

PyCAMA report generated by tropl2-proc

tropl2-proc

2024-12-20 (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]	0.599 ± 0.361	19616087	5.000×10^{-3}	0.590	0.700	0.0	1.000
cloud fraction [1]	0.577 ± 0.339	19616087	0.995	0.707	0.565	3.233×10^{-3}	1.000
cloud top height [m]	$(0.414 \pm 0.269) \times 10^4$	19616087	1.425×10^3	3.840×10^3	3.700×10^3	0.0	2.000×10^4
cloud optical thickness [1]	19.9 ± 37.3	19616087	9.34	10.7	9.07	1.000	250
cloud fraction crb [1]	0.576 ± 0.339	19616087	0.995	0.708	0.564	8.103×10^{-3}	1.000
cloud height crb [m]	$(0.312 \pm 0.227) \times 10^4$	19616087	975	3.158×10^3	2.748×10^3	0.0	2.000×10