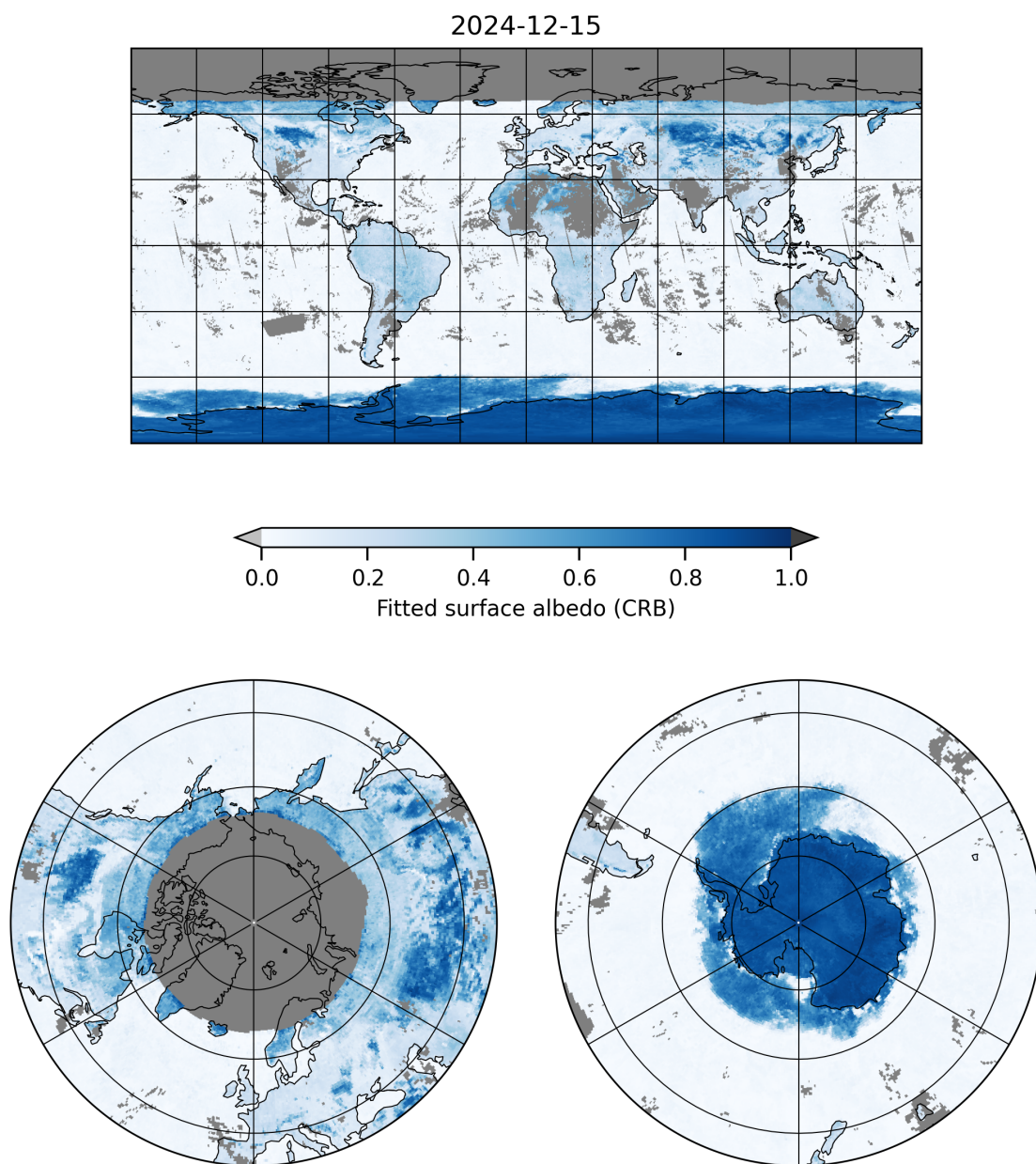


Figure 11: Map of “Fitted surface albedo (CRB)” for 2024-12-15 to 2024-12-16

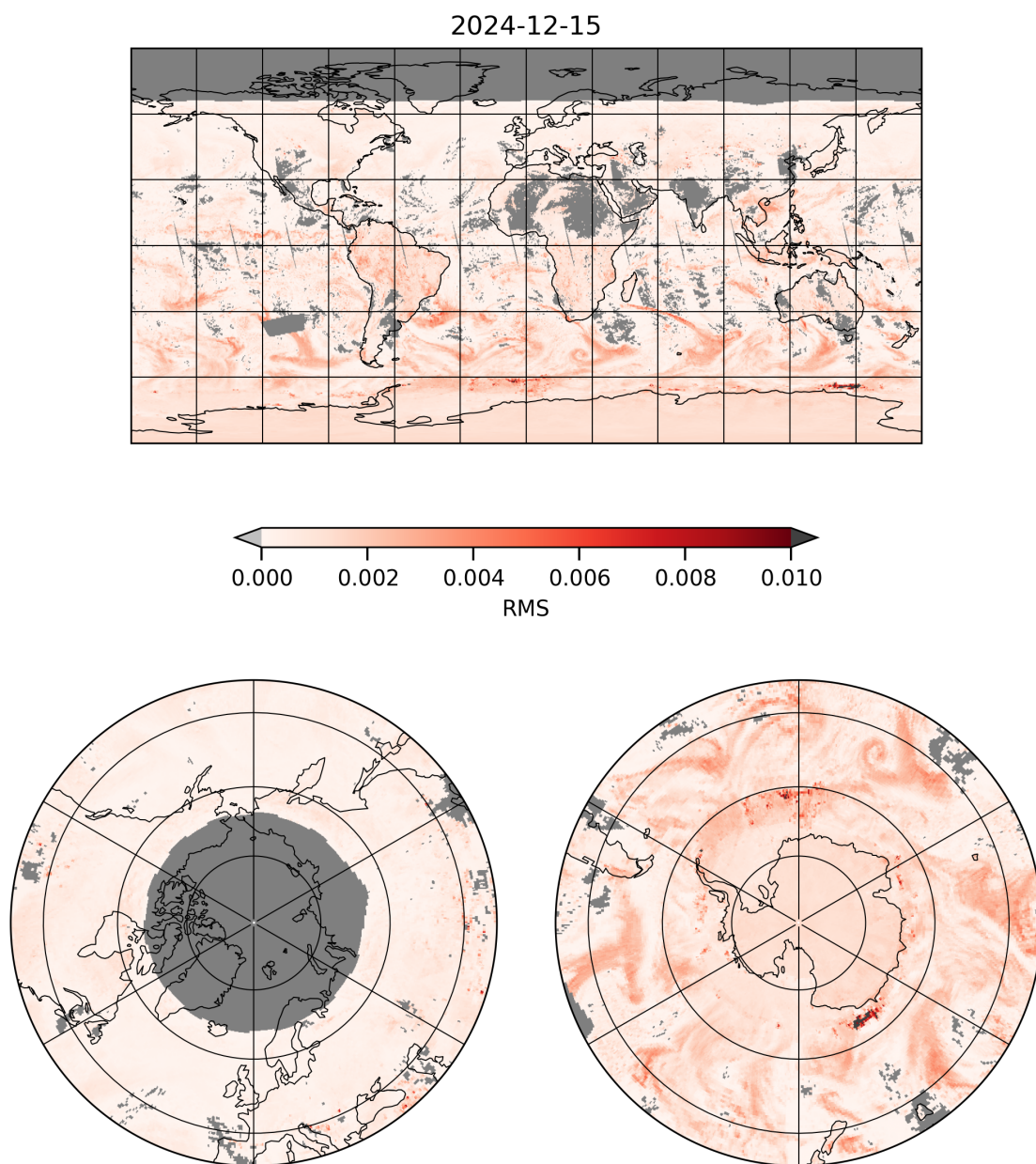


Figure 12: Map of “RMS” for 2024-12-15 to 2024-12-16

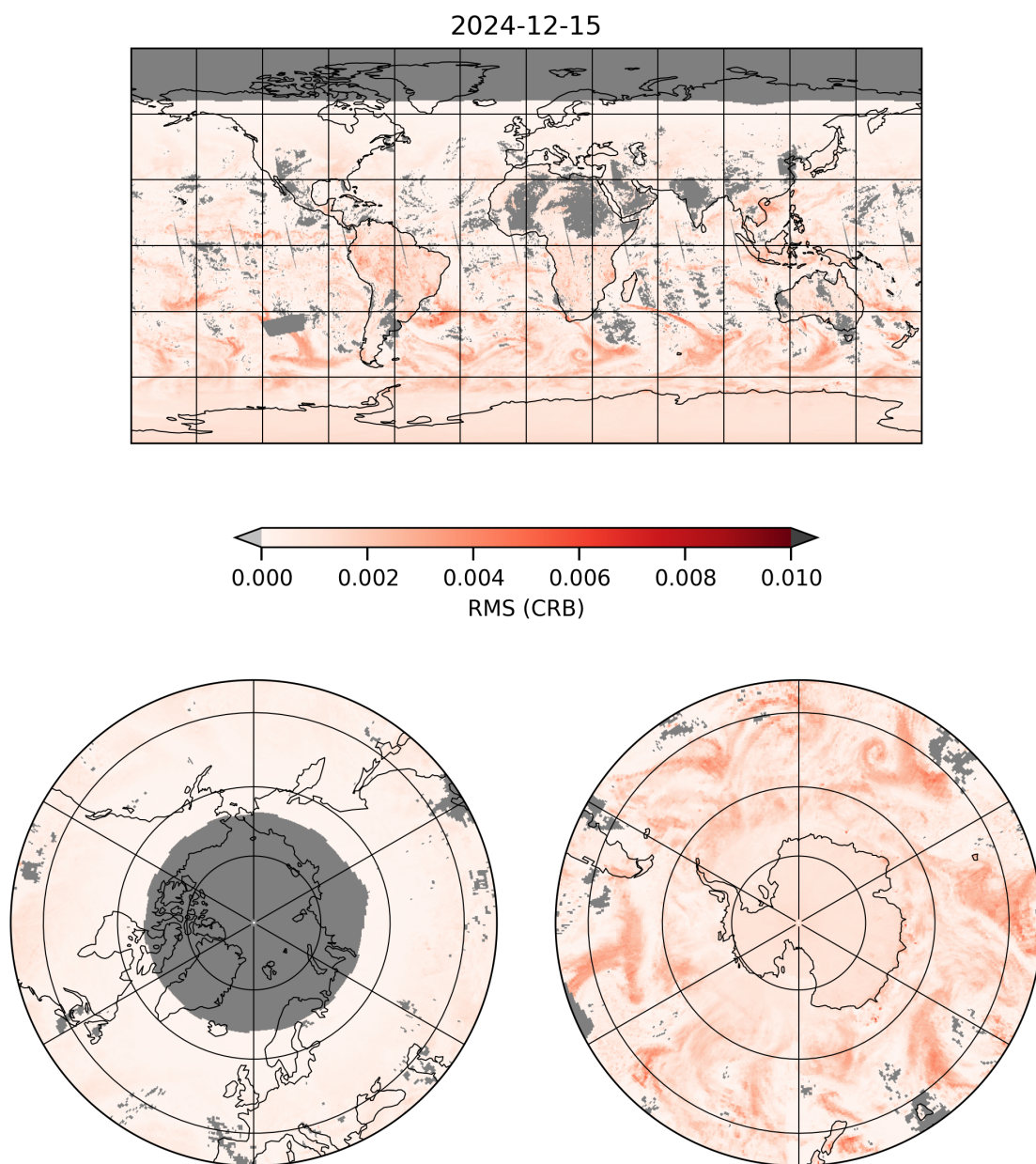


Figure 13: Map of “RMS (CRB)” for 2024-12-15 to 2024-12-16

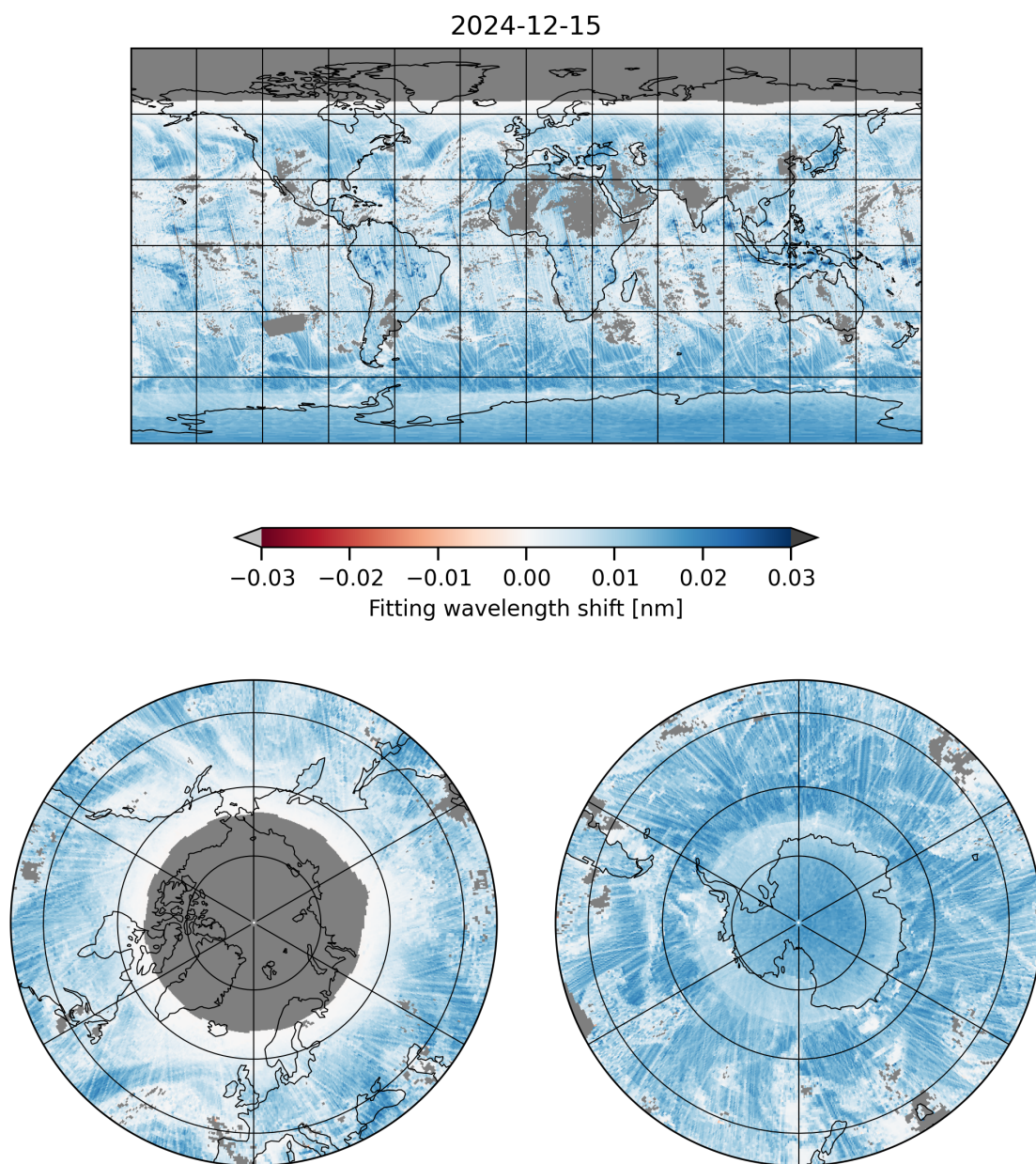


Figure 14: Map of "Fitting wavelength shift" for 2024-12-15 to 2024-12-16

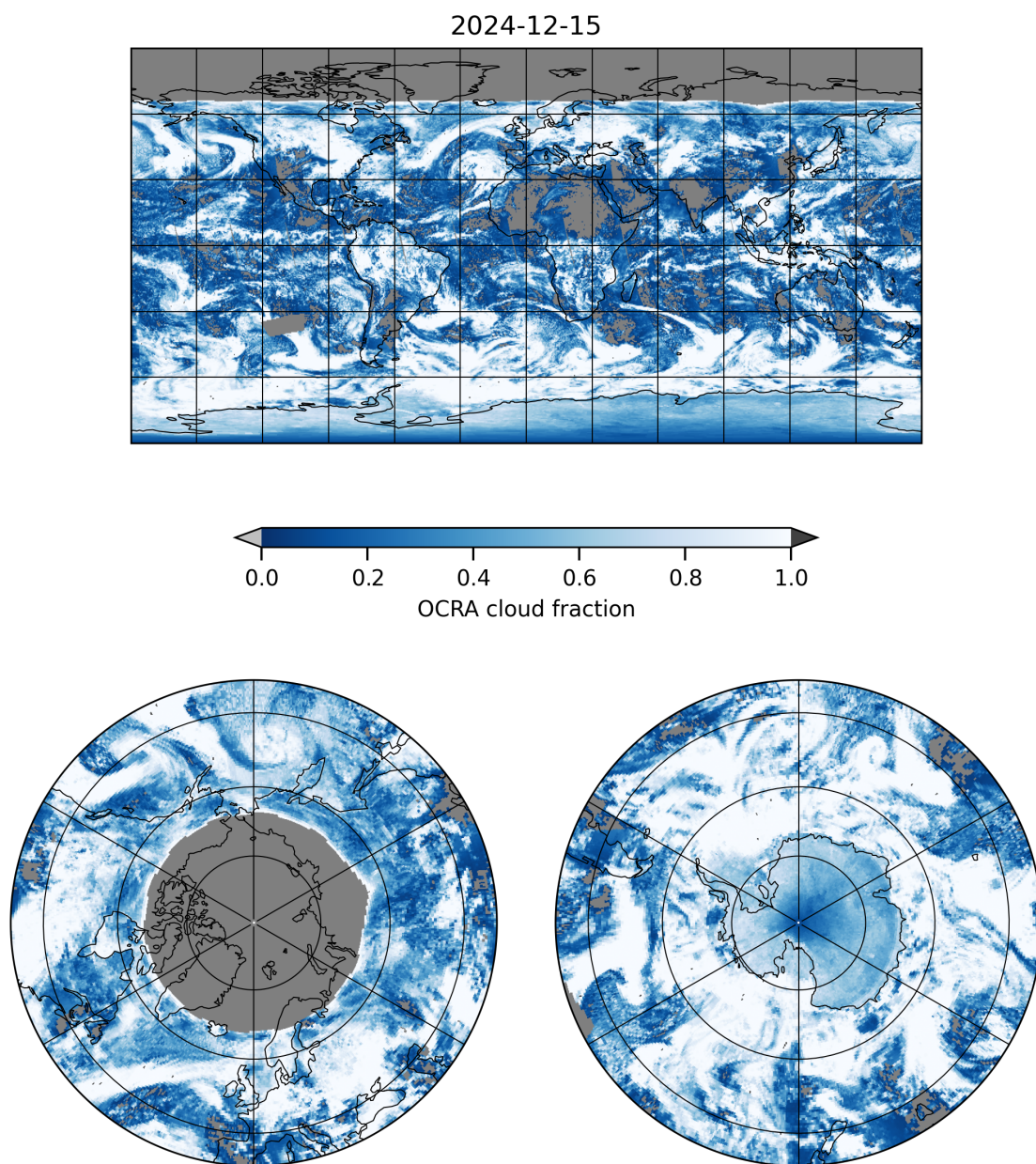


Figure 15: Map of “OCRA cloud fraction” for 2024-12-15 to 2024-12-16

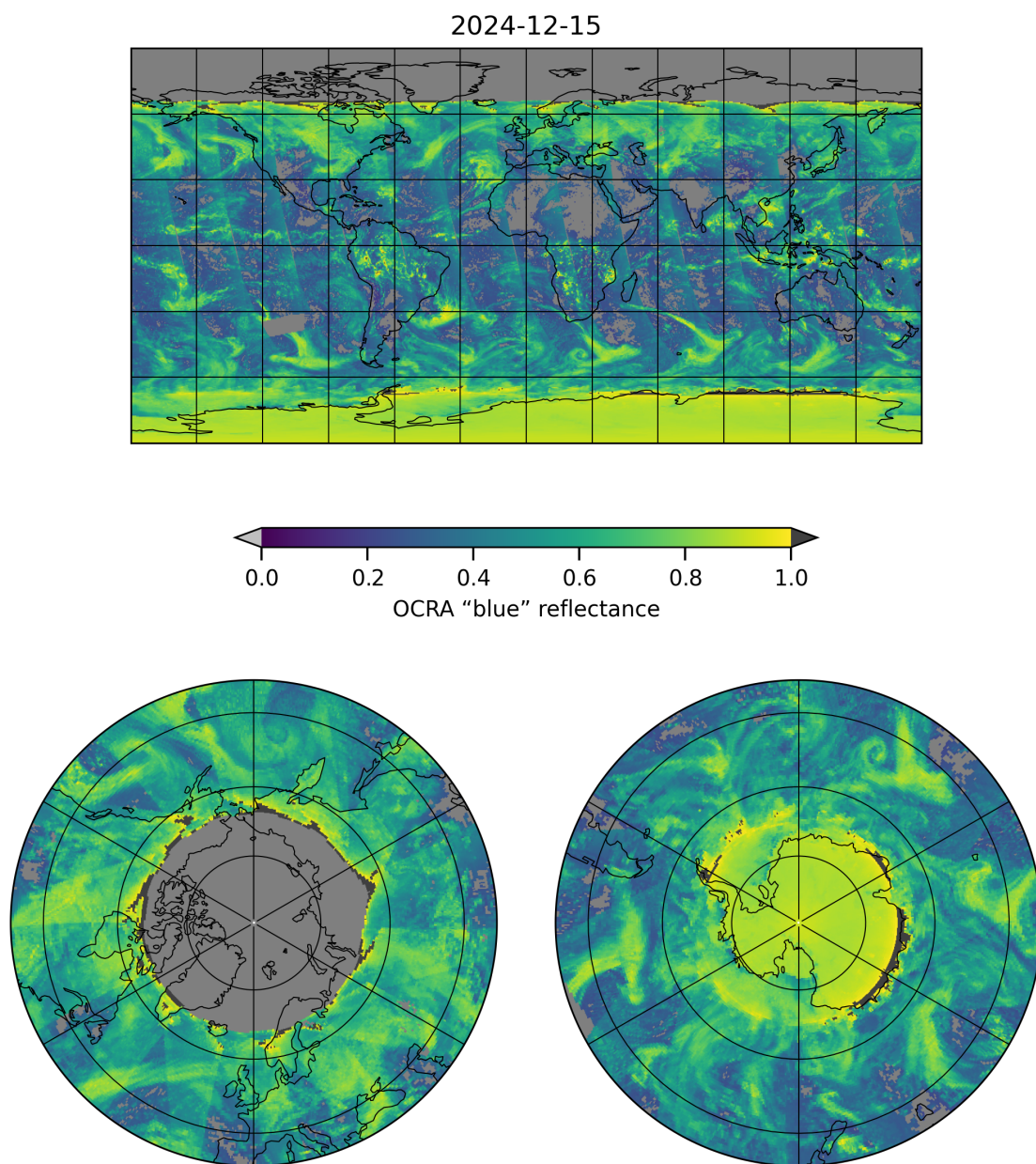


Figure 16: Map of "OCRA "blue" reflectance" for 2024-12-15 to 2024-12-16

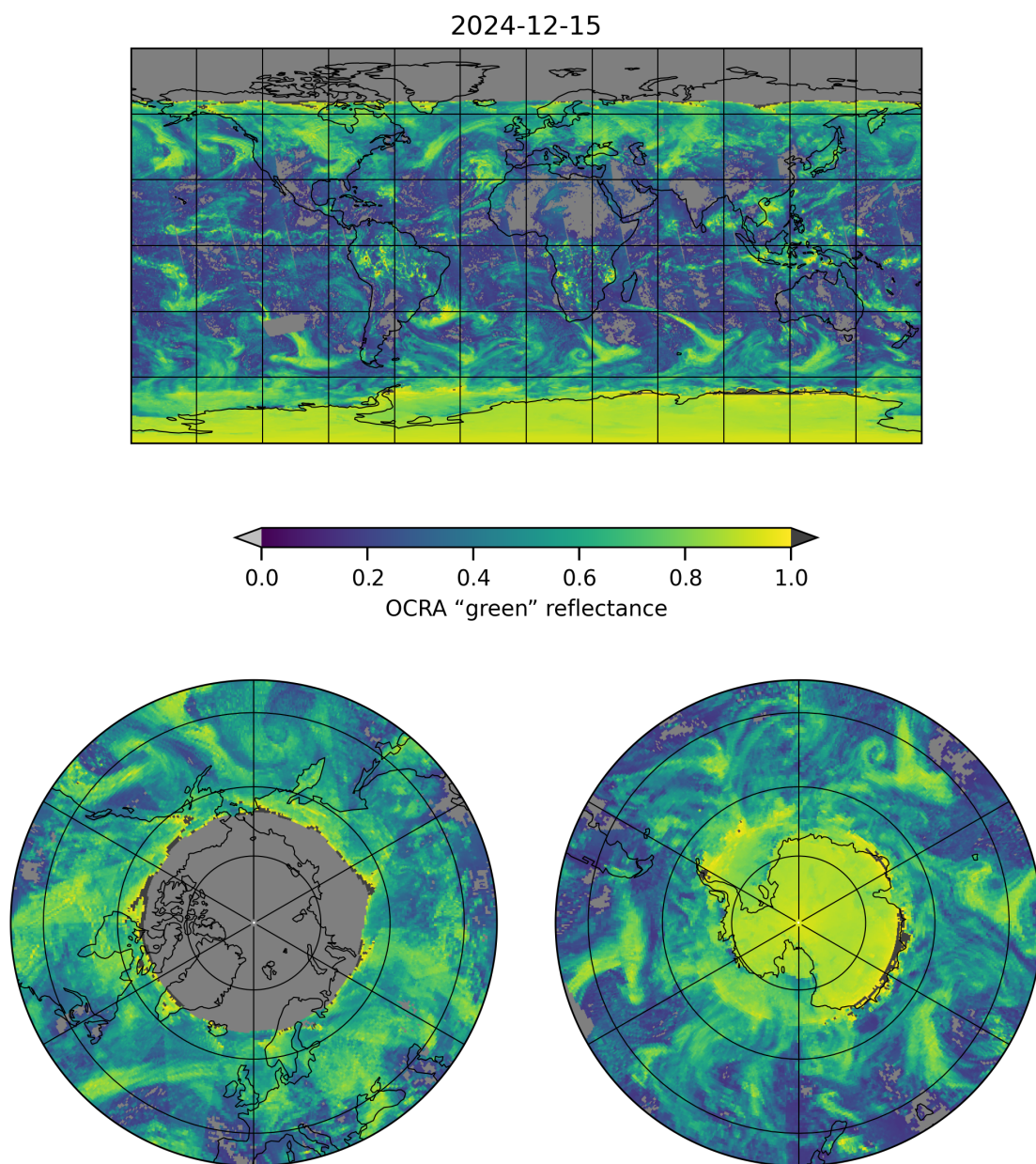


Figure 17: Map of "OCRA "green" reflectance" for 2024-12-15 to 2024-12-16

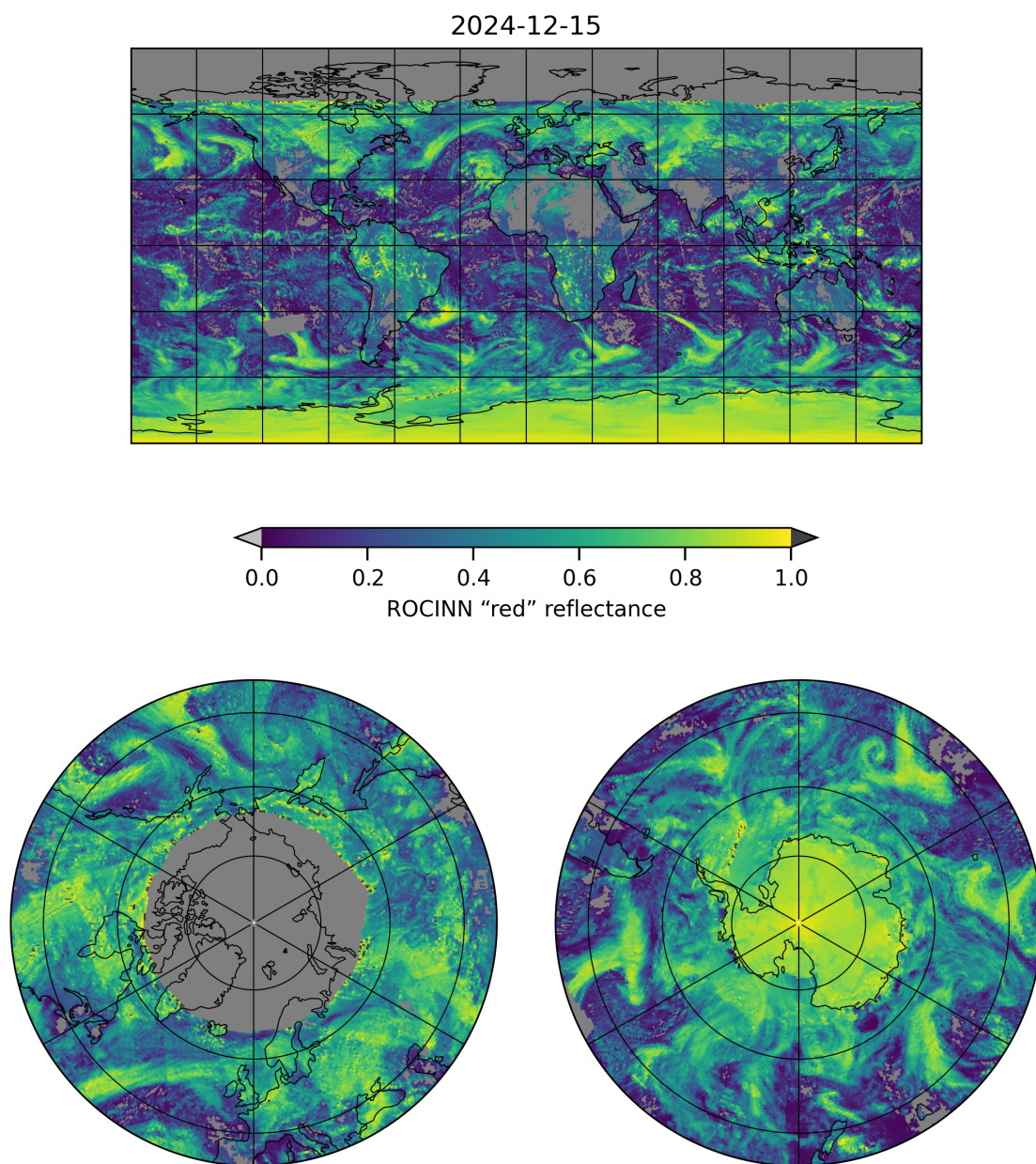


Figure 18: Map of "ROCINN "red" reflectance" for 2024-12-15 to 2024-12-16

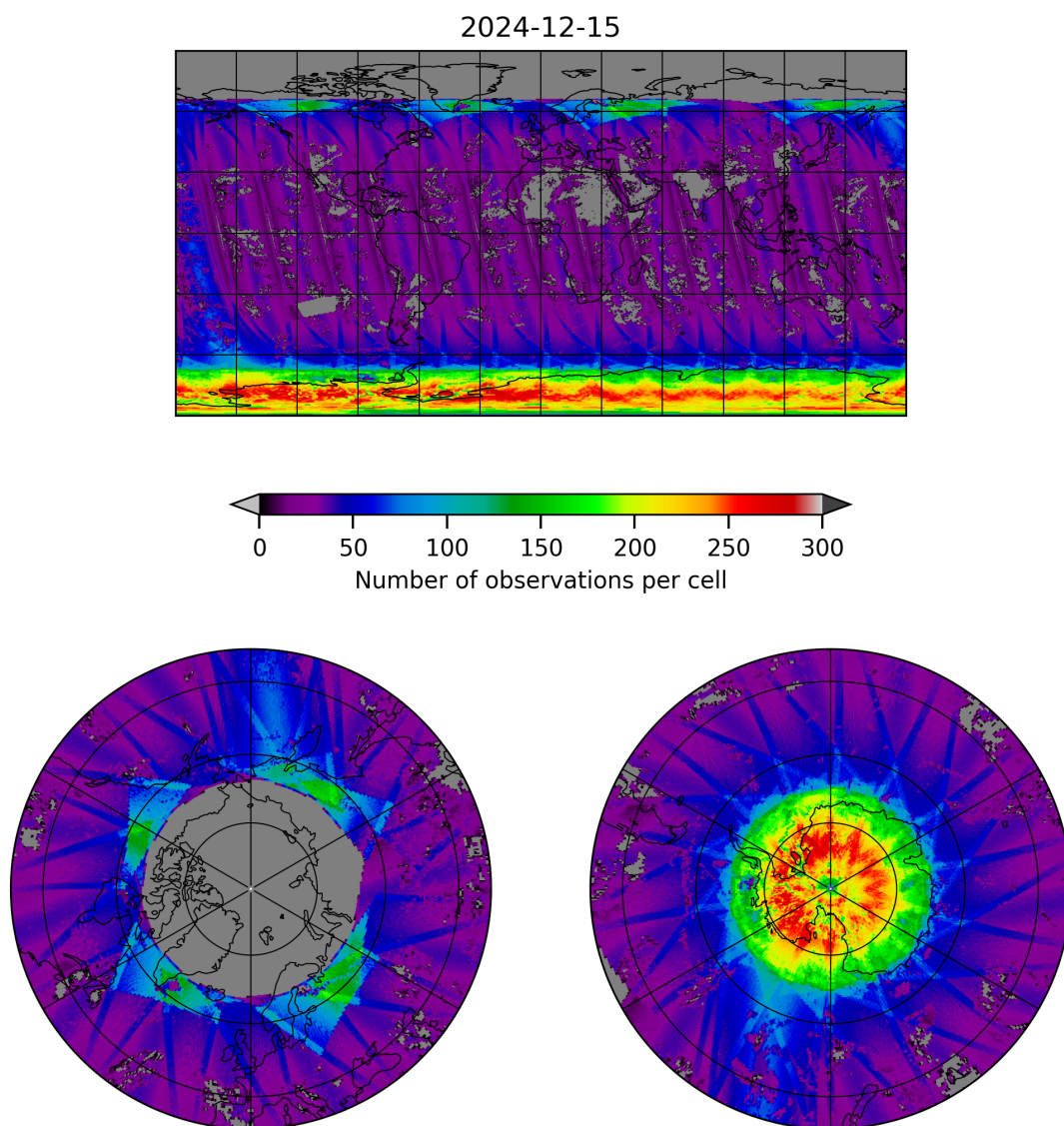


Figure 19: Map of the number of observations for 2024-12-15 to 2024-12-16

7 Zonal average

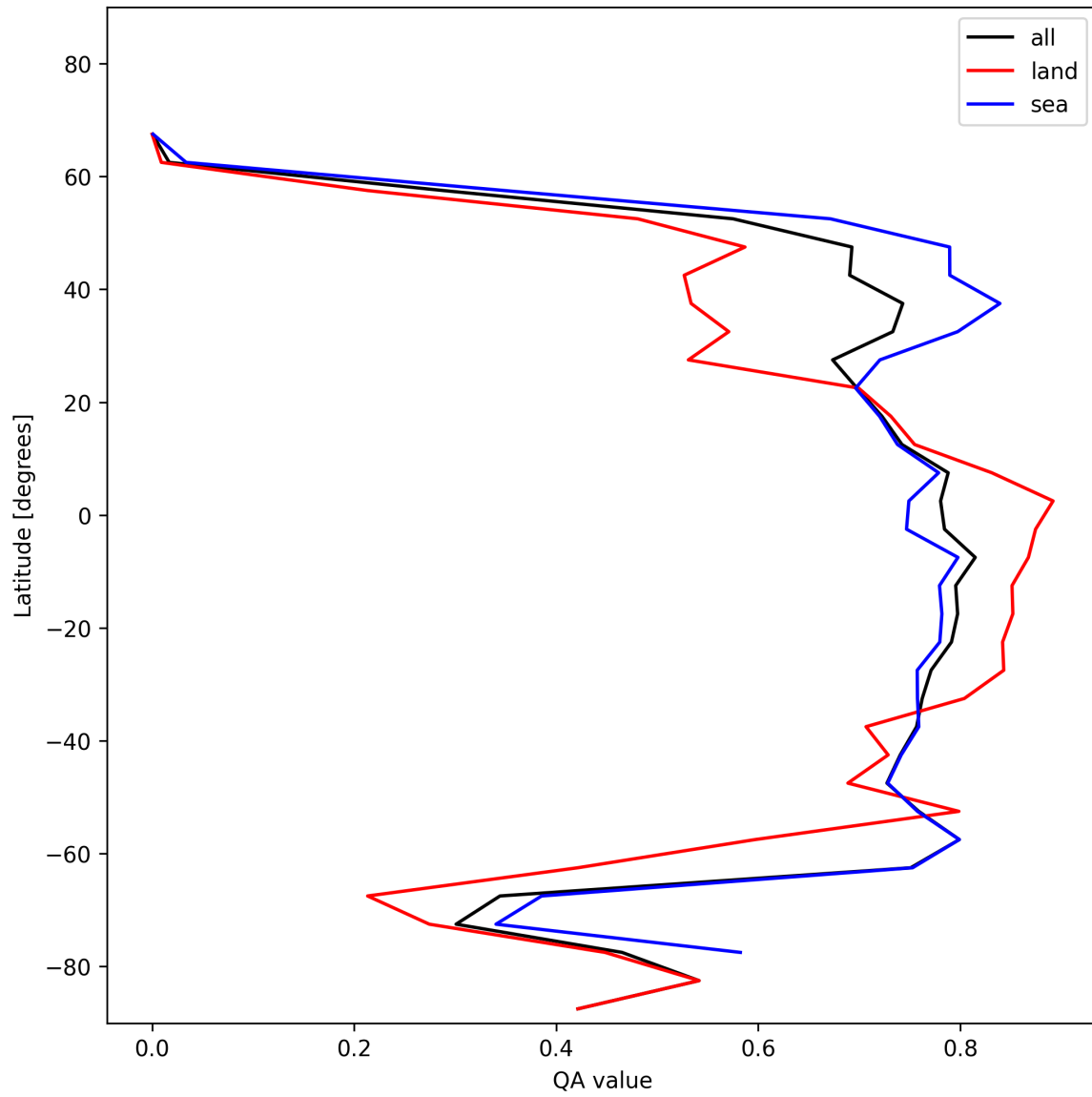


Figure 20: Zonal average of “QA value” for 2024-12-15 to 2024-12-16.

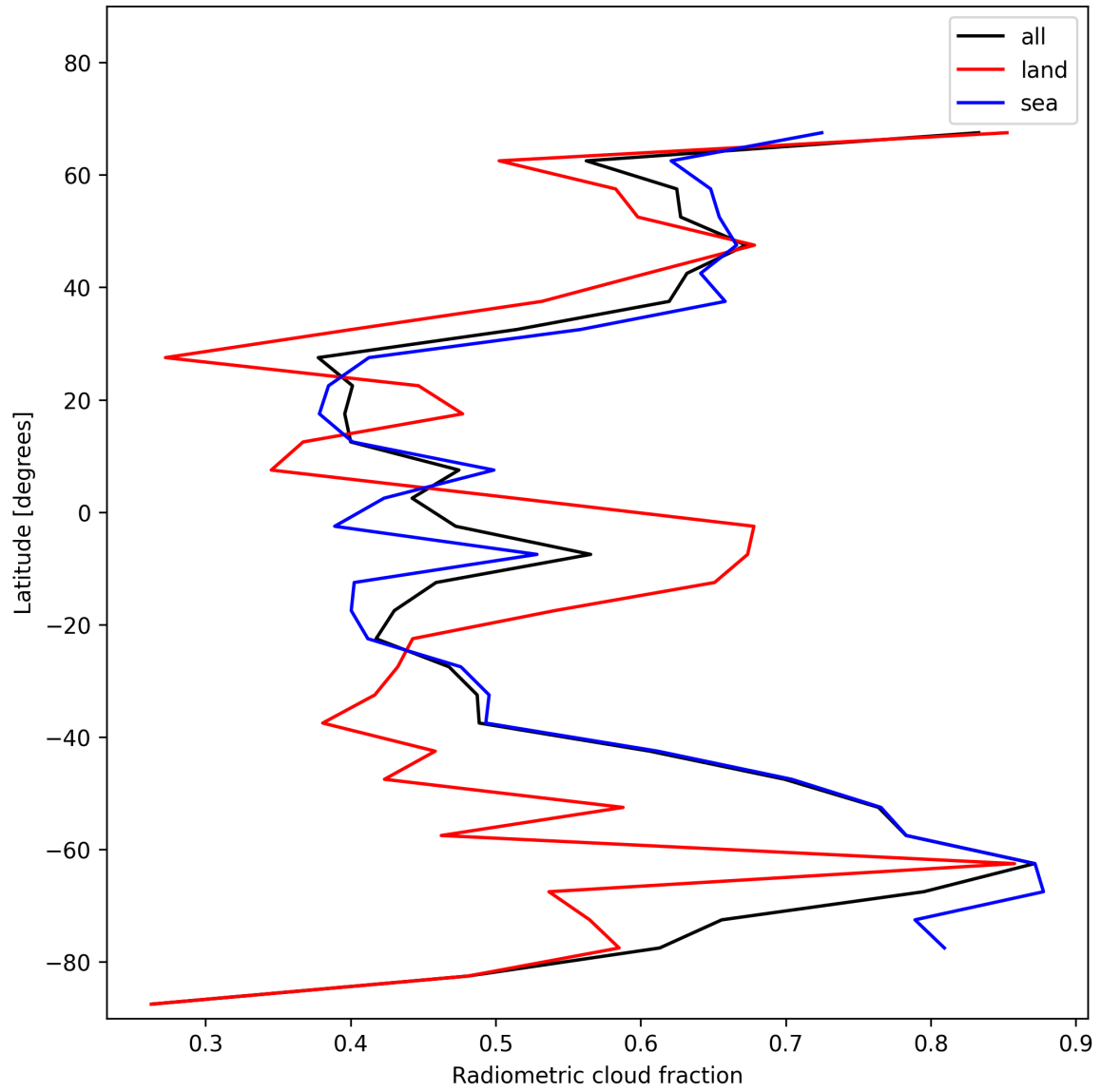


Figure 21: Zonal average of “Radiometric cloud fraction” for 2024-12-15 to 2024-12-16.

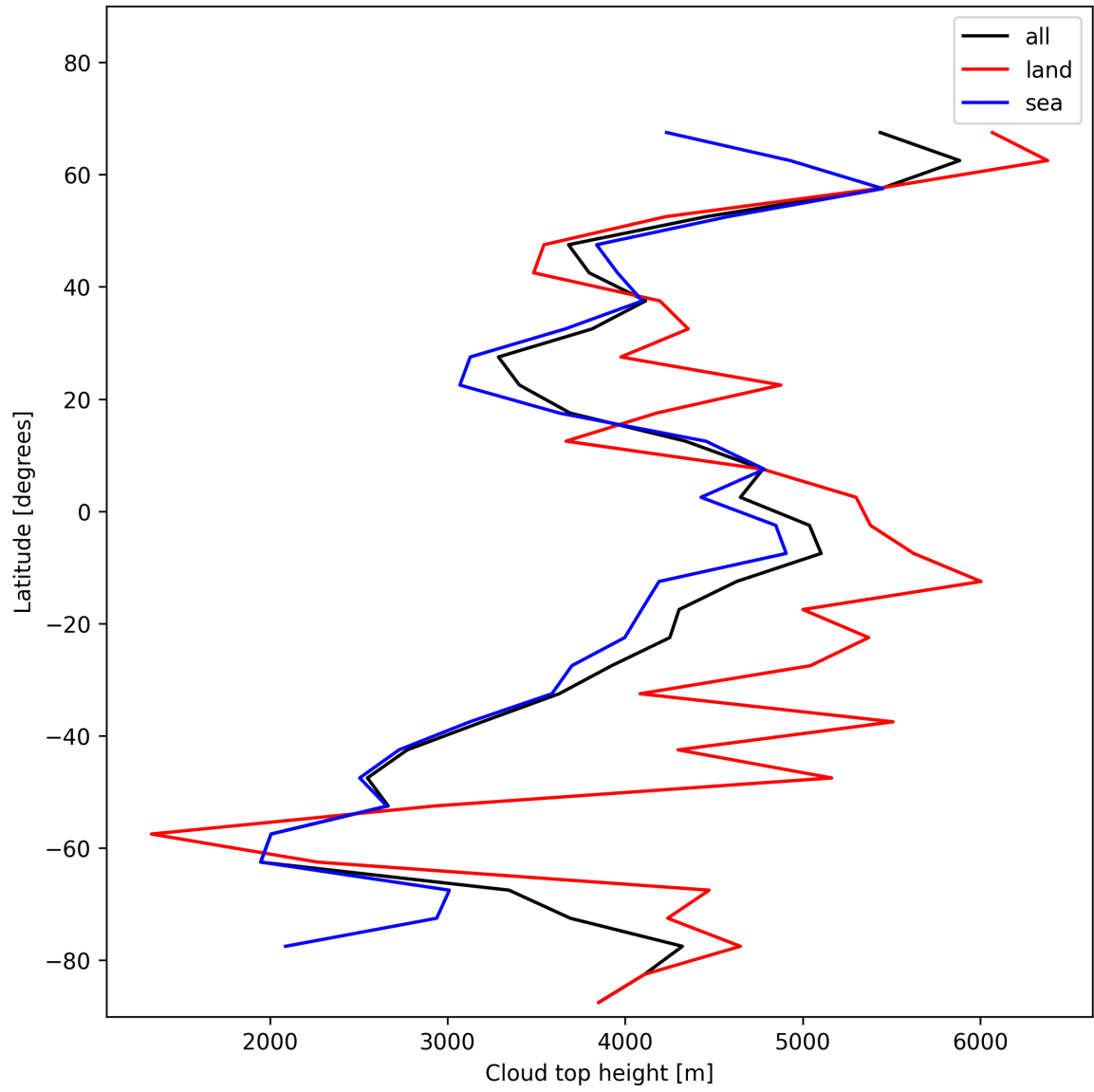


Figure 22: Zonal average of “Cloud top height” for 2024-12-15 to 2024-12-16.

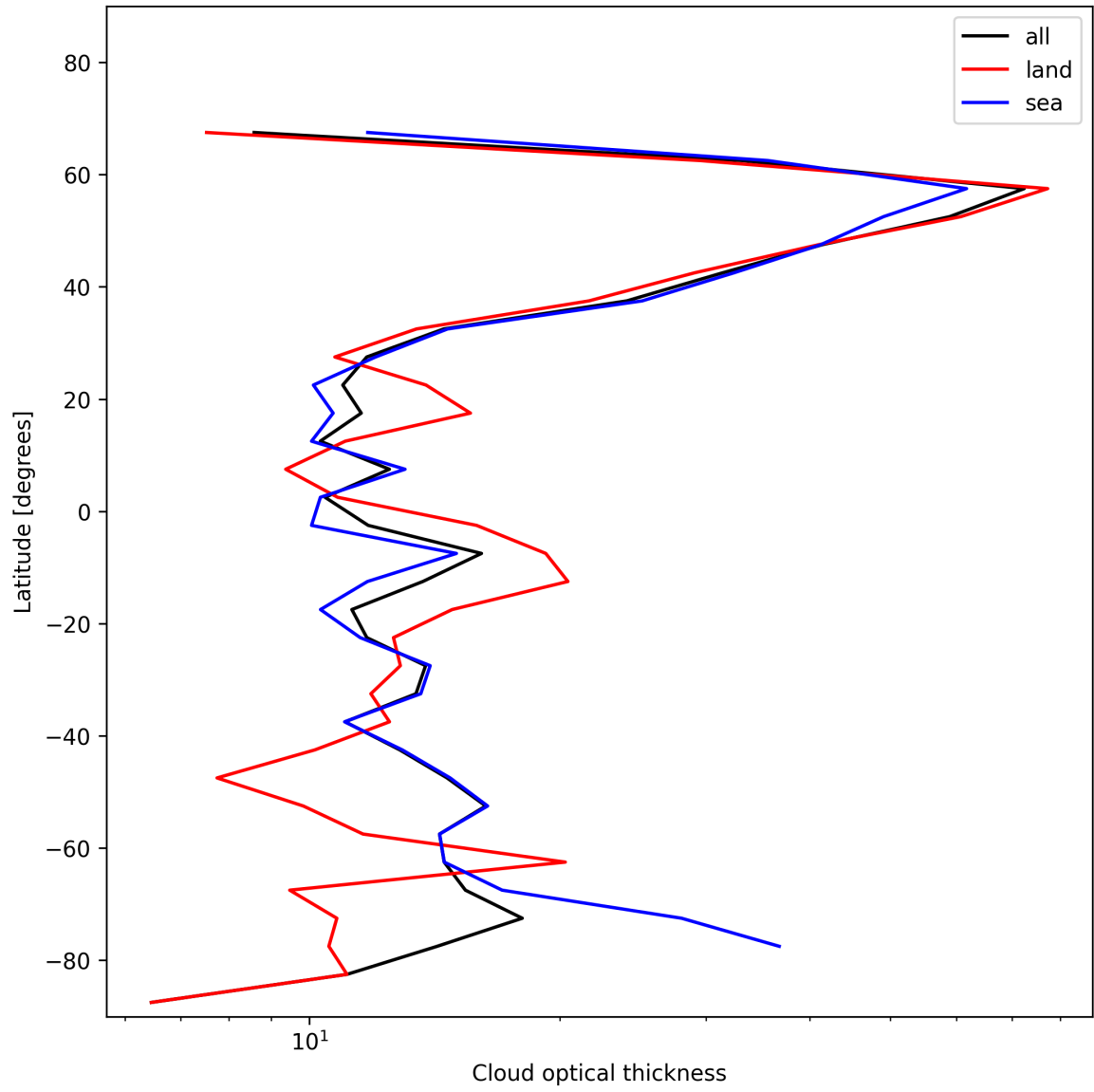


Figure 23: Zonal average of “Cloud optical thickness” for 2024-12-15 to 2024-12-16.

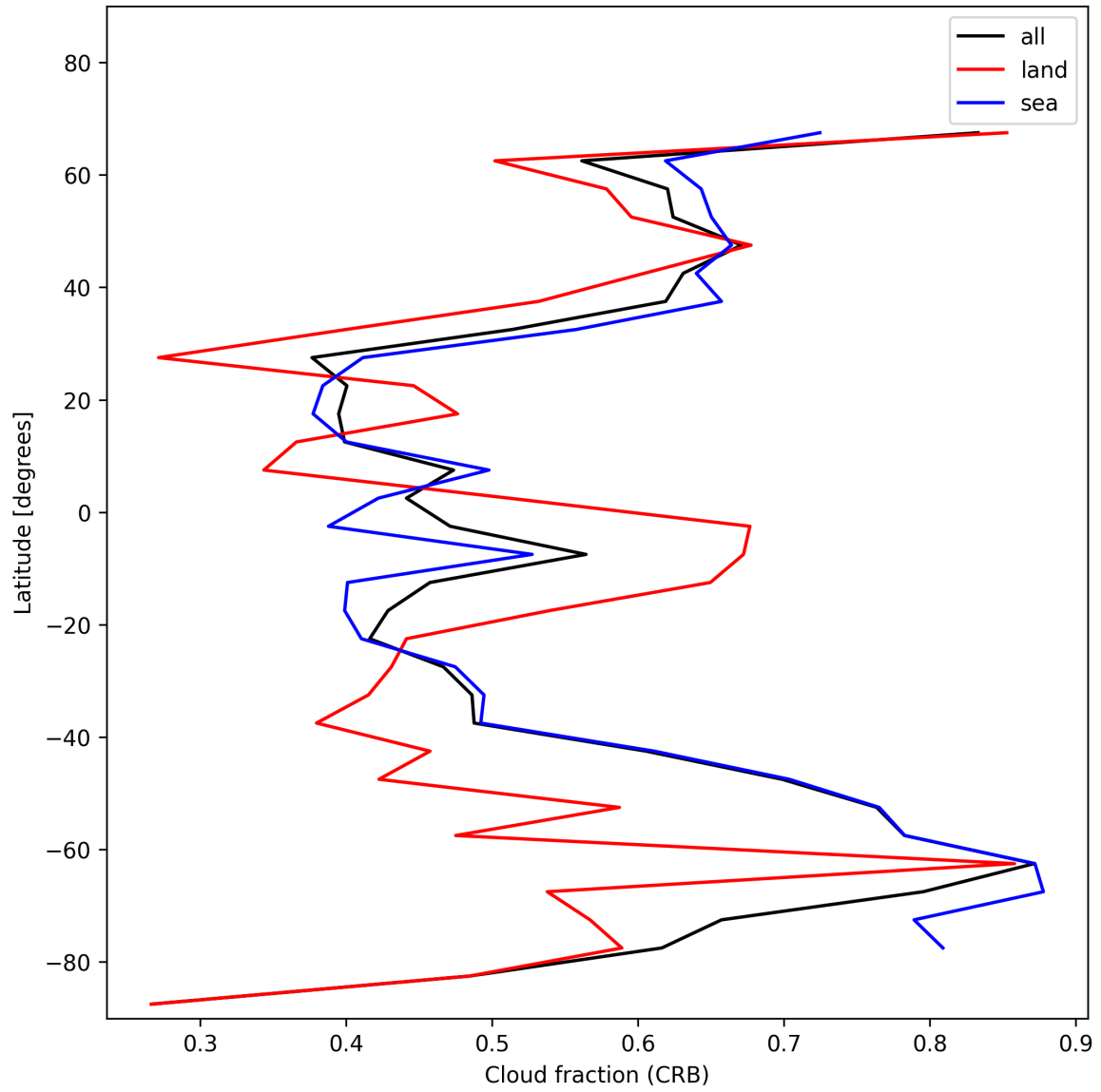


Figure 24: Zonal average of “Cloud fraction (CRB)” for 2024-12-15 to 2024-12-16.

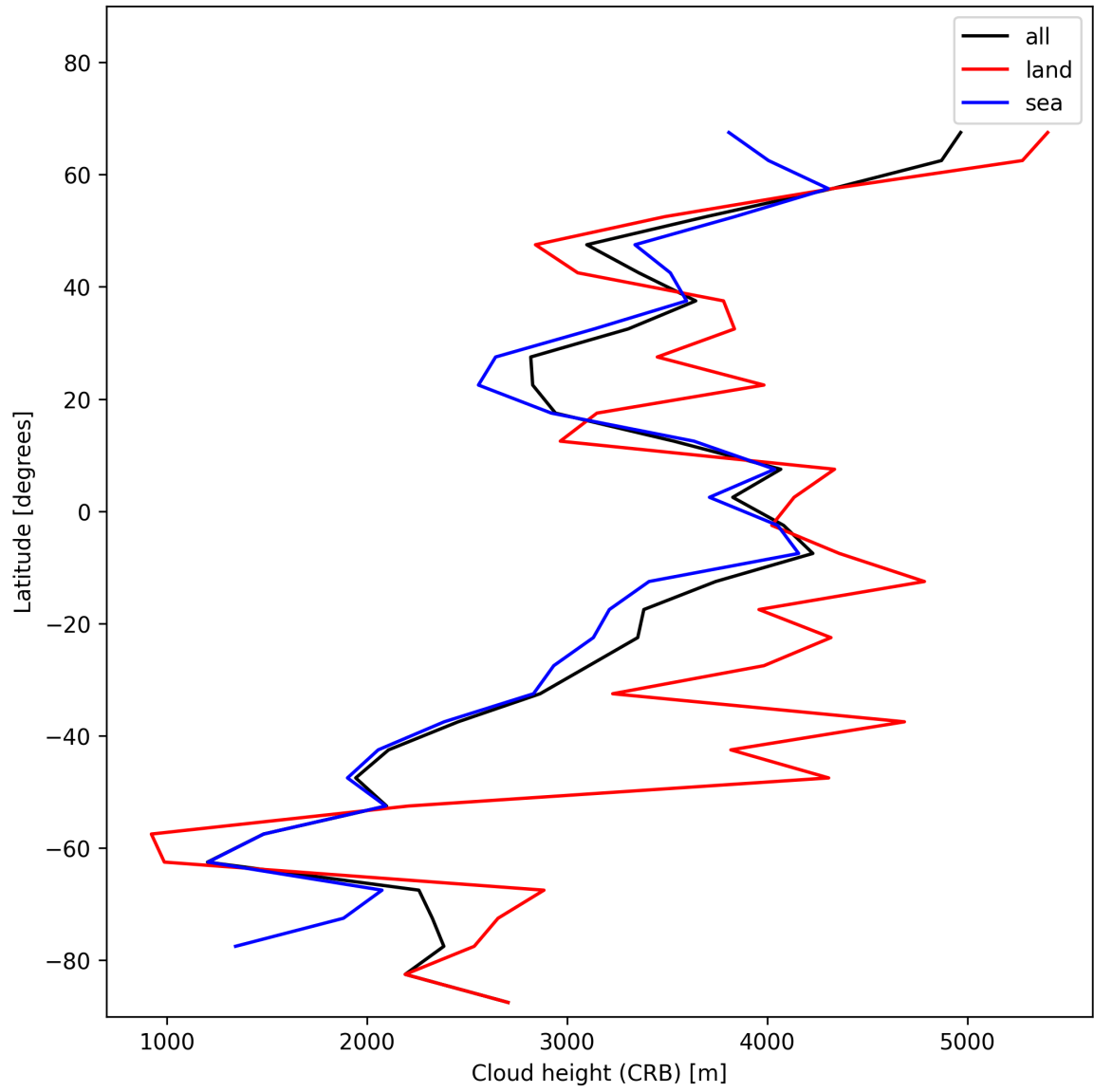


Figure 25: Zonal average of “Cloud height (CRB)” for 2024-12-15 to 2024-12-16.

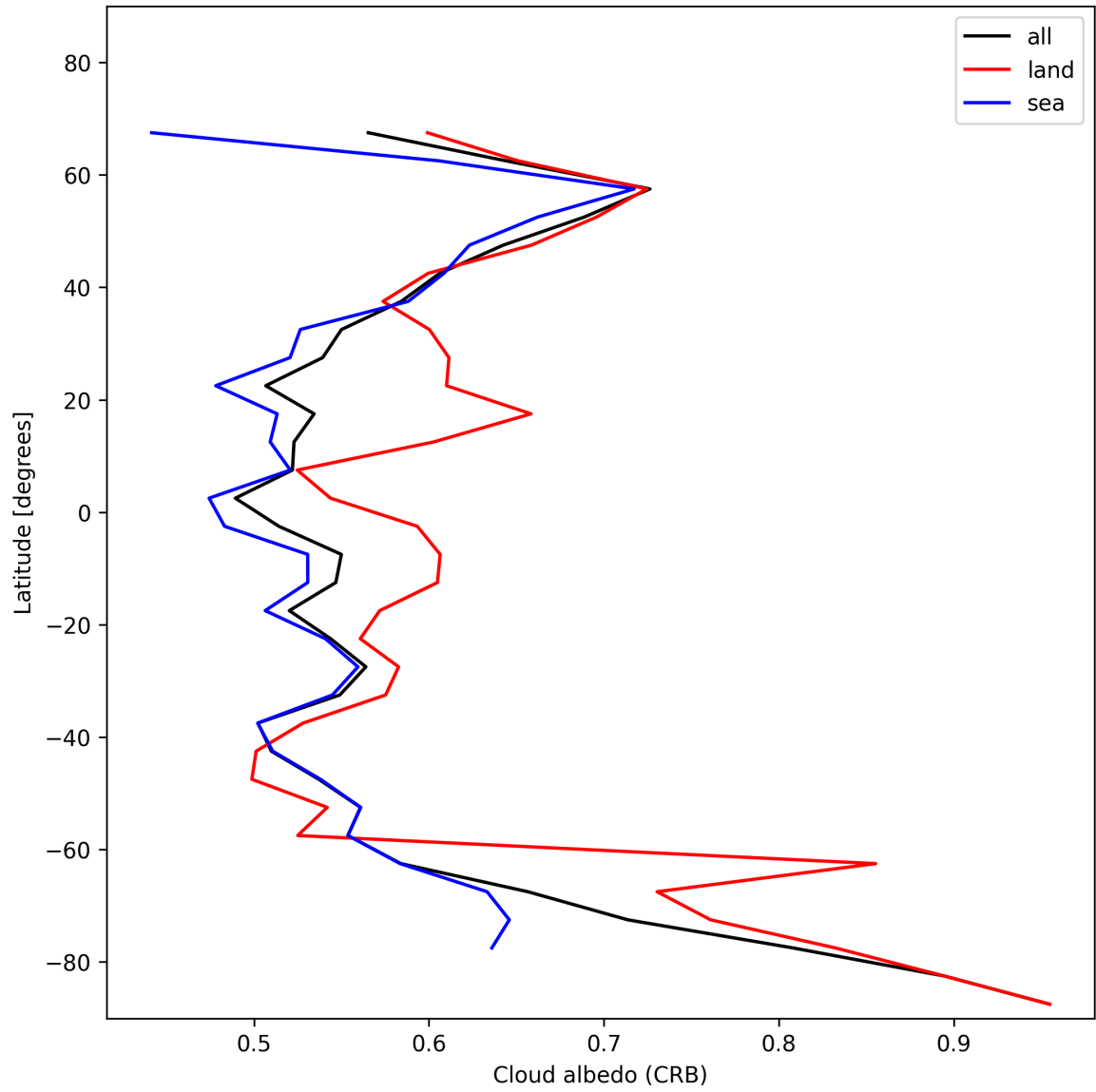


Figure 26: Zonal average of “Cloud albedo (CRB)” for 2024-12-15 to 2024-12-16.

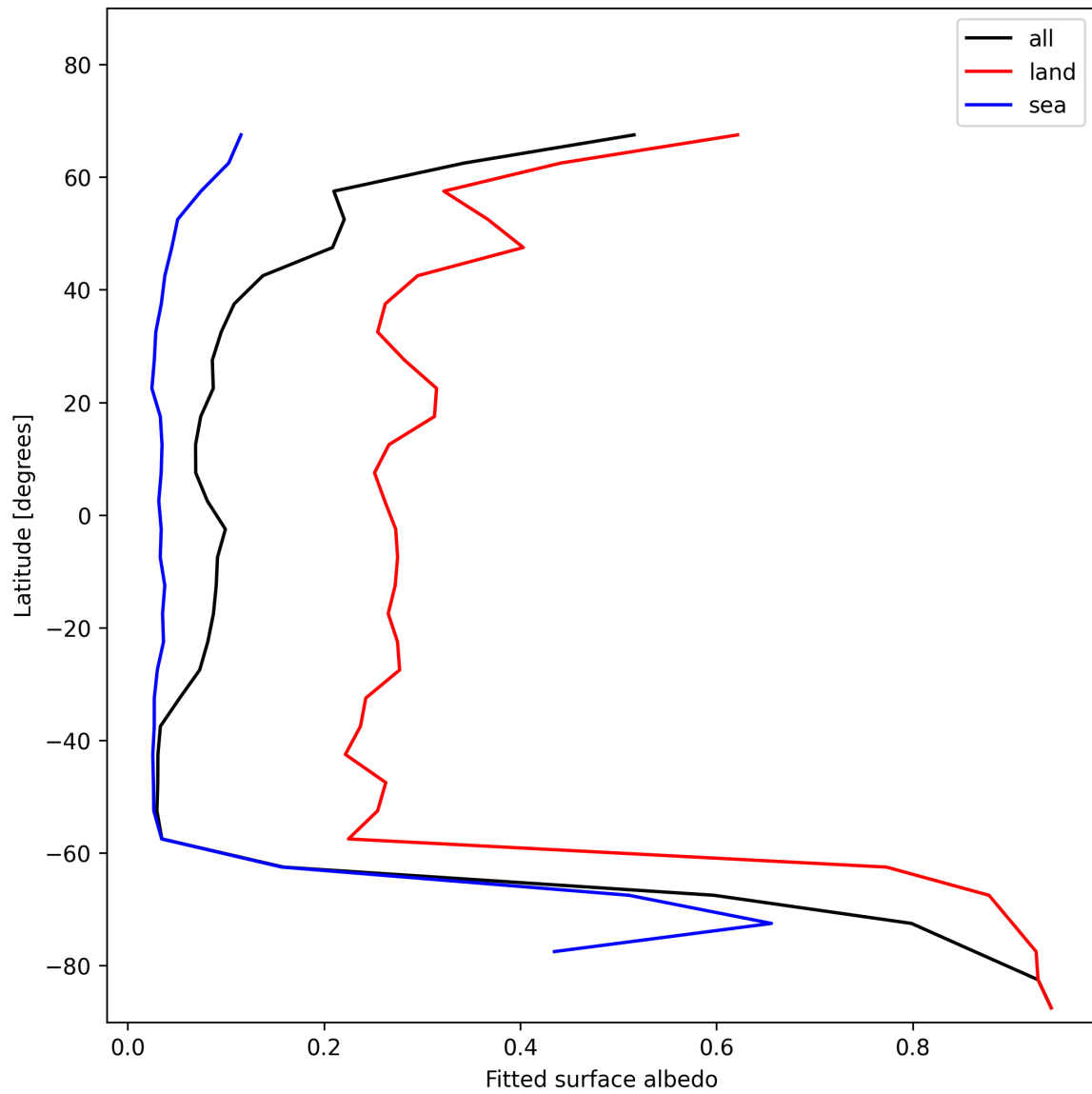


Figure 27: Zonal average of “Fitted surface albedo” for 2024-12-15 to 2024-12-16.

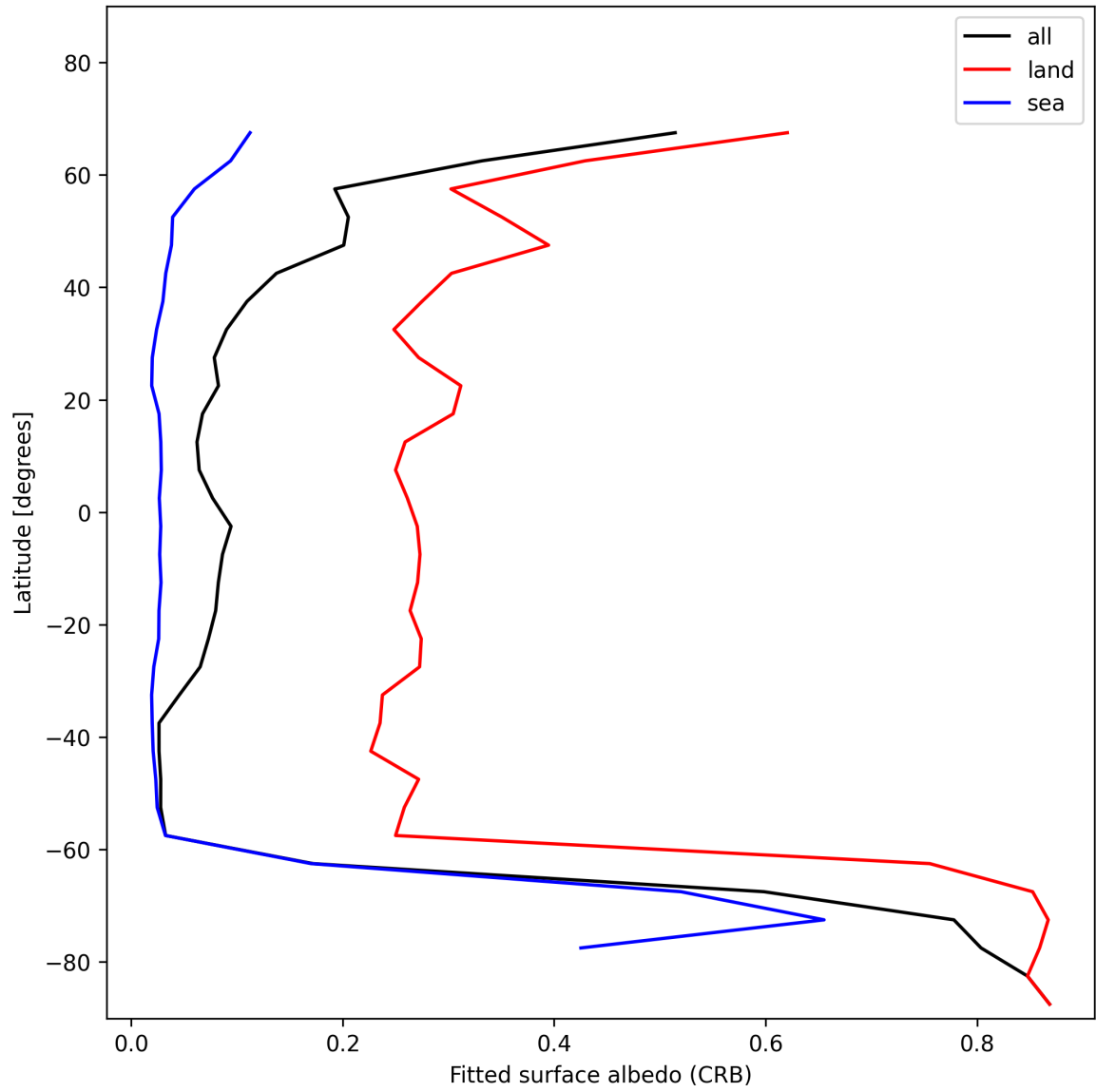


Figure 28: Zonal average of “Fitted surface albedo (CRB)” for 2024-12-15 to 2024-12-16.

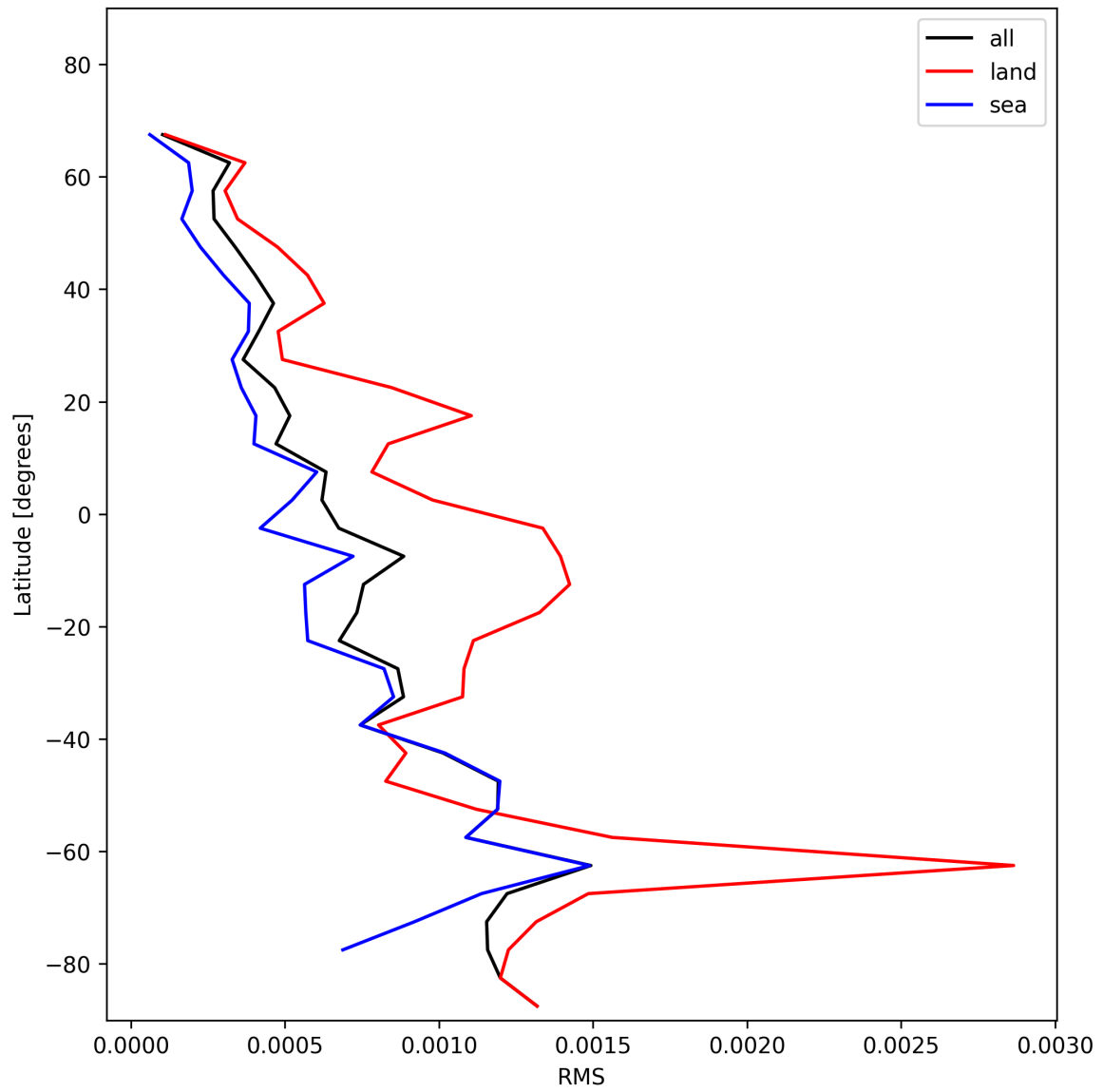


Figure 29: Zonal average of “RMS” for 2024-12-15 to 2024-12-16.

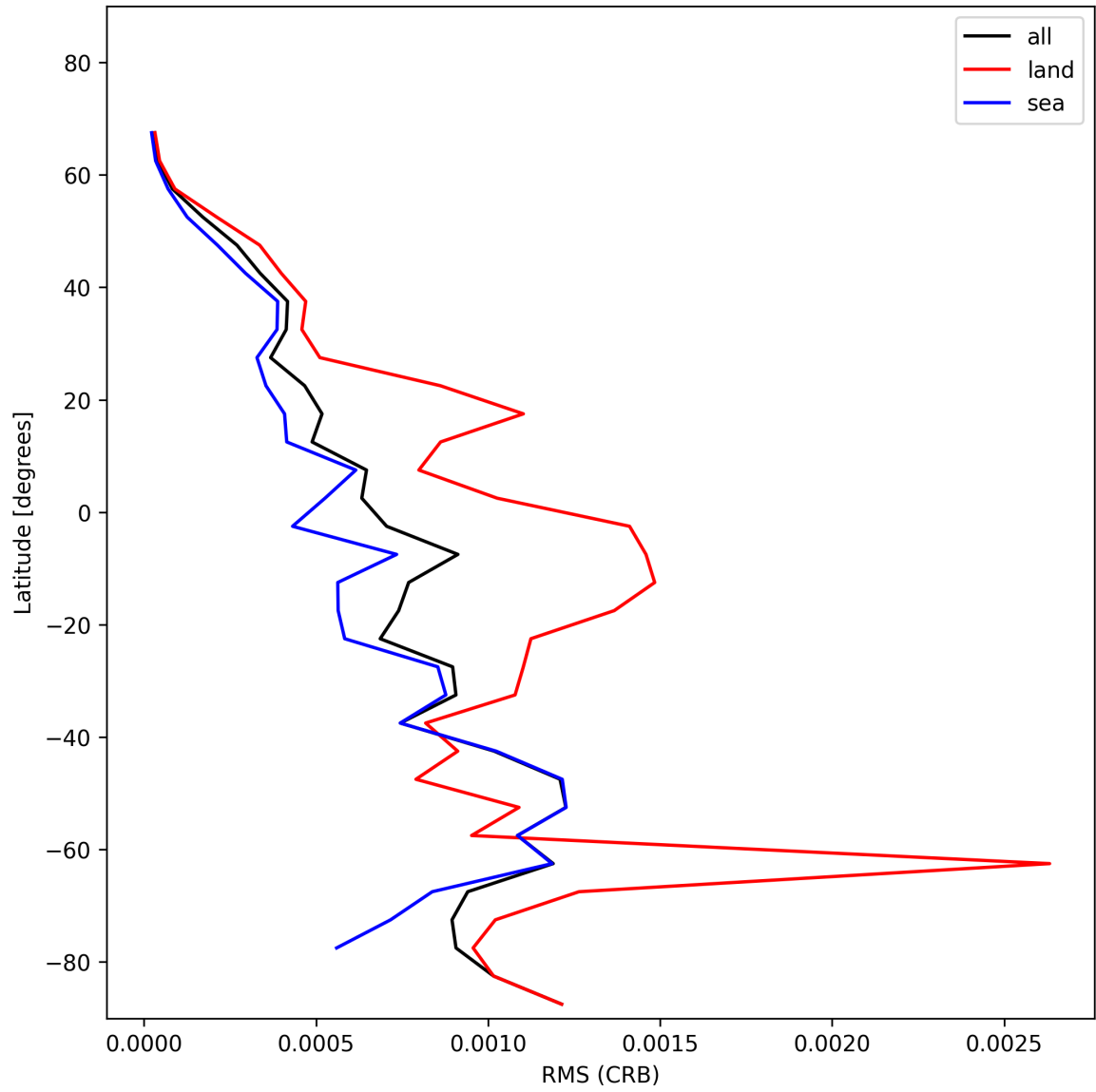


Figure 30: Zonal average of “RMS (CRB)” for 2024-12-15 to 2024-12-16.

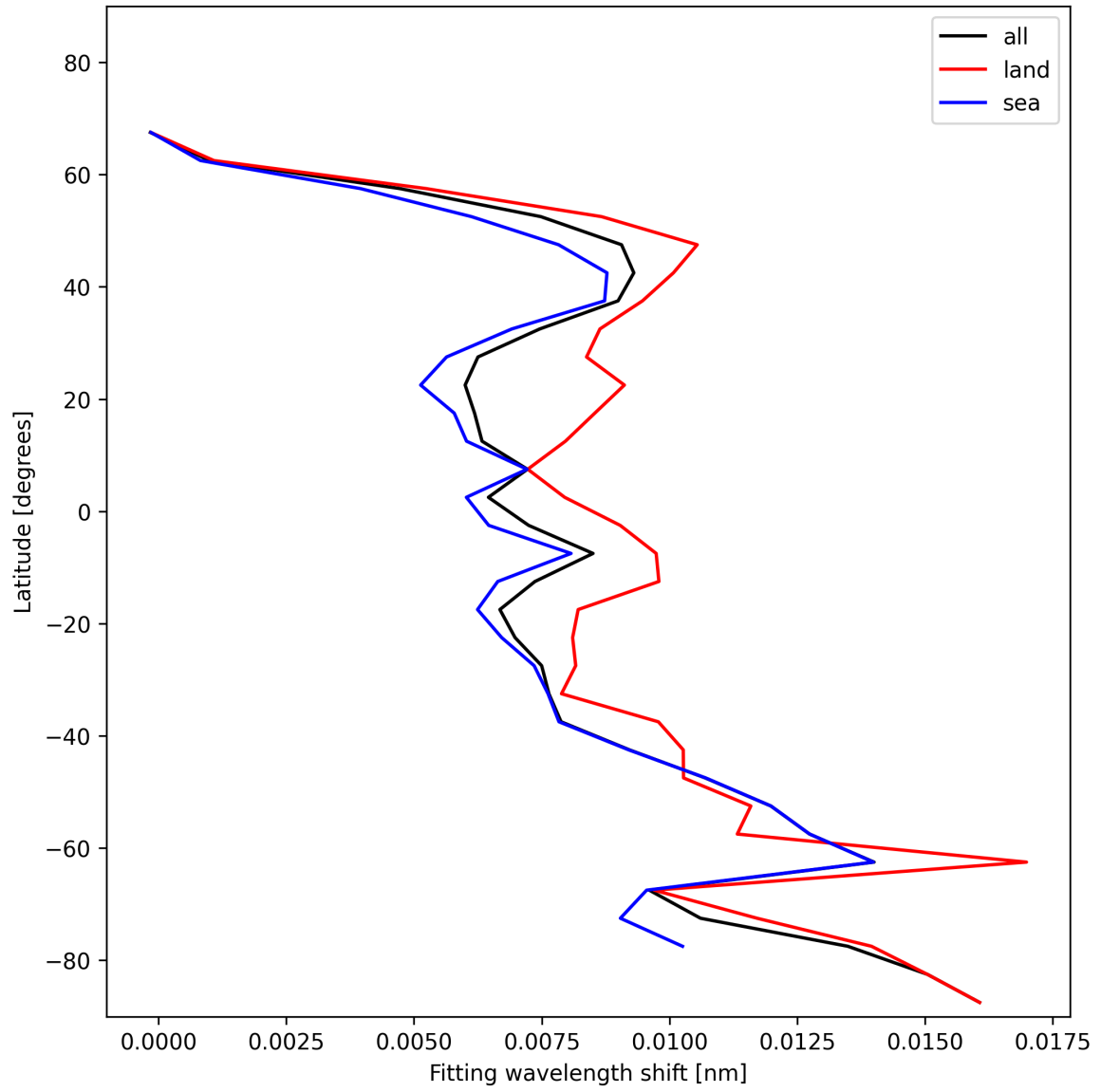


Figure 31: Zonal average of “Fitting wavelength shift” for 2024-12-15 to 2024-12-16.

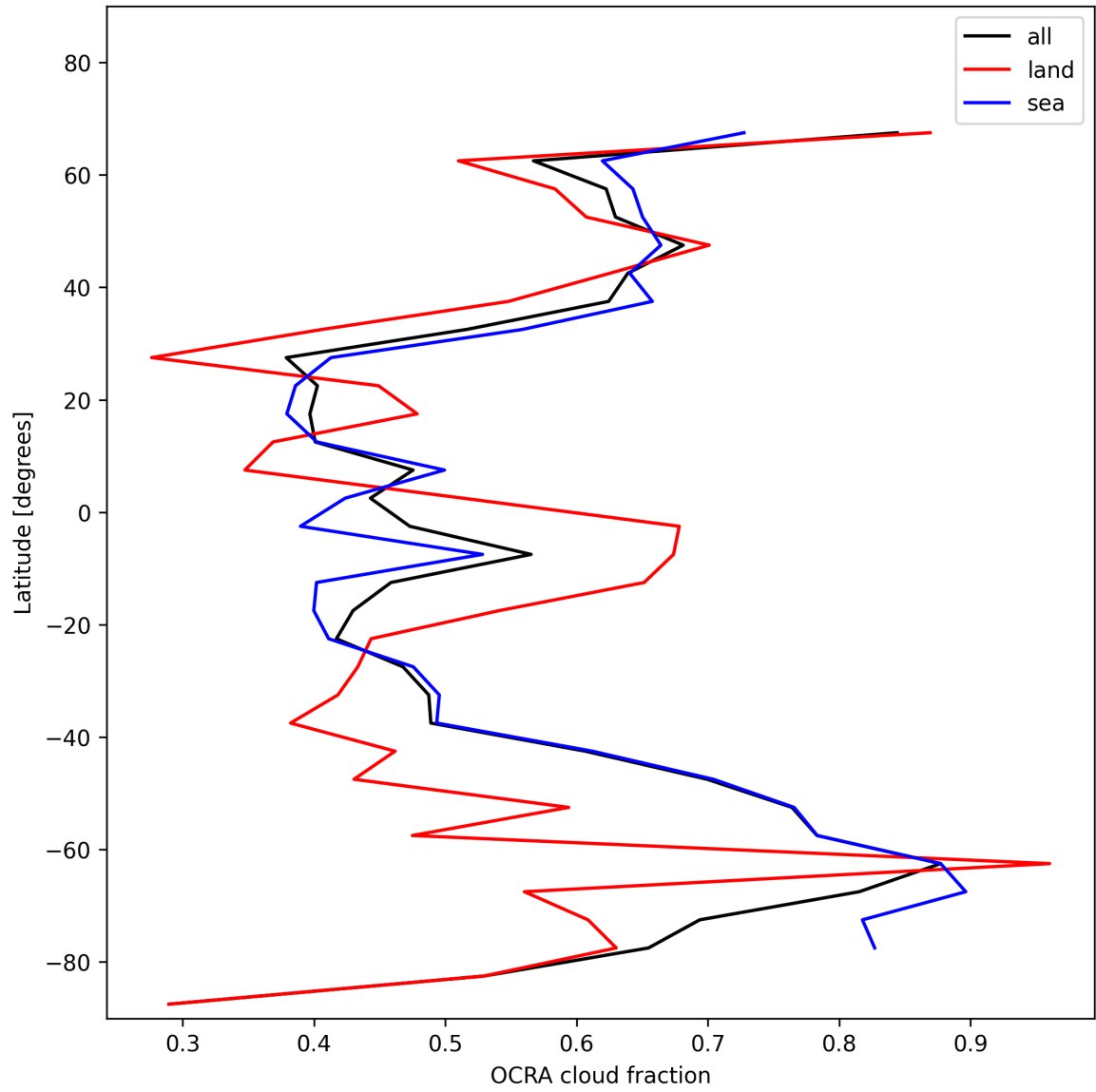


Figure 32: Zonal average of “OCRA cloud fraction” for 2024-12-15 to 2024-12-16.

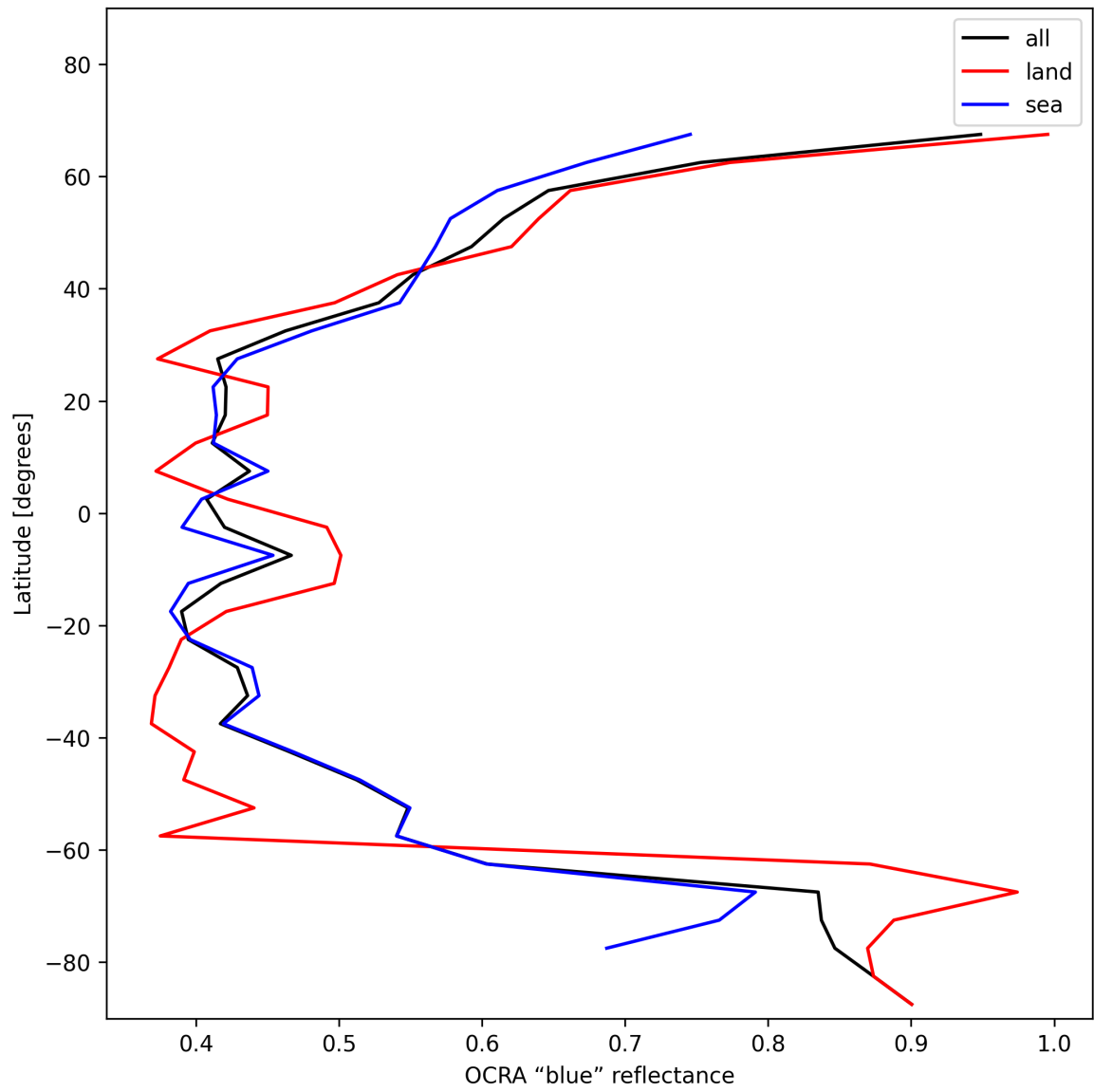


Figure 33: Zonal average of “OCRA “blue” reflectance” for 2024-12-15 to 2024-12-16.

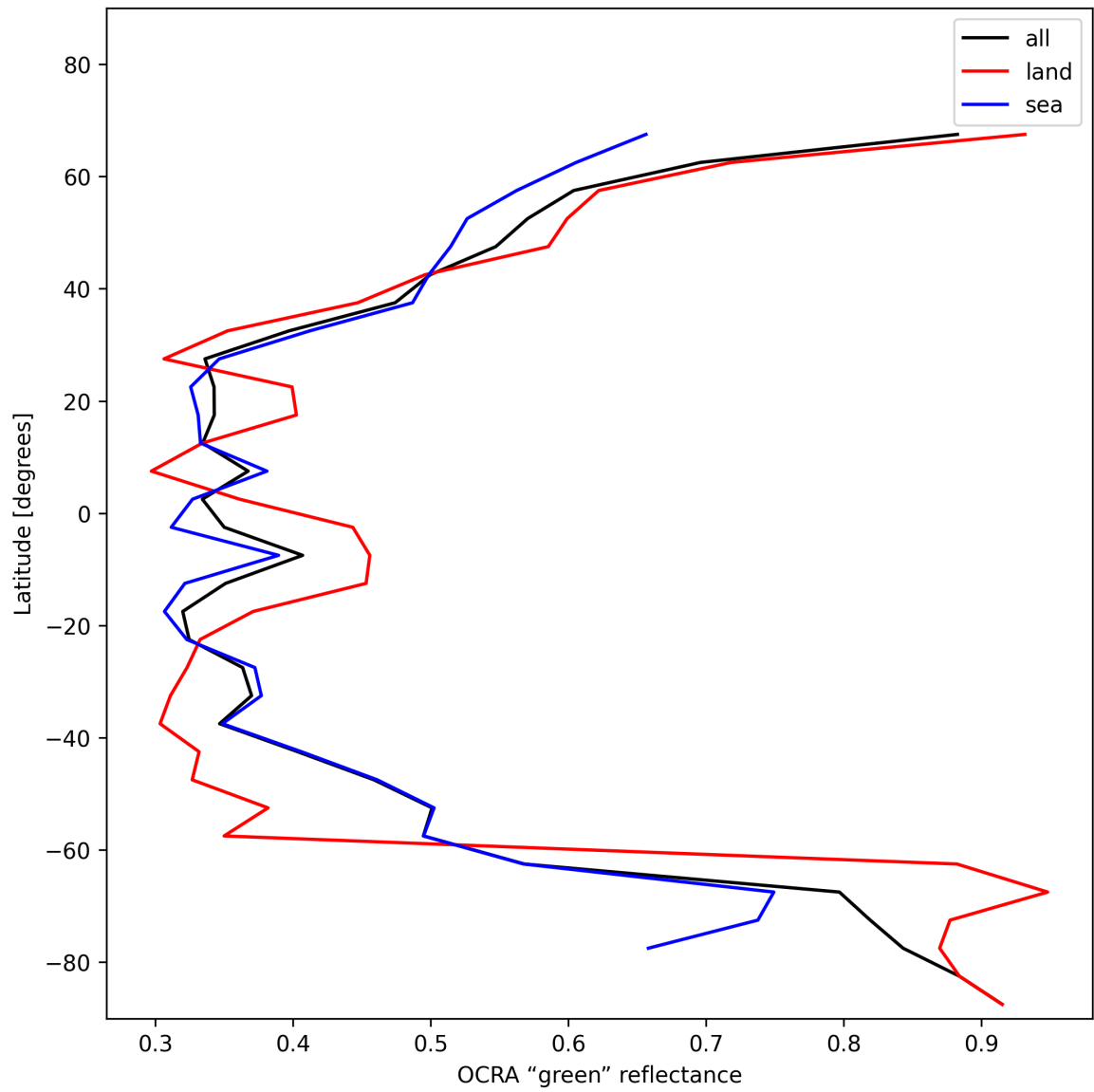


Figure 34: Zonal average of “OCRA “green” reflectance” for 2024-12-15 to 2024-12-16.

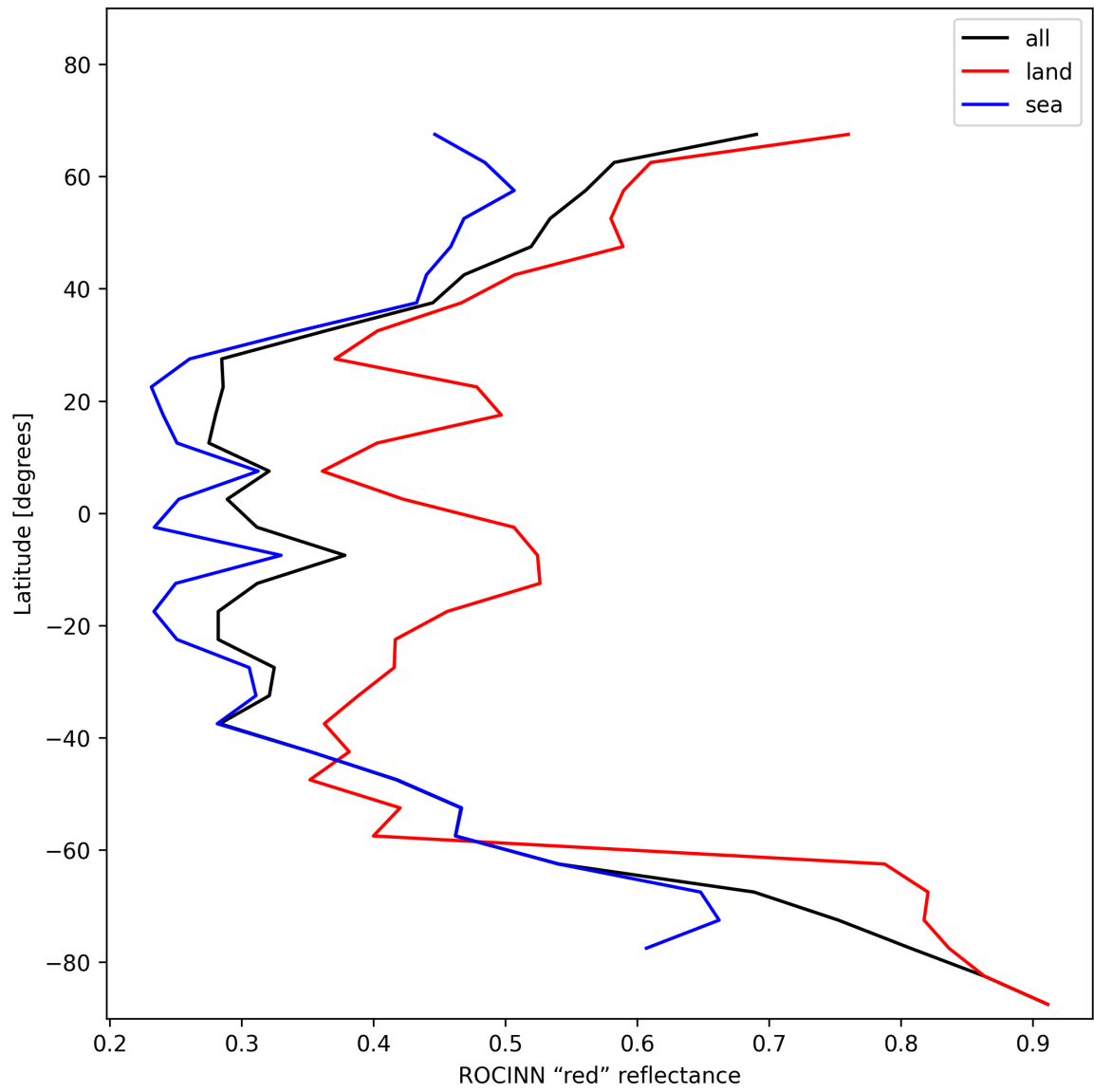


Figure 35: Zonal average of “ROCINN “red” reflectance” for 2024-12-15 to 2024-12-16.

8 Histograms

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

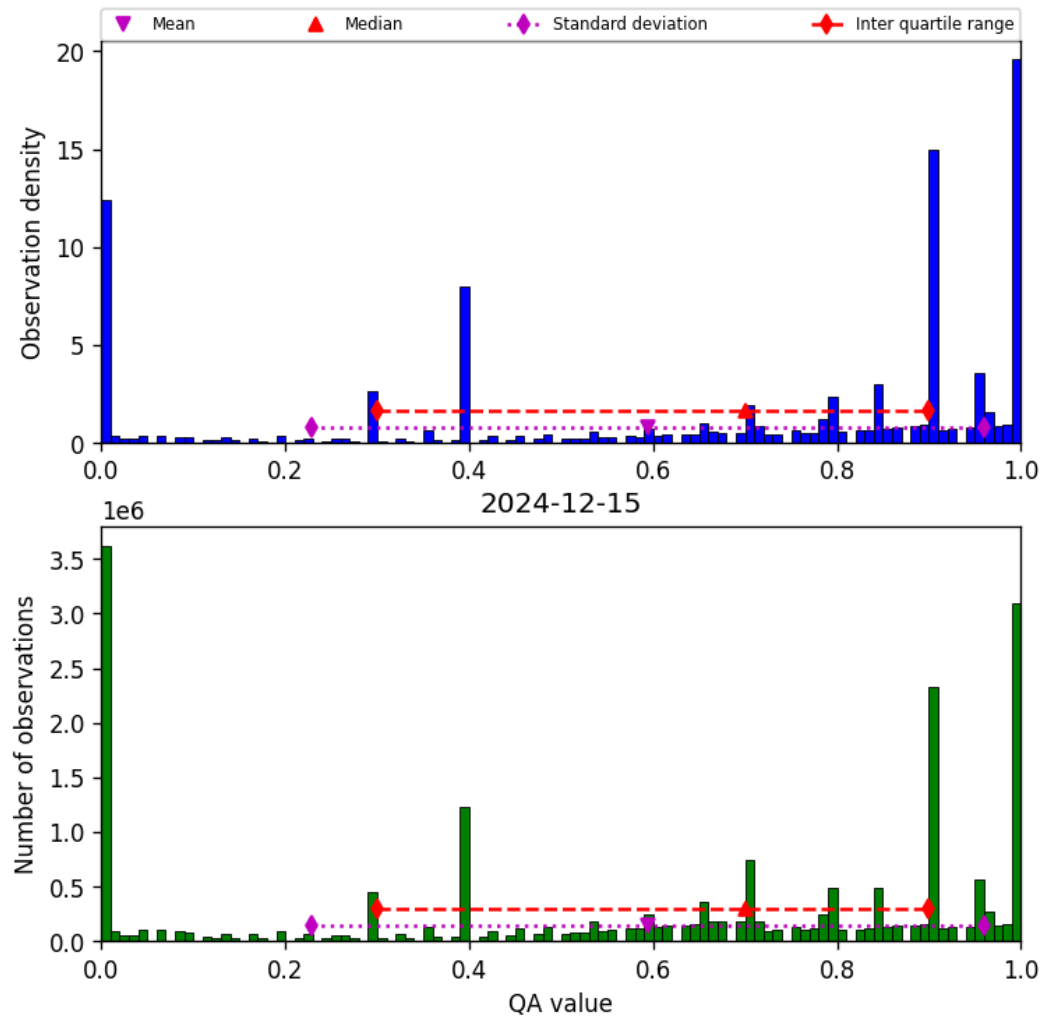


Figure 36: Histogram of “QA value” for 2024-12-15 to 2024-12-16

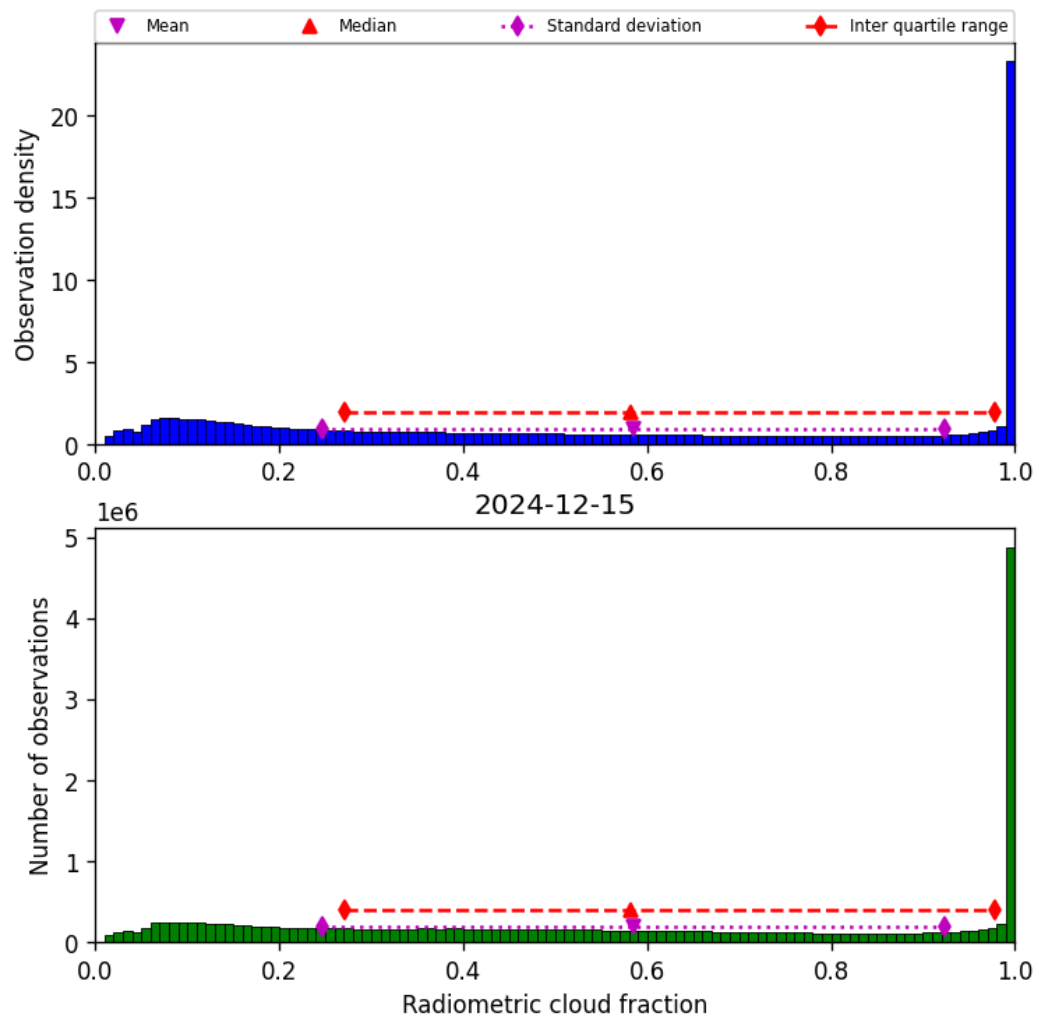


Figure 37: Histogram of “Radiometric cloud fraction” for 2024-12-15 to 2024-12-16

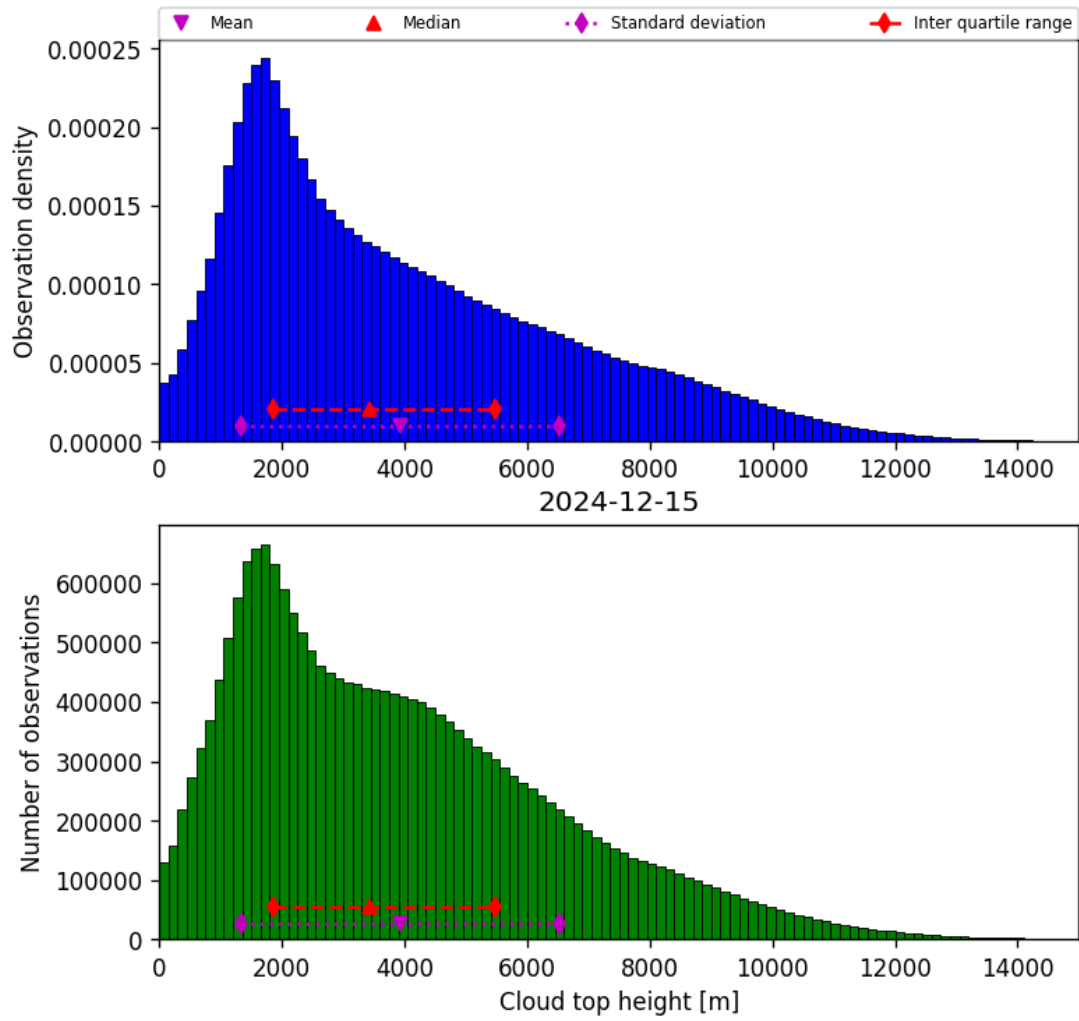


Figure 38: Histogram of “Cloud top height” for 2024-12-15 to 2024-12-16

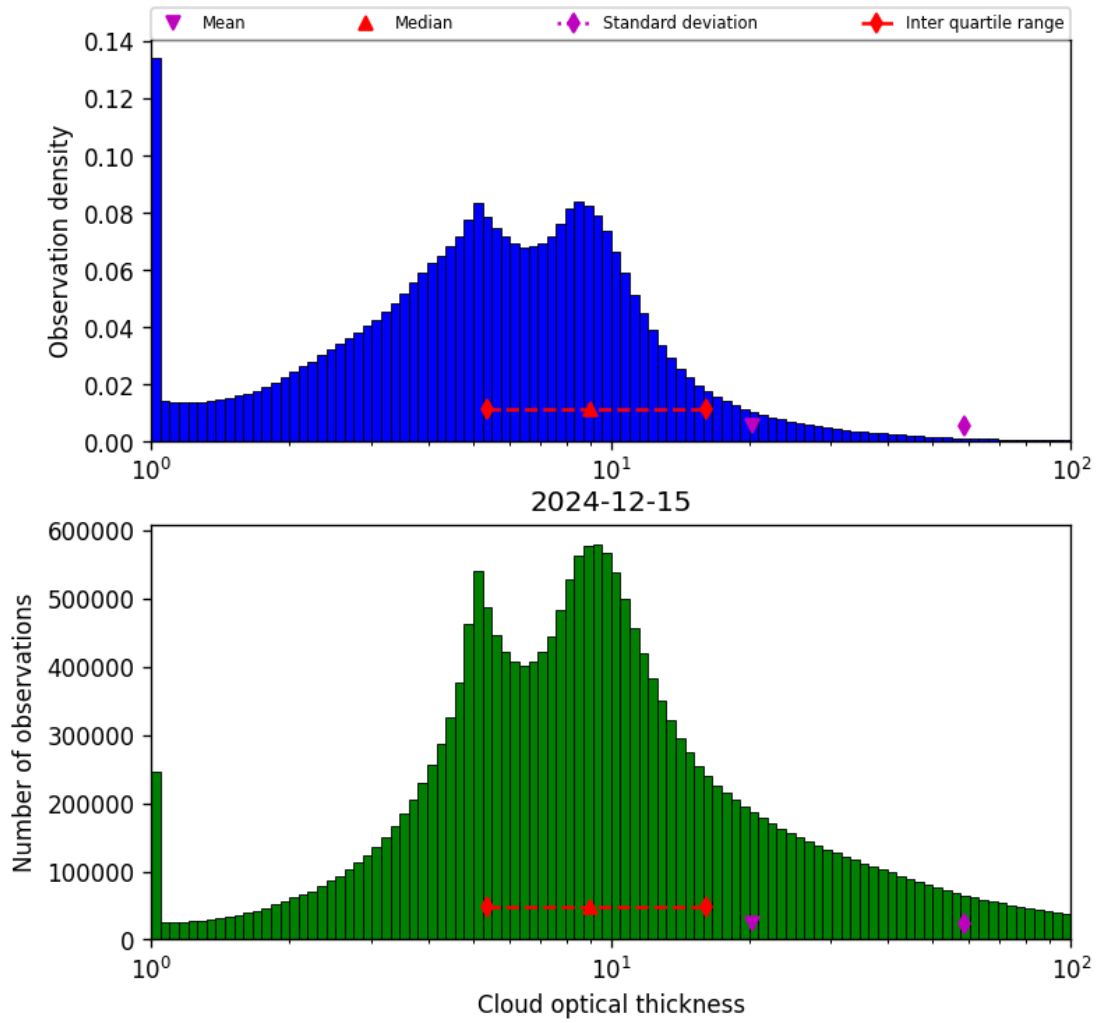


Figure 39: Histogram of “Cloud optical thickness” for 2024-12-15 to 2024-12-16

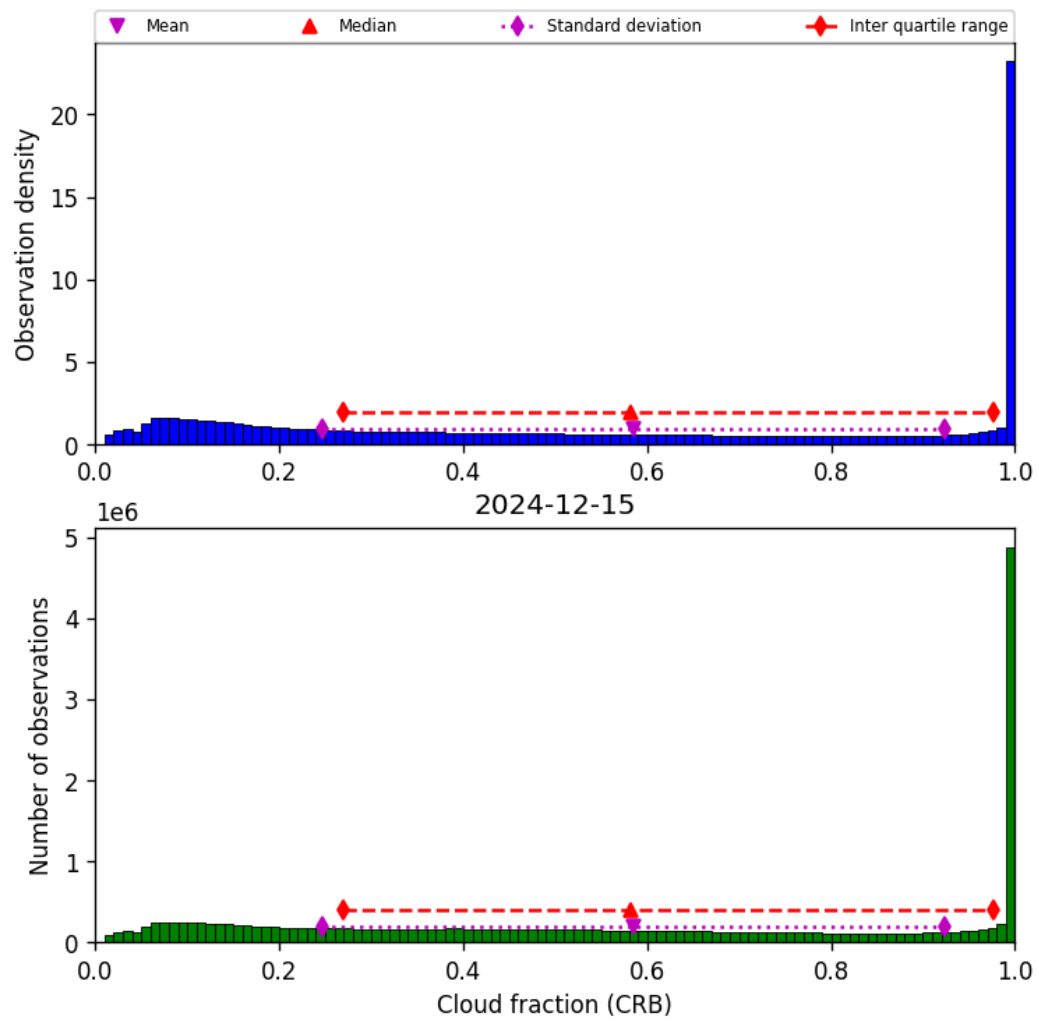


Figure 40: Histogram of “Cloud fraction (CRB)” for 2024-12-15 to 2024-12-16

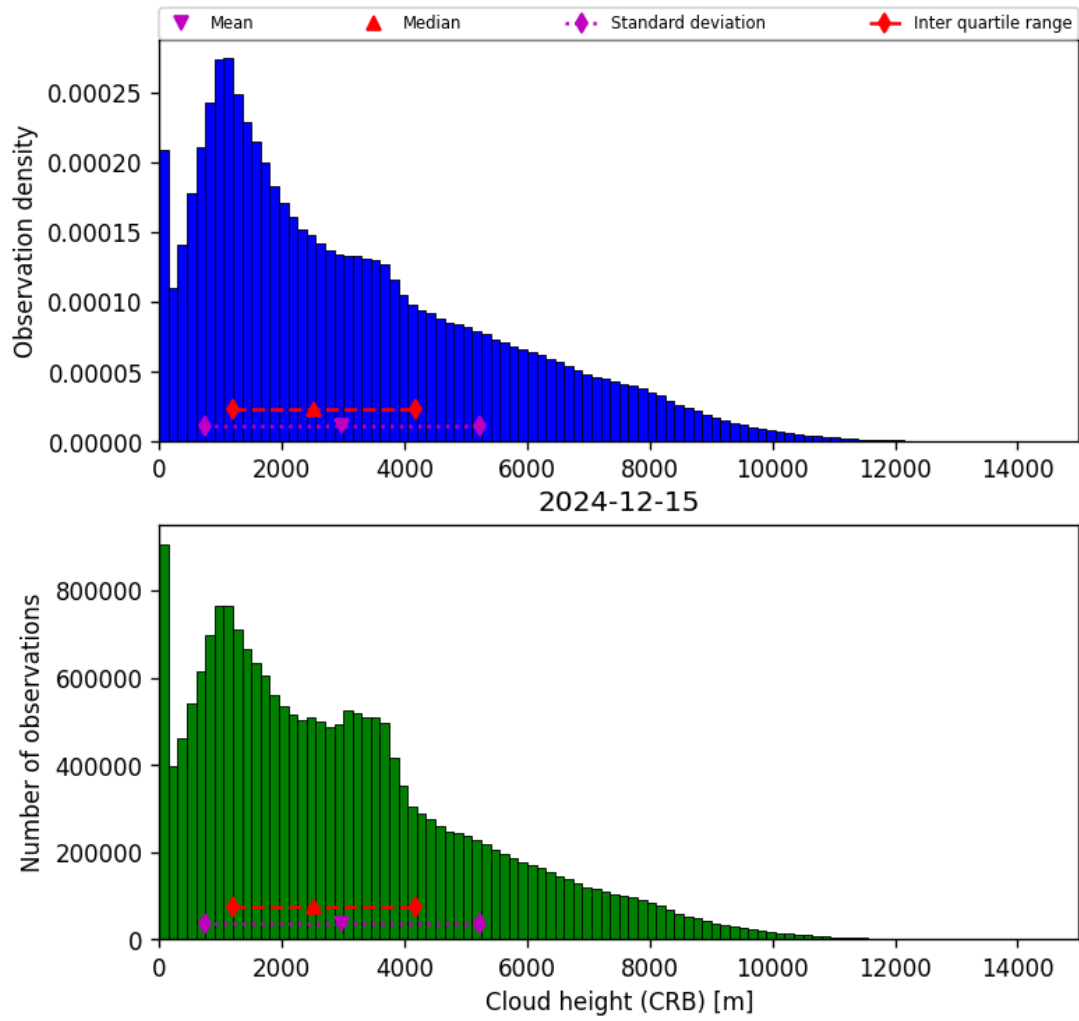


Figure 41: Histogram of “Cloud height (CRB)” for 2024-12-15 to 2024-12-16

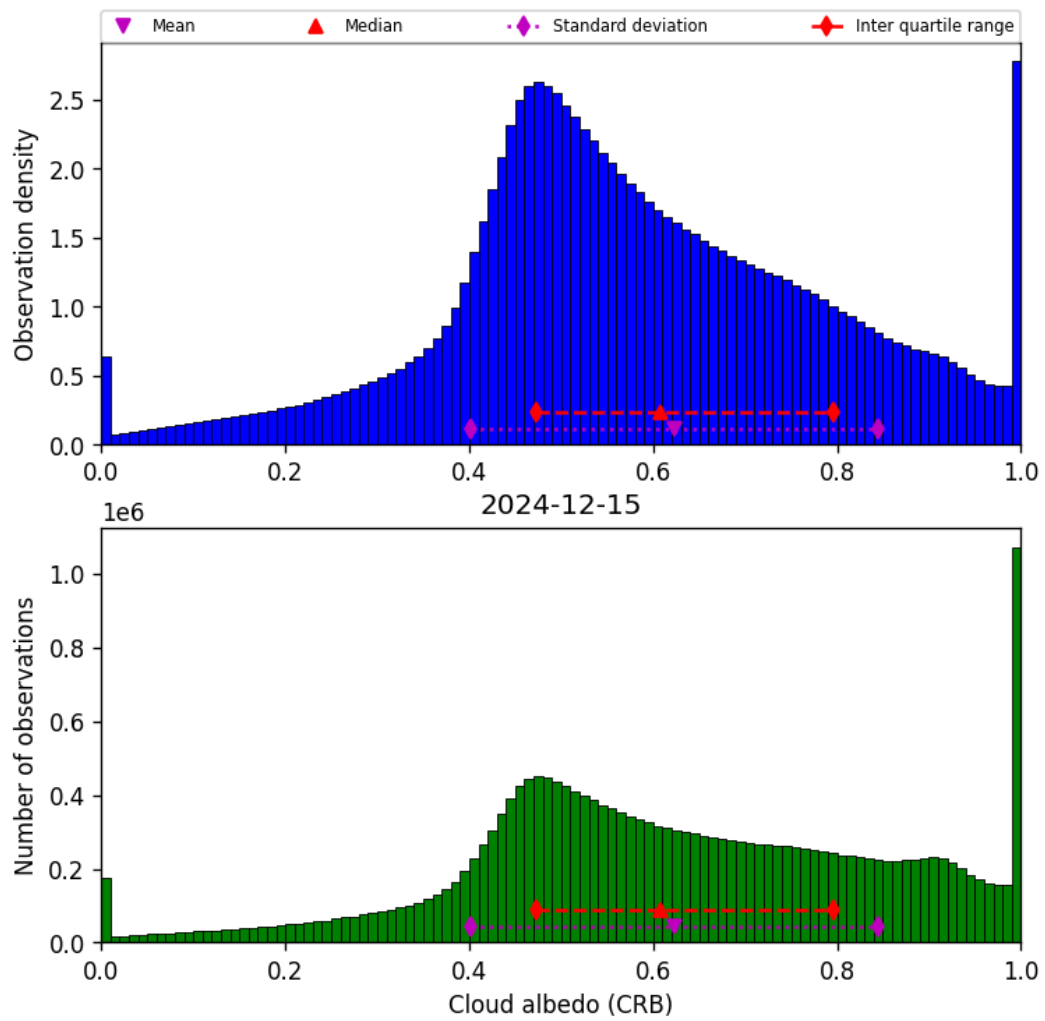


Figure 42: Histogram of “Cloud albedo (CRB)” for 2024-12-15 to 2024-12-16

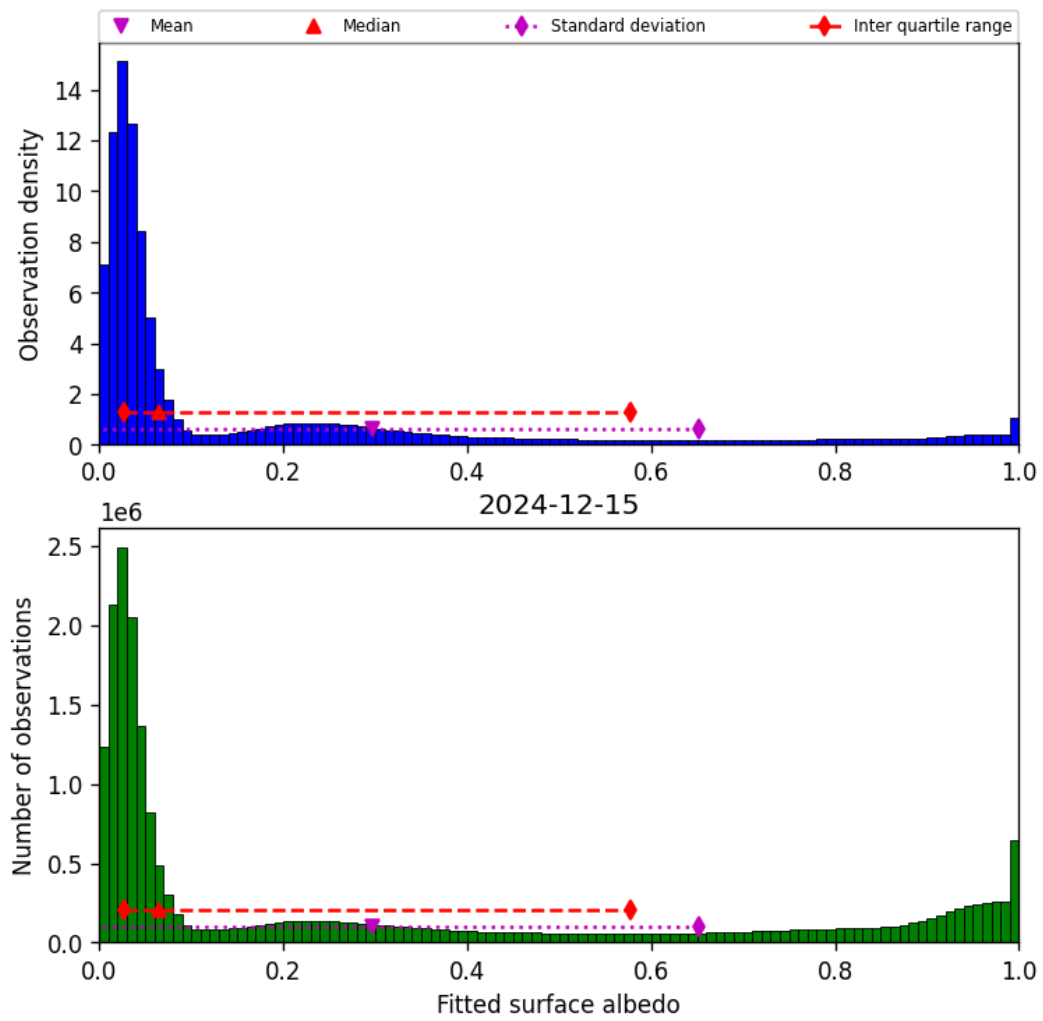


Figure 43: Histogram of “Fitted surface albedo” for 2024-12-15 to 2024-12-16

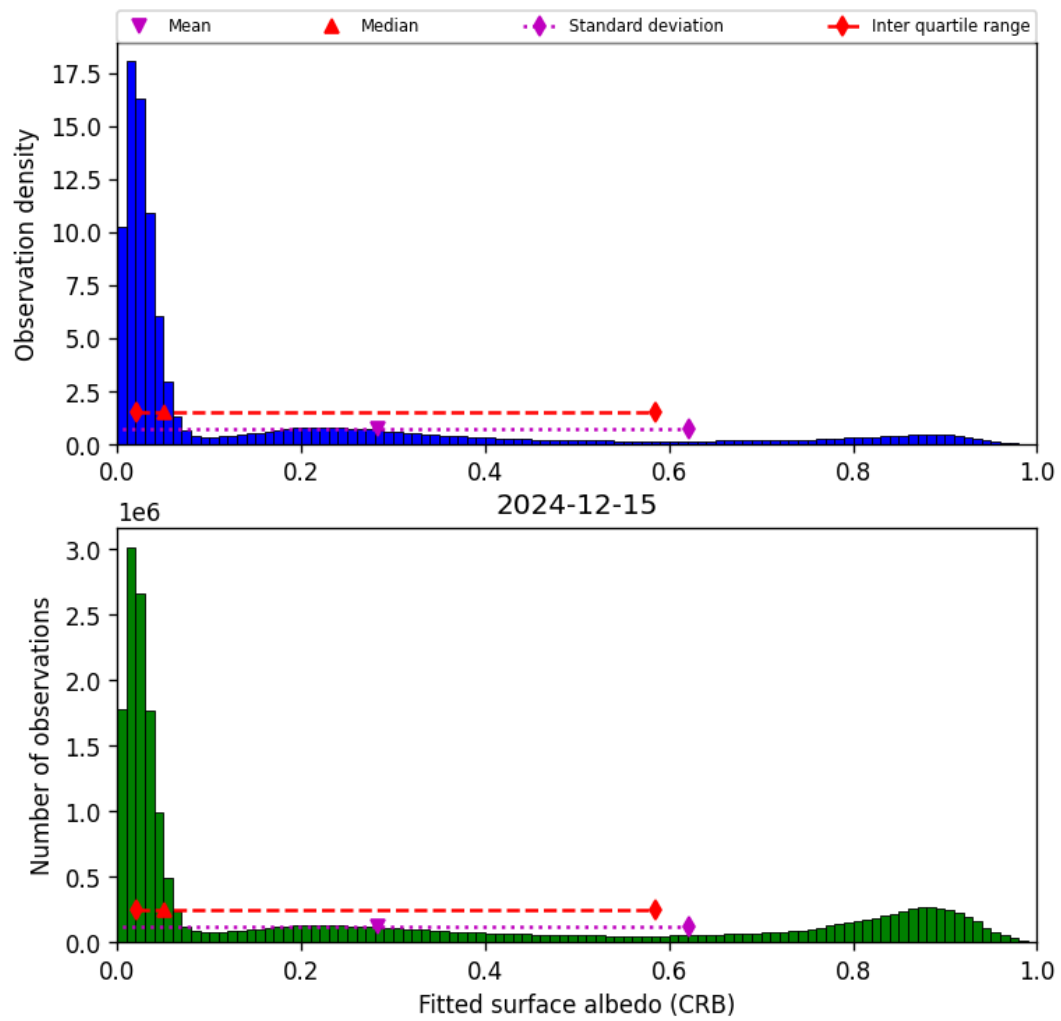


Figure 44: Histogram of “Fitted surface albedo (CRB)” for 2024-12-15 to 2024-12-16

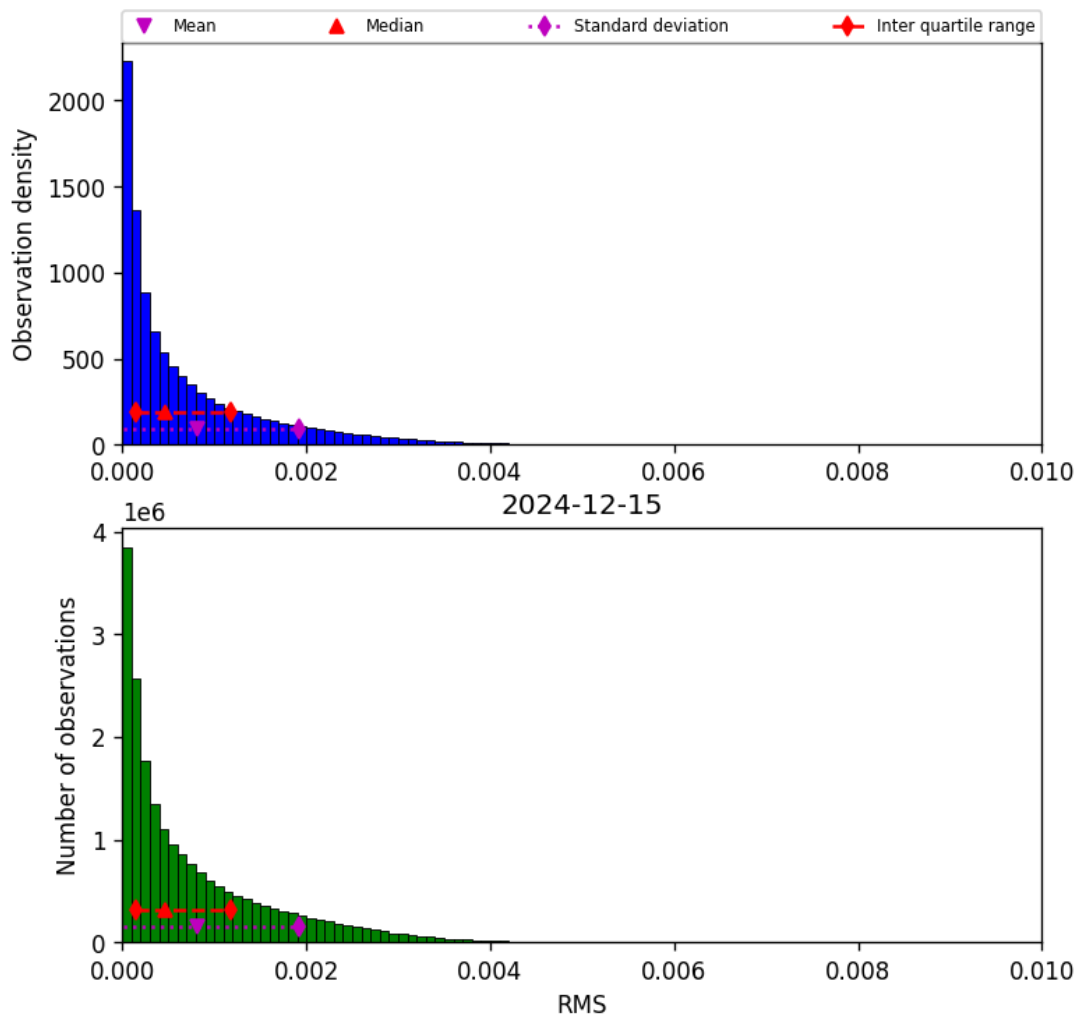


Figure 45: Histogram of “RMS” for 2024-12-15 to 2024-12-16

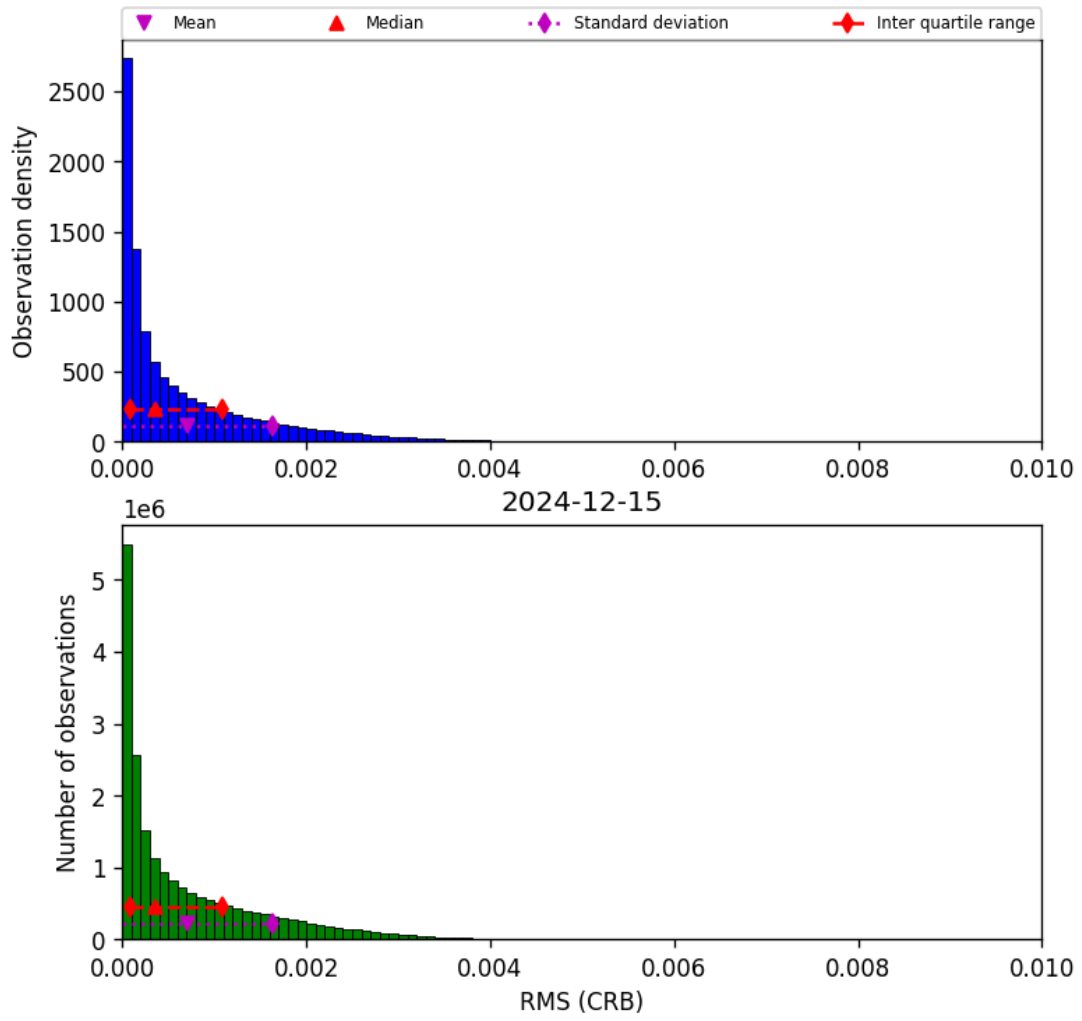


Figure 46: Histogram of “RMS (CRB)” for 2024-12-15 to 2024-12-16

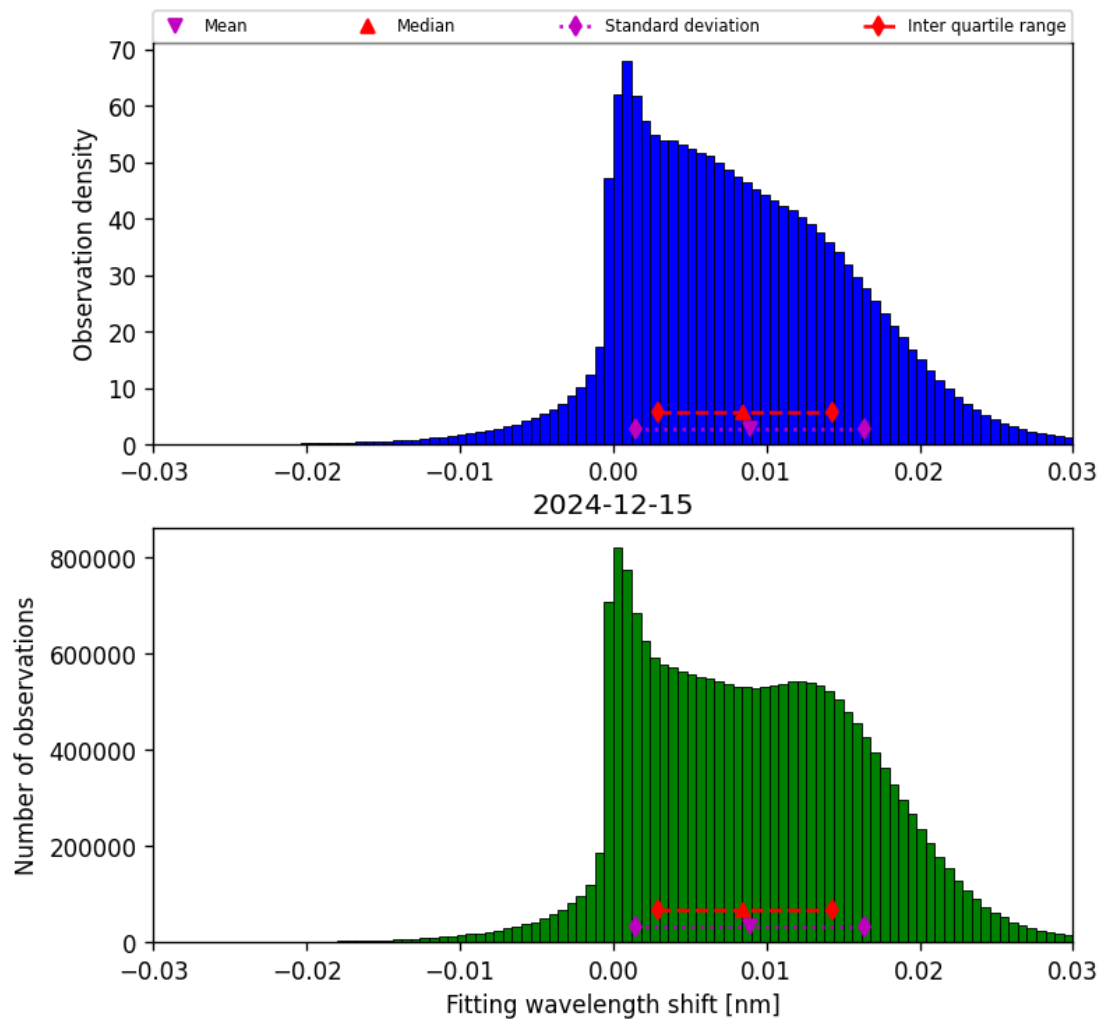


Figure 47: Histogram of “Fitting wavelength shift” for 2024-12-15 to 2024-12-16

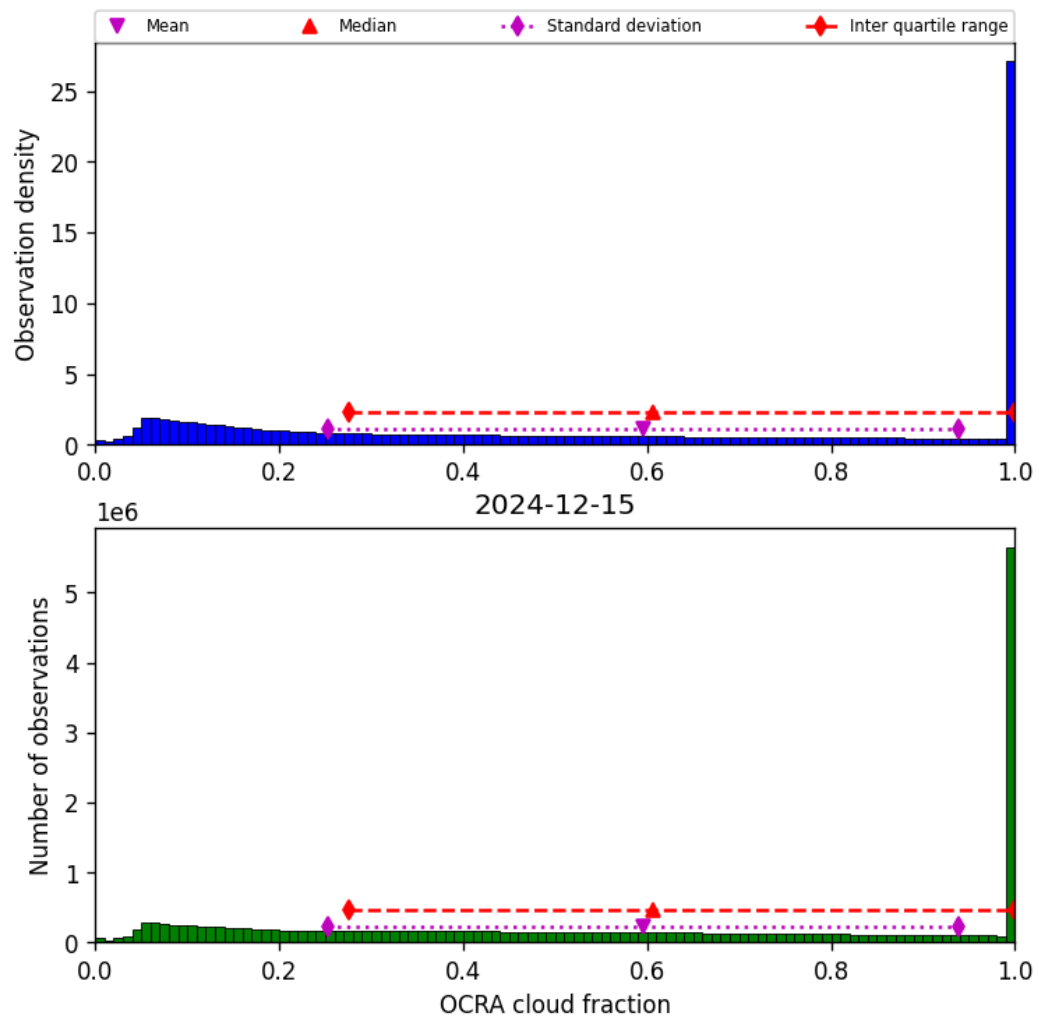


Figure 48: Histogram of “OCRA cloud fraction” for 2024-12-15 to 2024-12-16

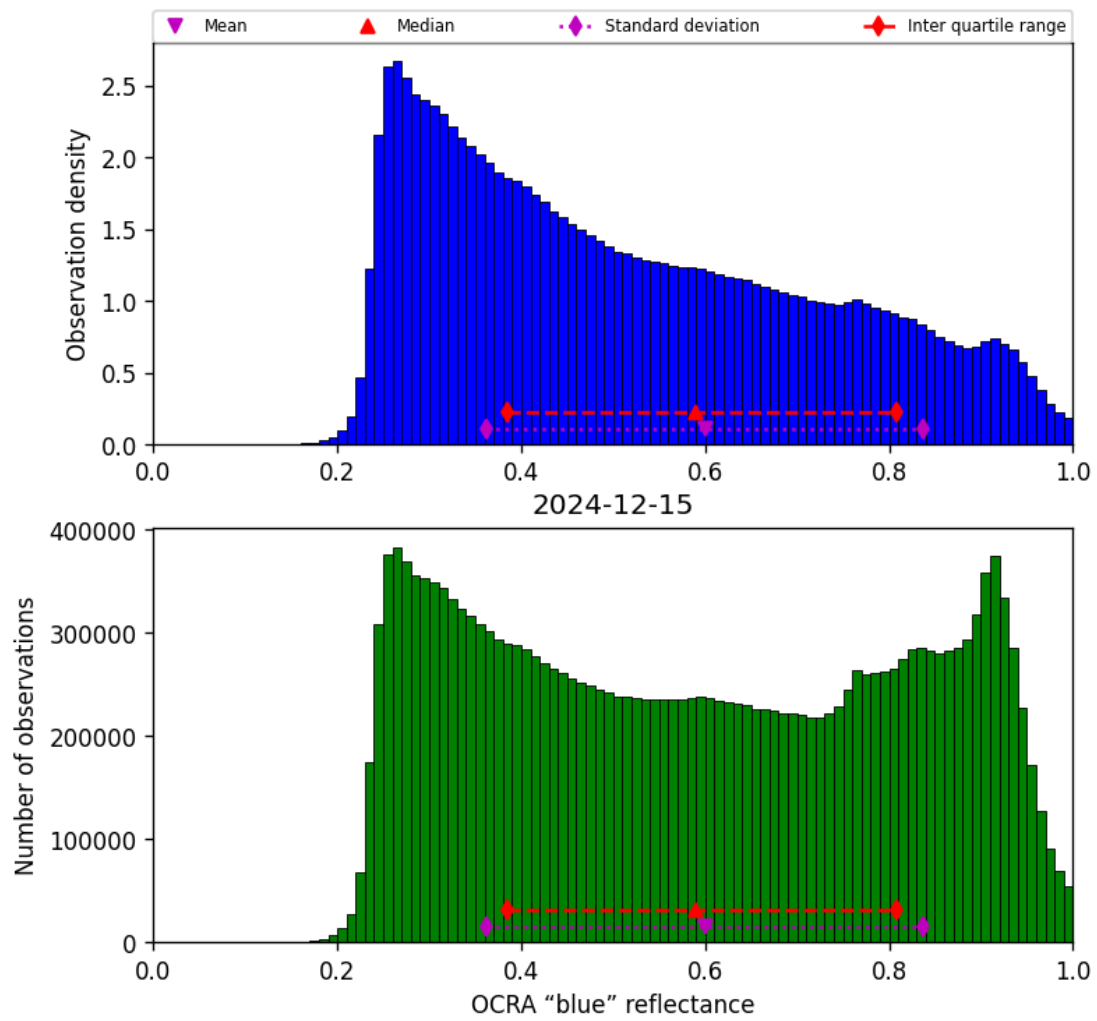


Figure 49: Histogram of "OCRA "blue" reflectance" for 2024-12-15 to 2024-12-16

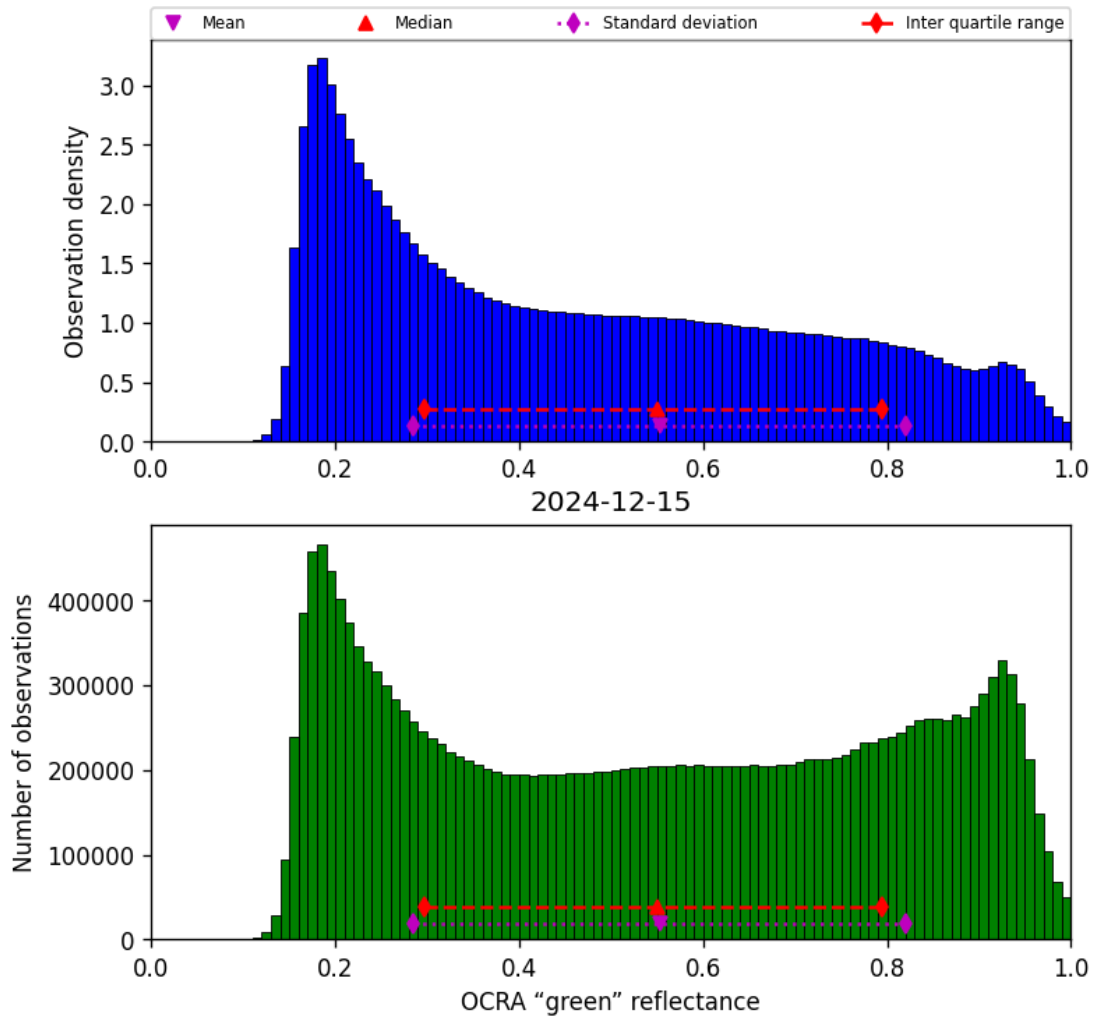


Figure 50: Histogram of “OCRA “green” reflectance” for 2024-12-15 to 2024-12-16

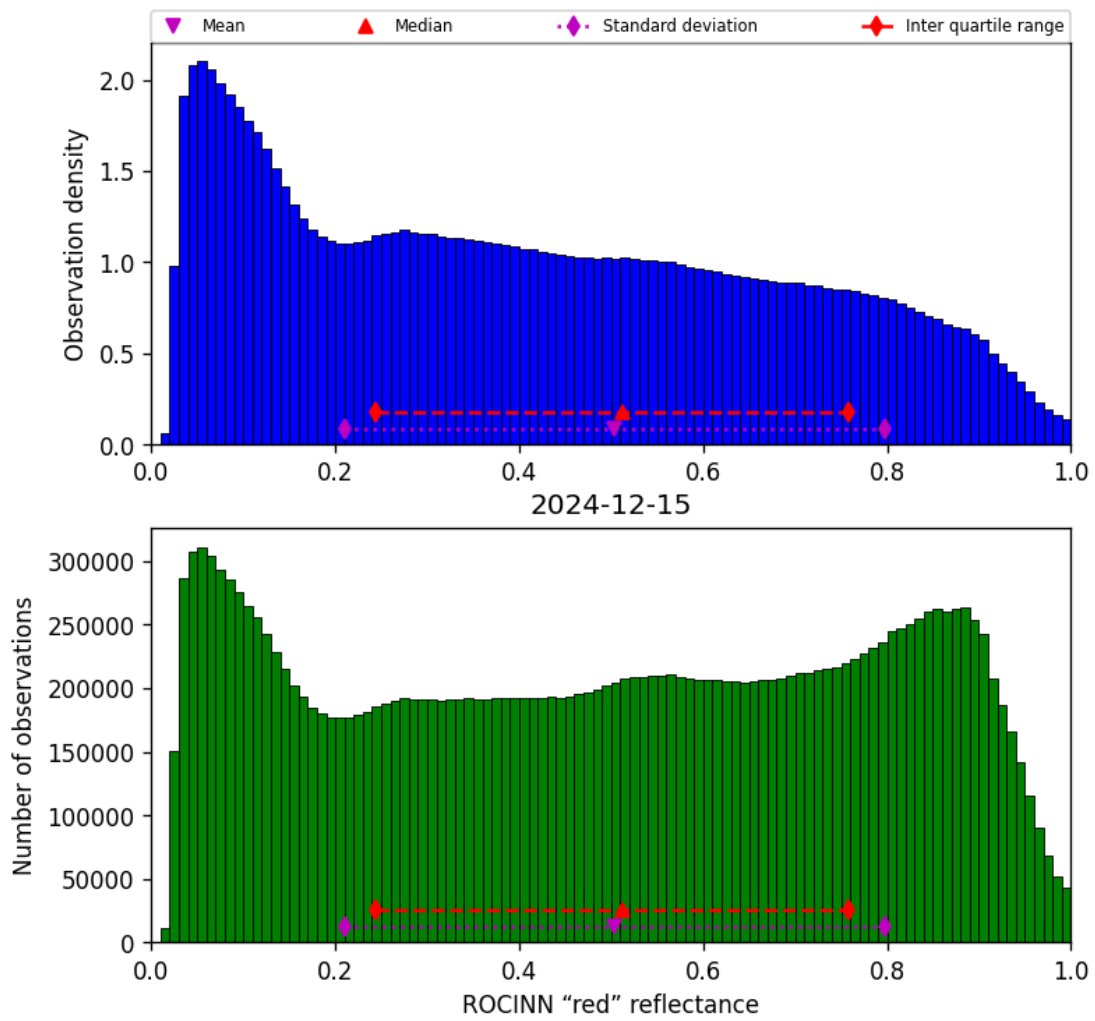


Figure 51: Histogram of “ROCINN “red” reflectance” for 2024-12-15 to 2024-12-16

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.

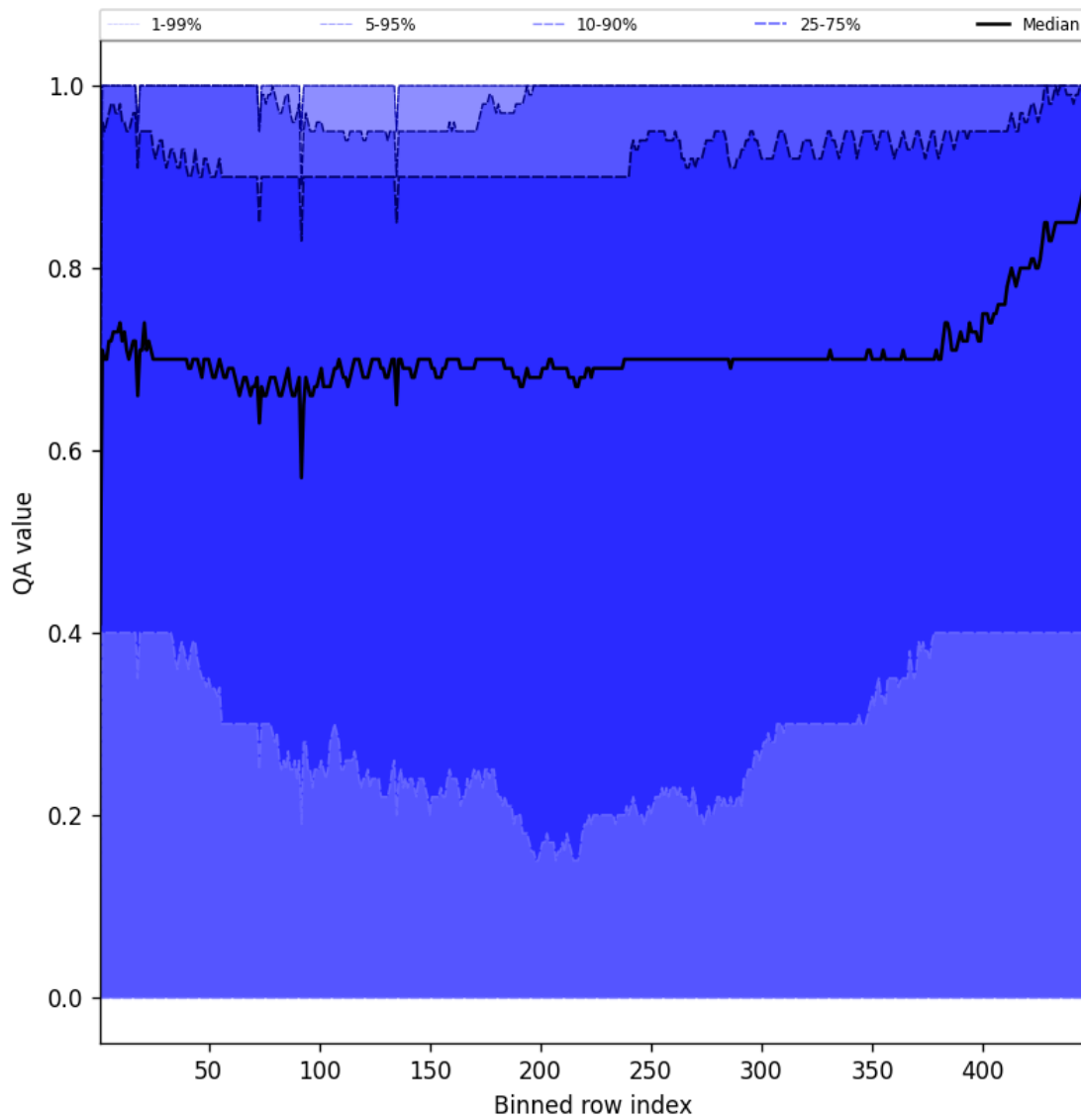


Figure 52: Along track statistics of “QA value” for 2024-12-15 to 2024-12-16

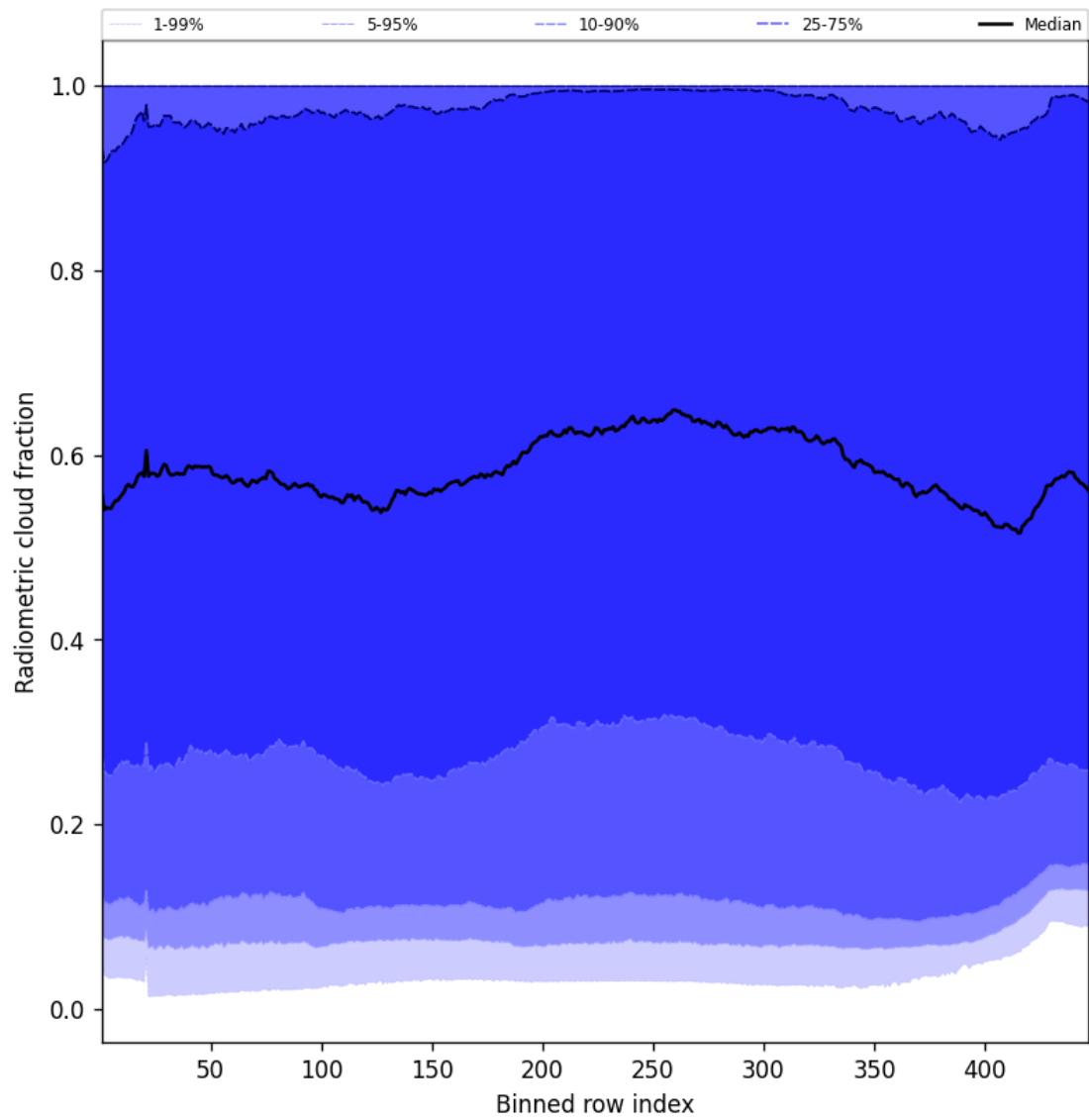


Figure 53: Along track statistics of “Radiometric cloud fraction” for 2024-12-15 to 2024-12-16

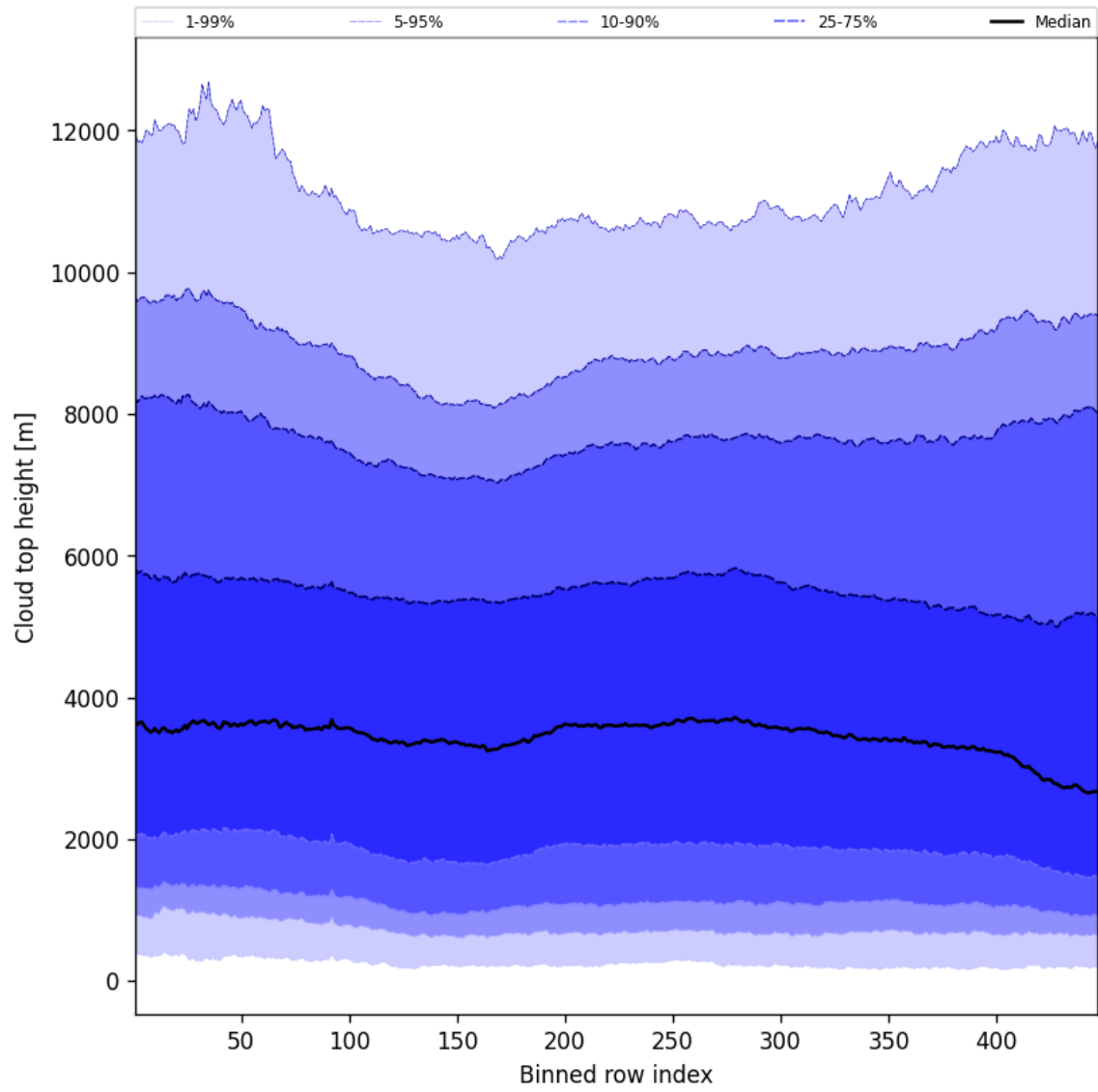


Figure 54: Along track statistics of “Cloud top height” for 2024-12-15 to 2024-12-16

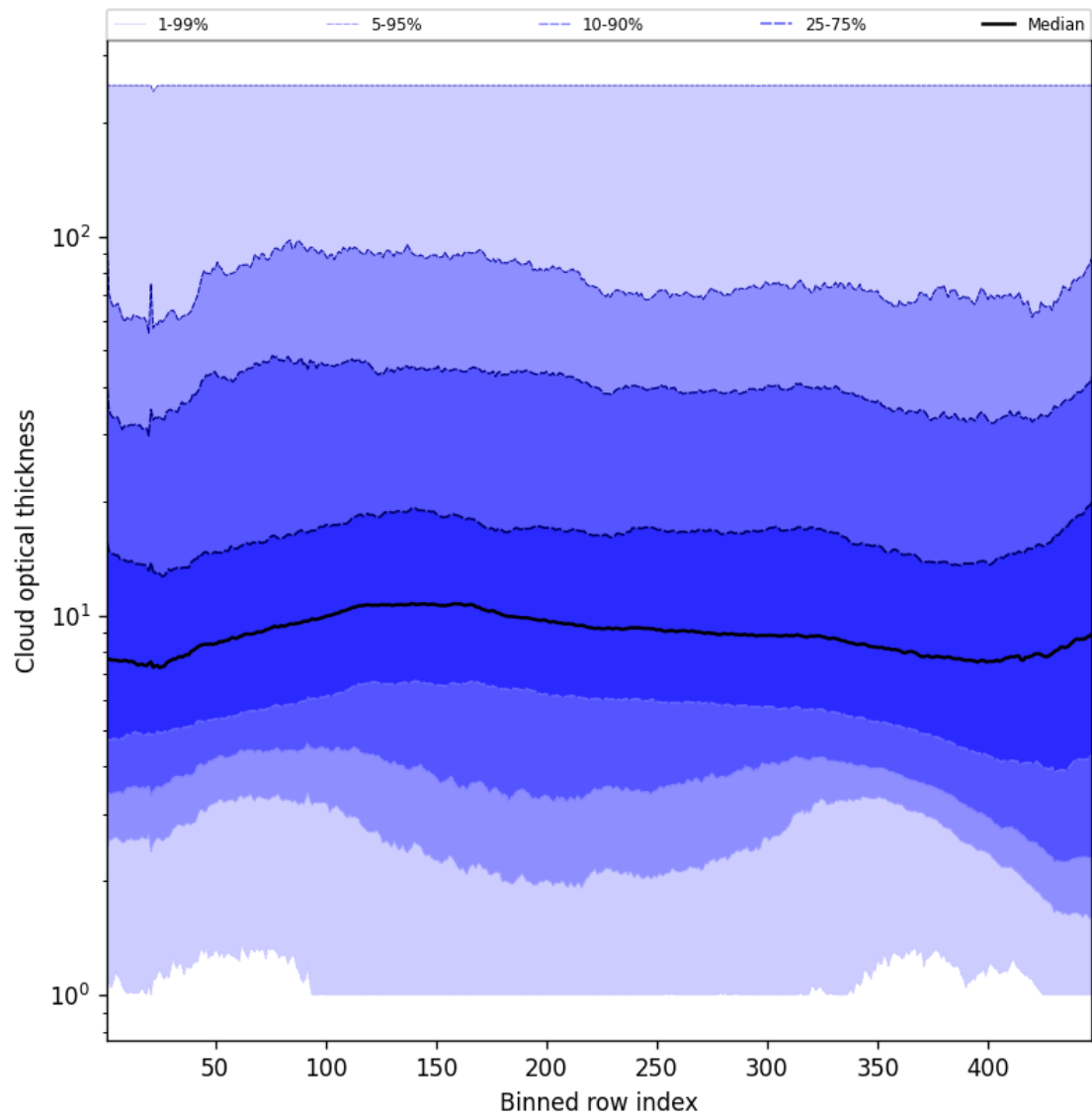


Figure 55: Along track statistics of “Cloud optical thickness” for 2024-12-15 to 2024-12-16

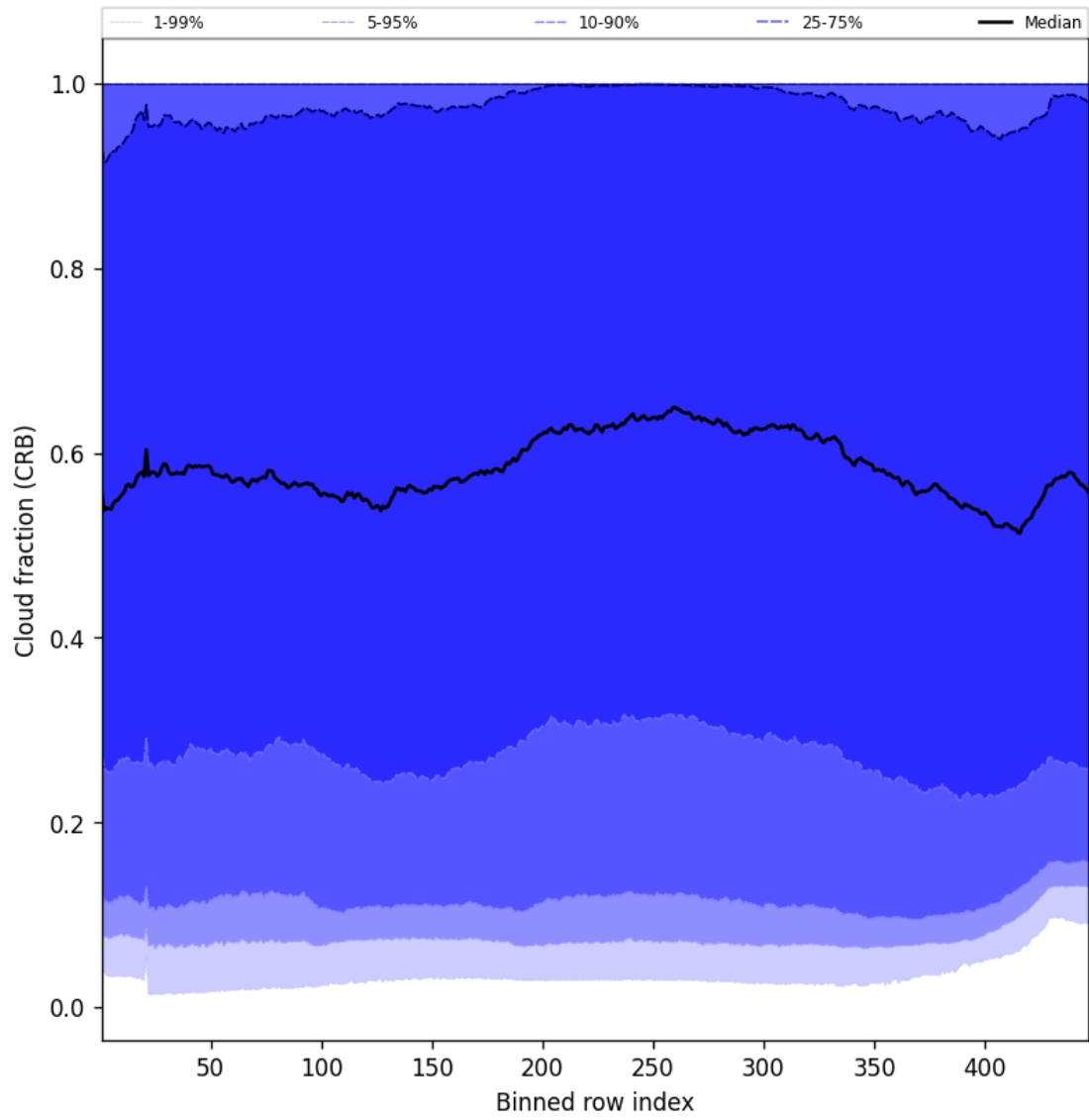


Figure 56: Along track statistics of “Cloud fraction (CRB)” for 2024-12-15 to 2024-12-16

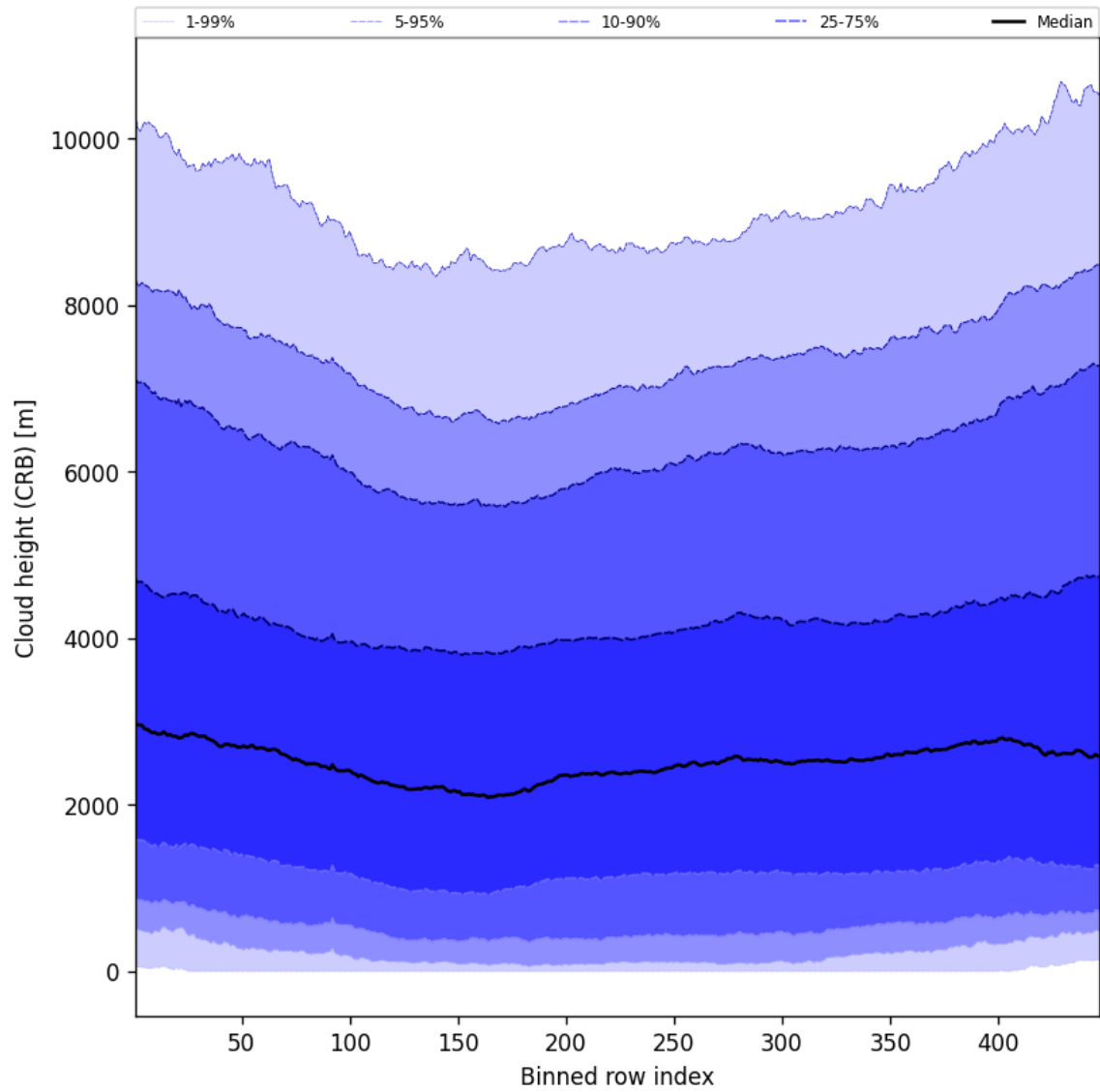


Figure 57: Along track statistics of “Cloud height (CRB)” for 2024-12-15 to 2024-12-16

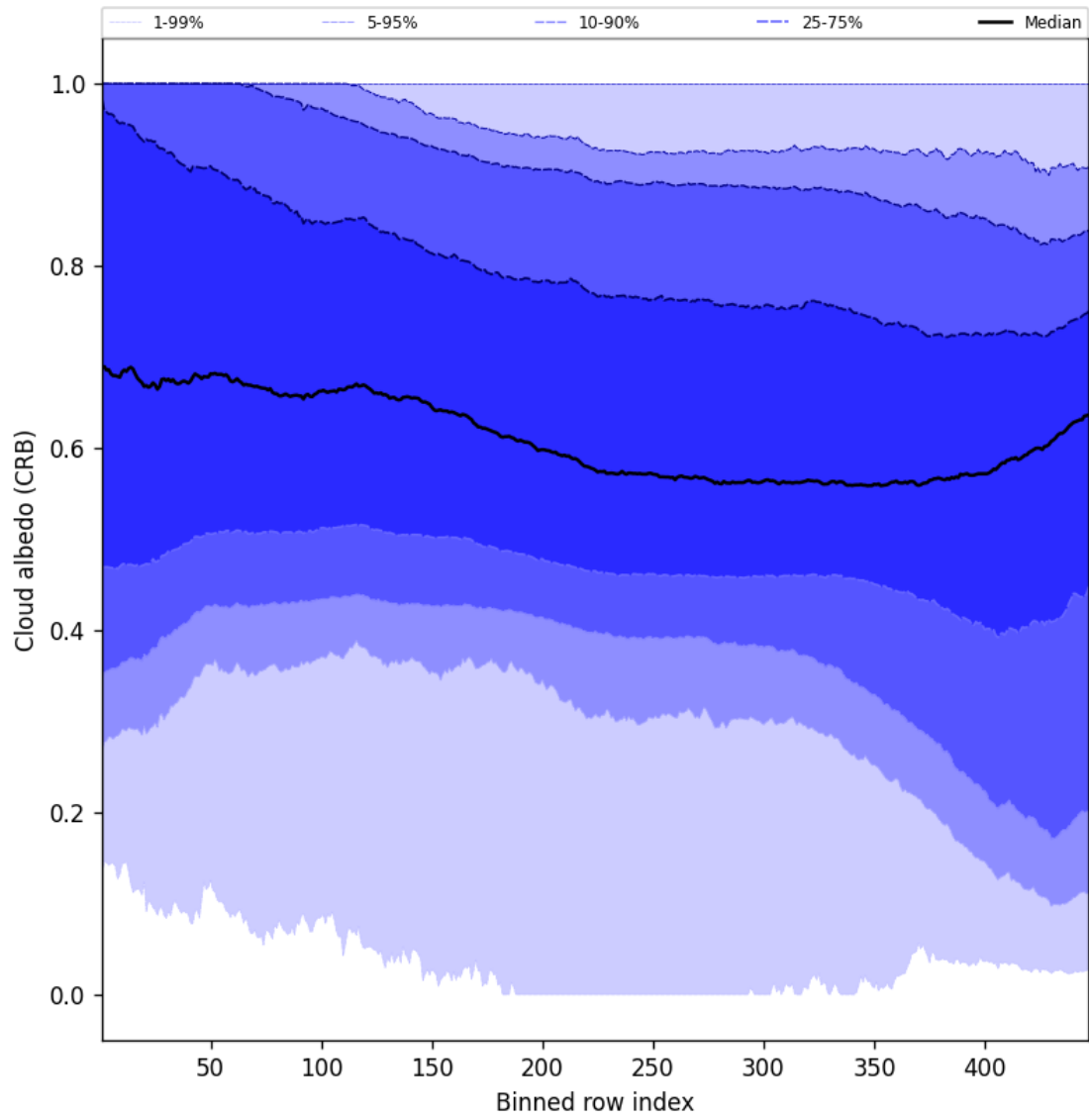


Figure 58: Along track statistics of “Cloud albedo (CRB)” for 2024-12-15 to 2024-12-16

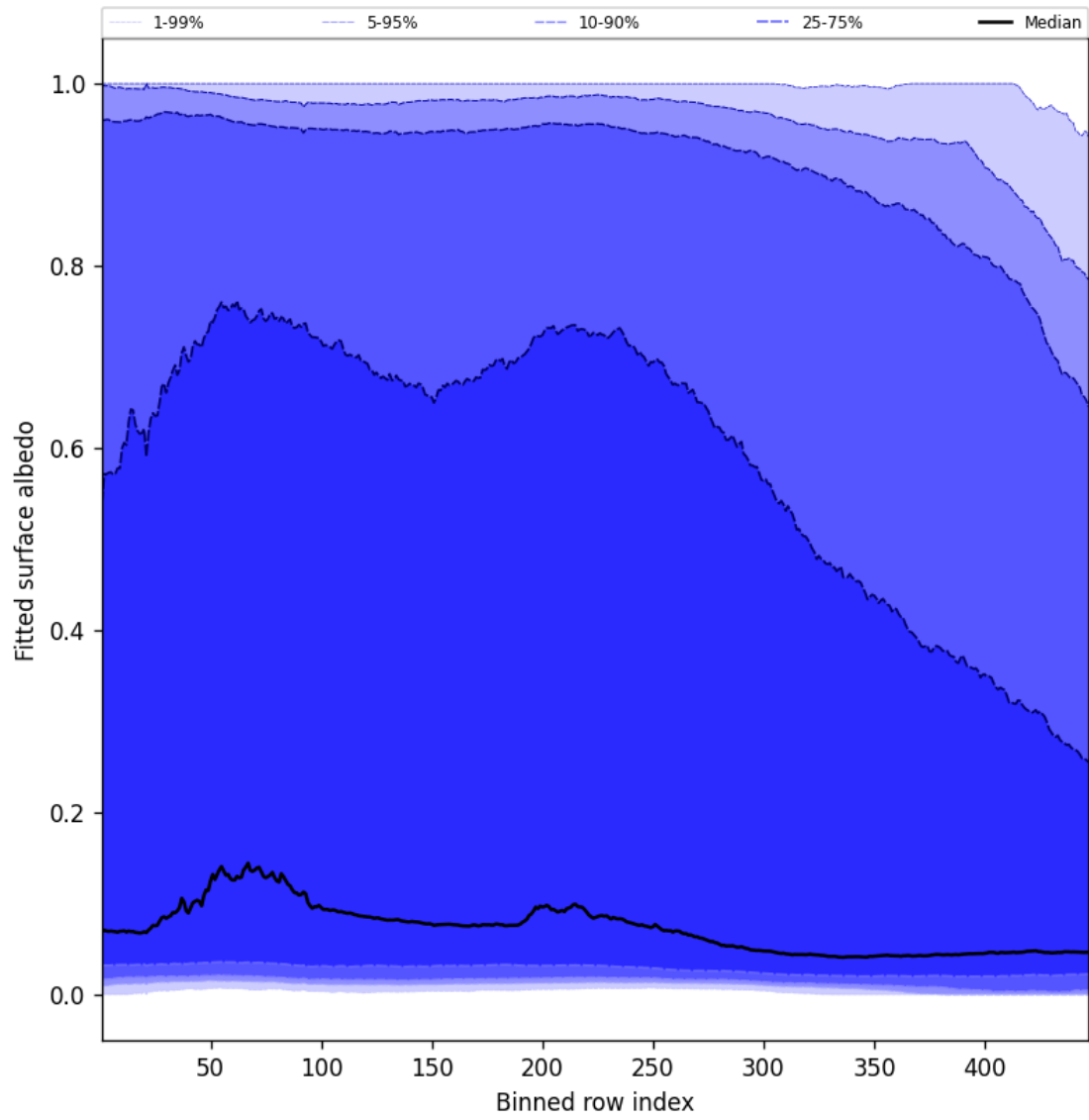


Figure 59: Along track statistics of “Fitted surface albedo” for 2024-12-15 to 2024-12-16

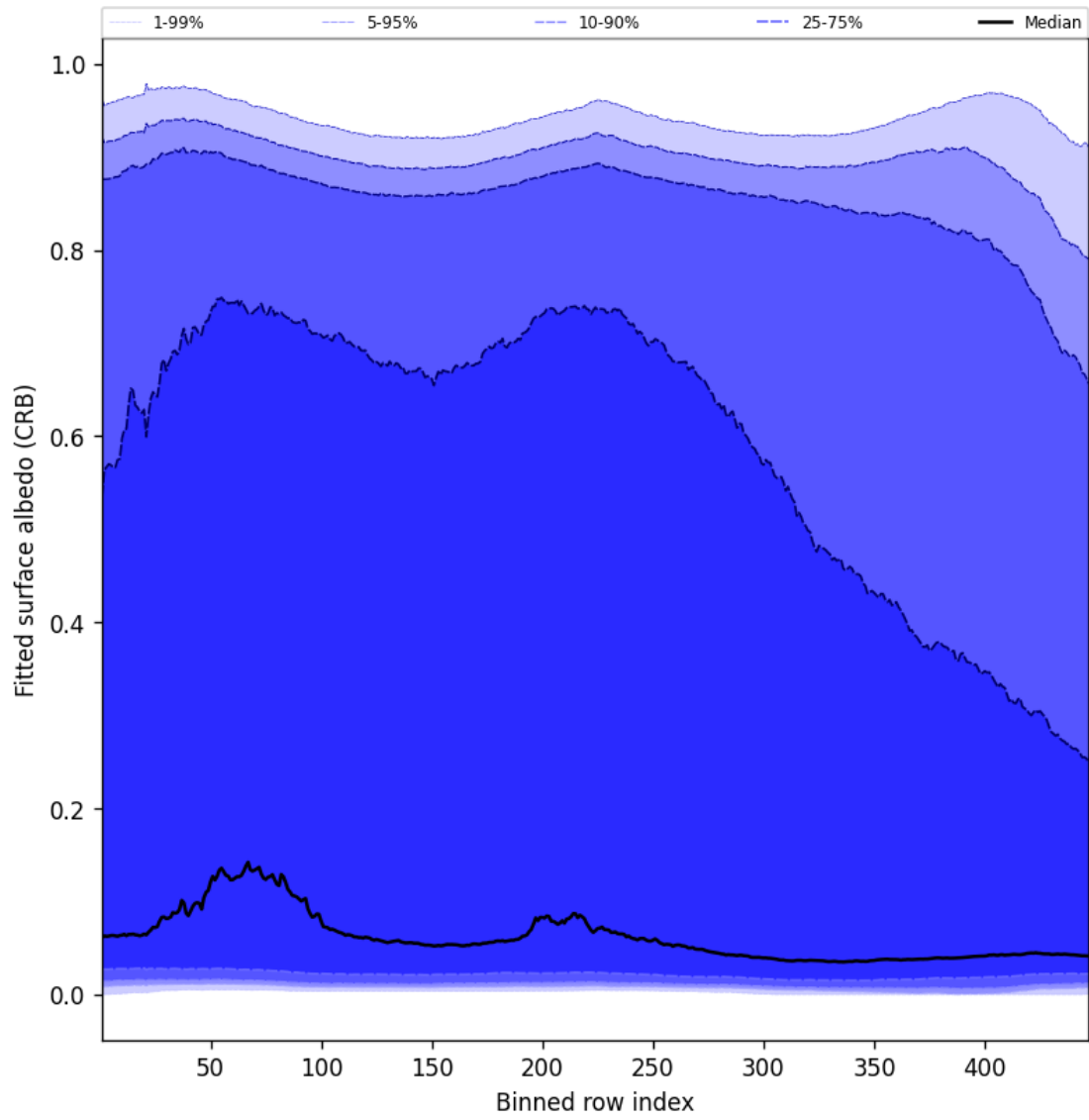


Figure 60: Along track statistics of “Fitted surface albedo (CRB)” for 2024-12-15 to 2024-12-16

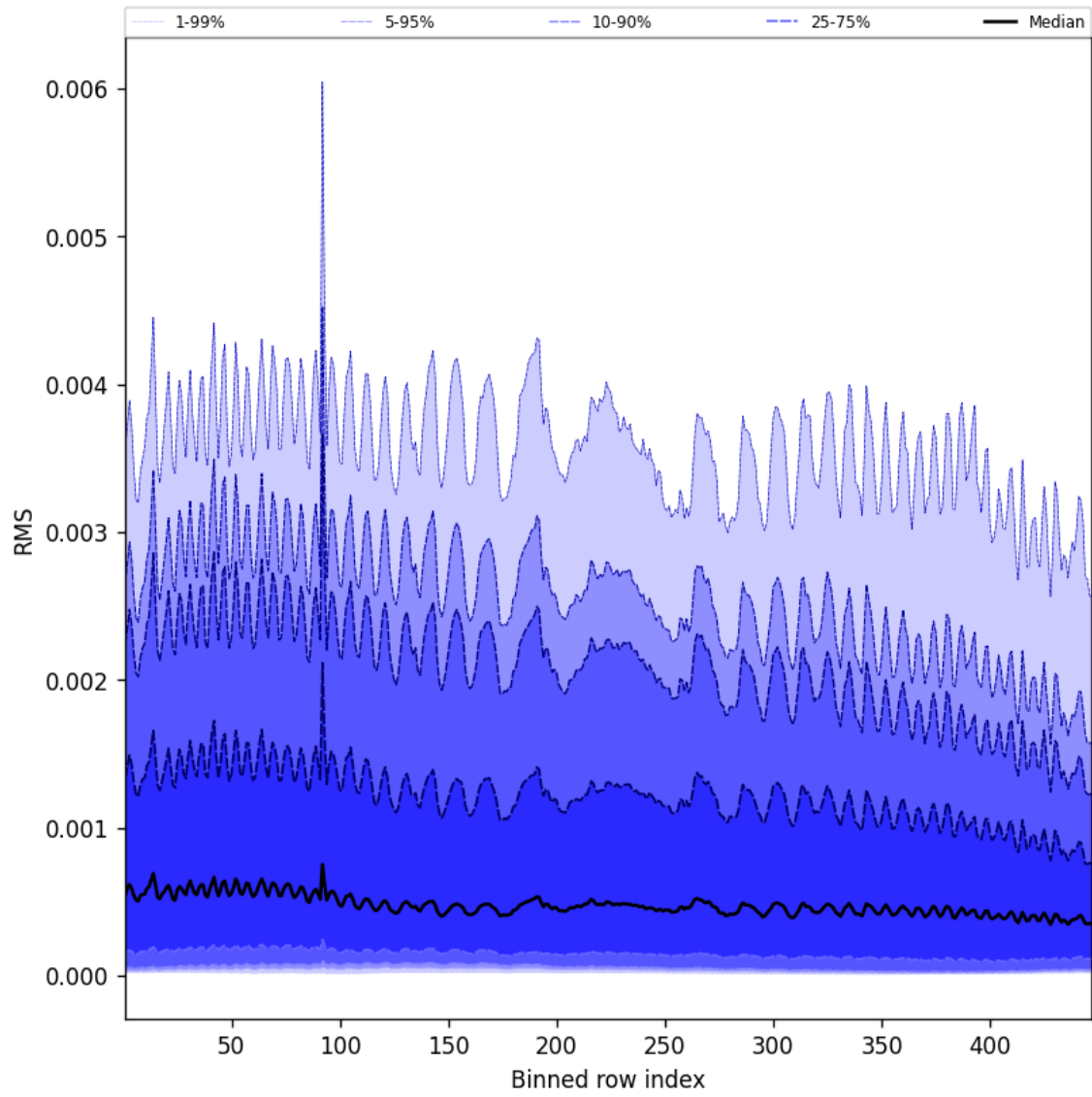


Figure 61: Along track statistics of “RMS” for 2024-12-15 to 2024-12-16

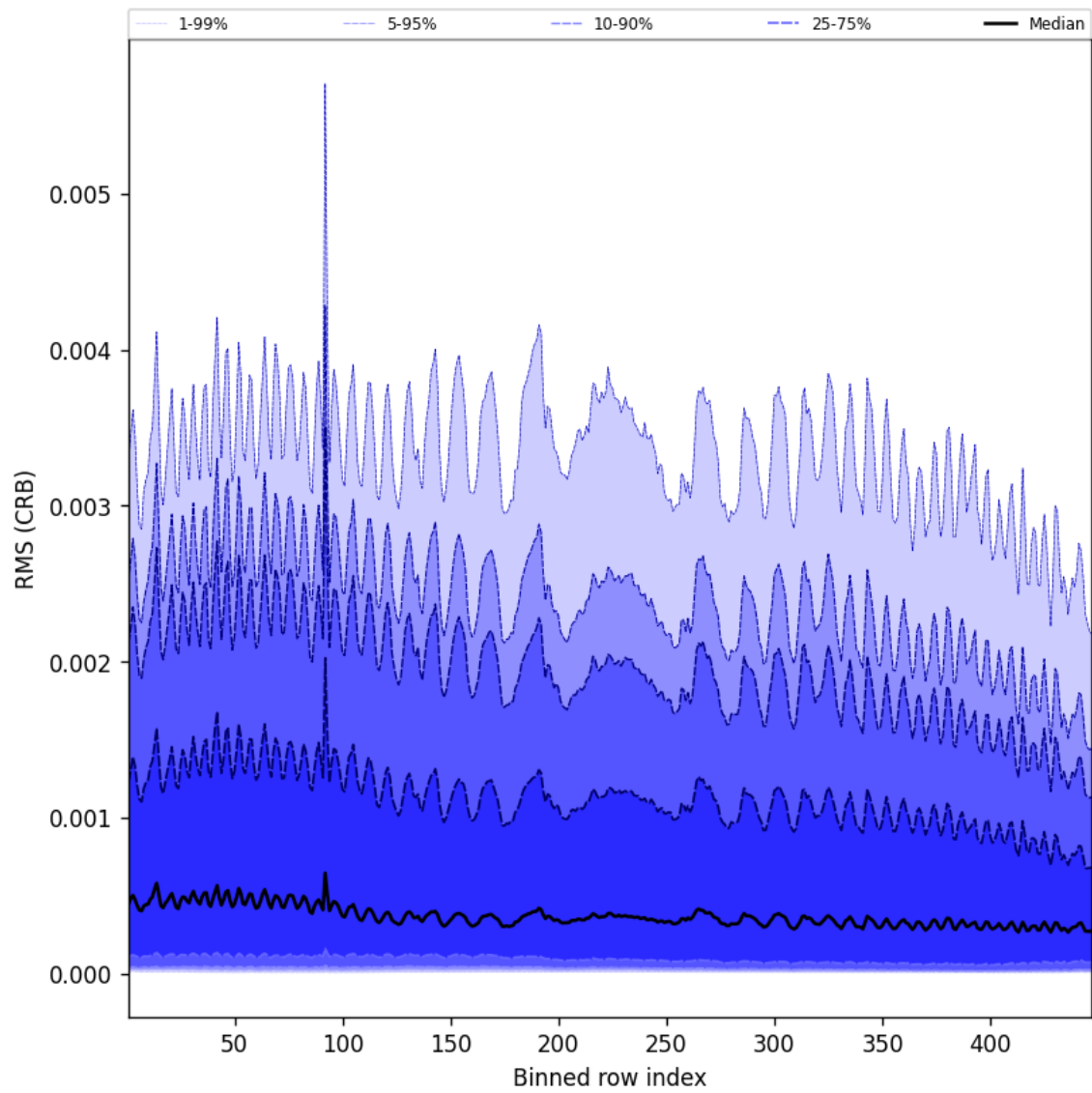


Figure 62: Along track statistics of “RMS (CRB)” for 2024-12-15 to 2024-12-16

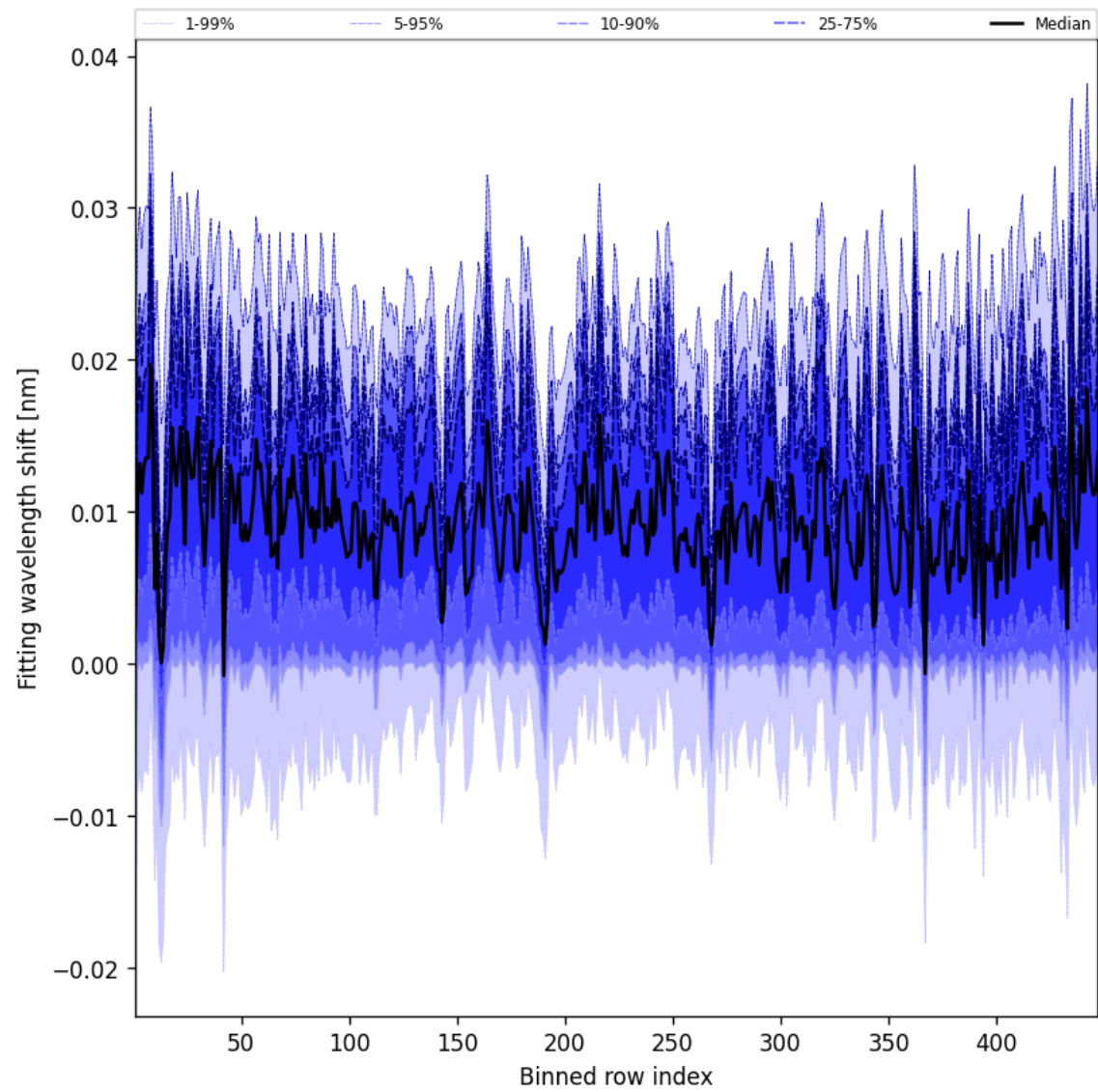


Figure 63: Along track statistics of “Fitting wavelength shift” for 2024-12-15 to 2024-12-16

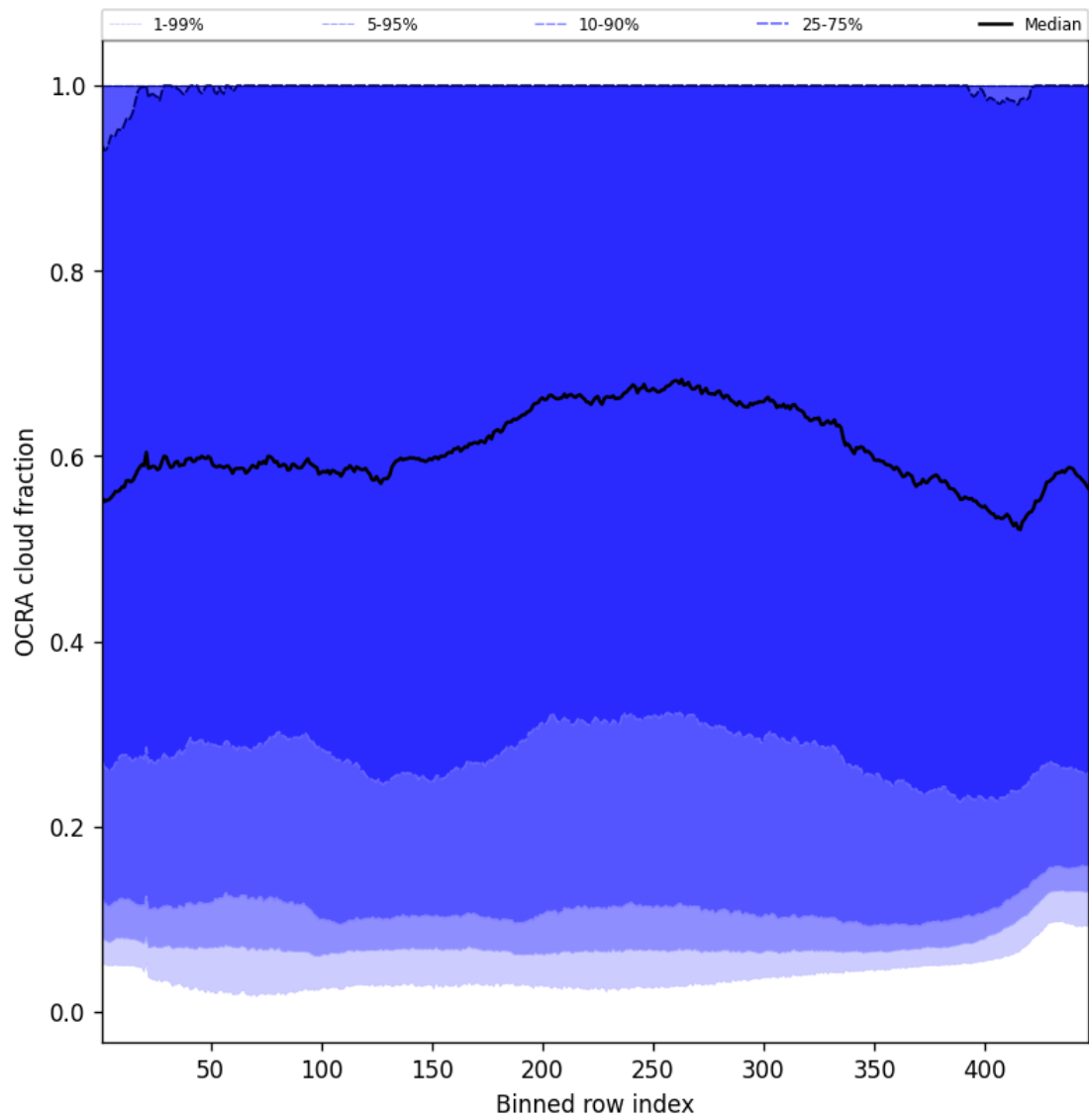


Figure 64: Along track statistics of “OCRA cloud fraction” for 2024-12-15 to 2024-12-16

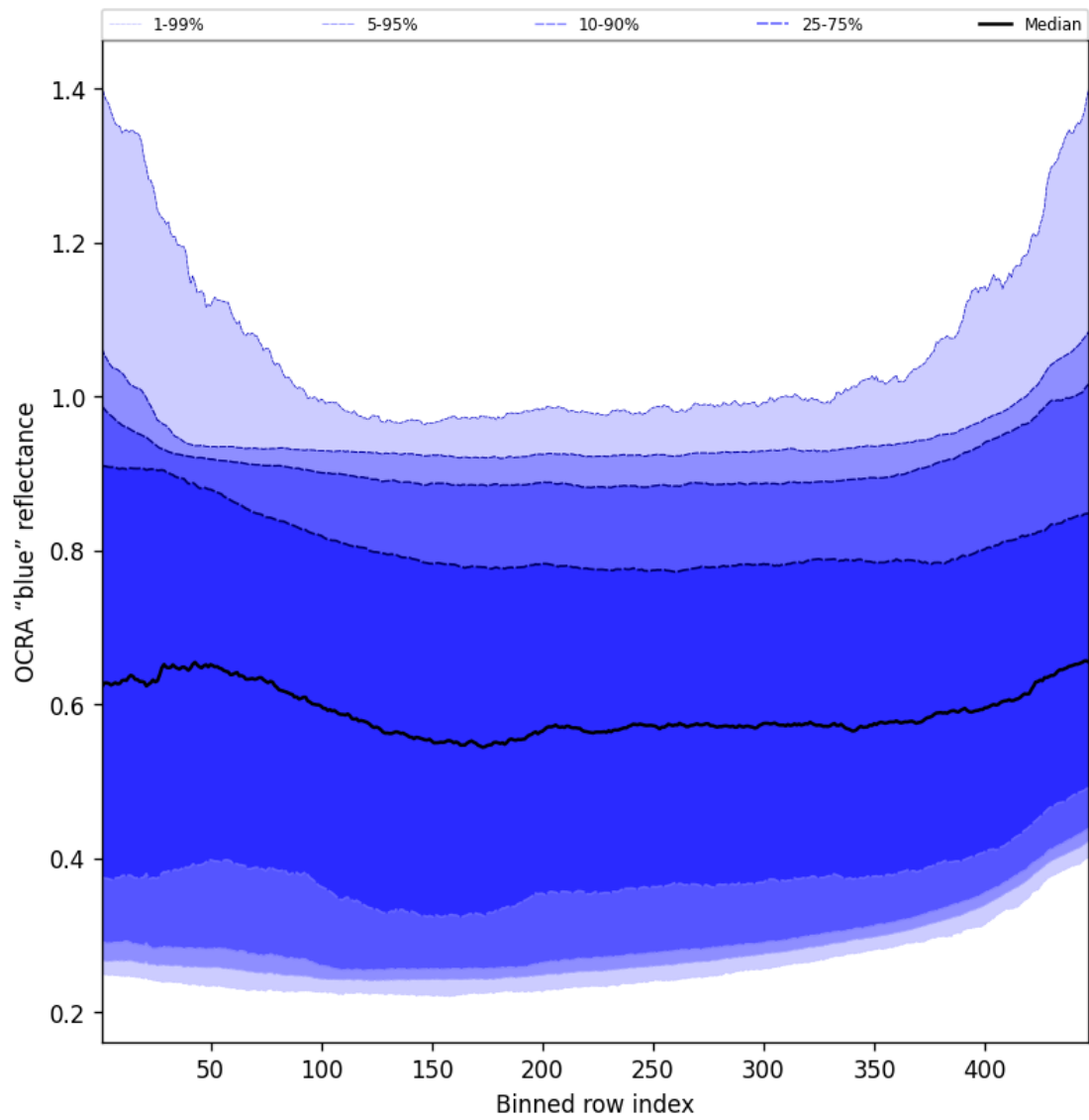


Figure 65: Along track statistics of “OCRA “blue” reflectance” for 2024-12-15 to 2024-12-16

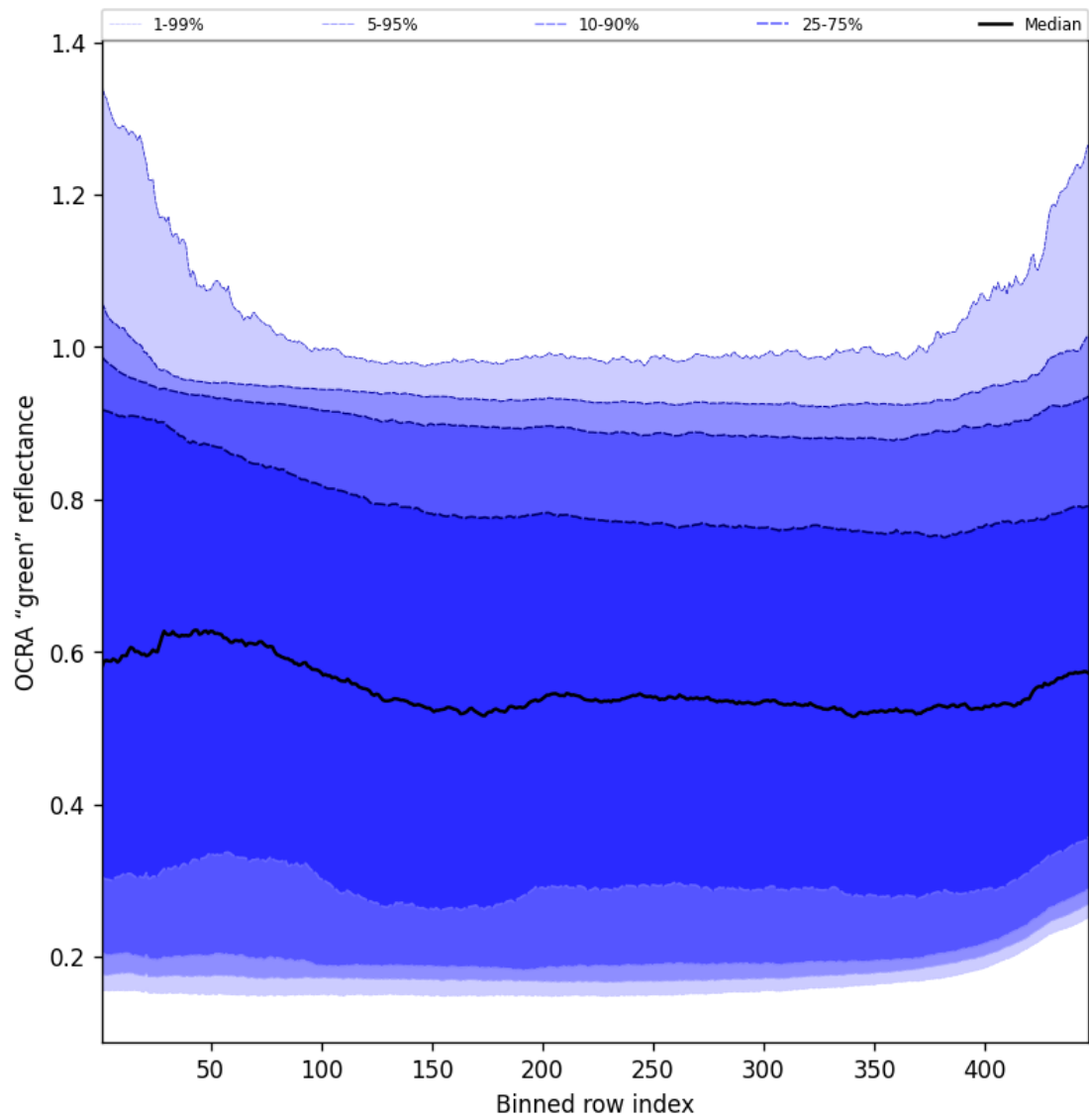


Figure 66: Along track statistics of "OCRA "green" reflectance" for 2024-12-15 to 2024-12-16

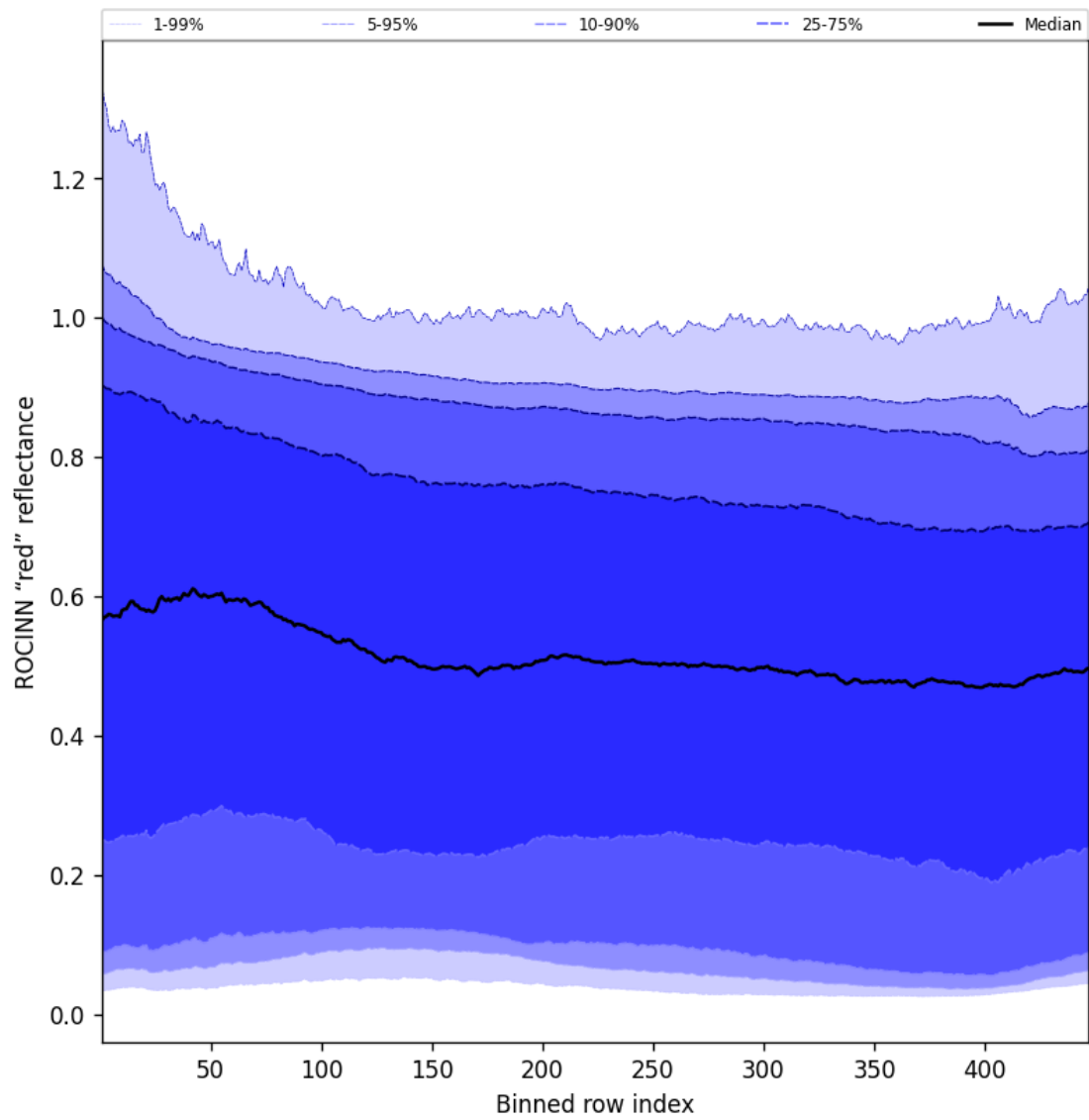


Figure 67: Along track statistics of “ROCINN “red” reflectance” for 2024-12-15 to 2024-12-16

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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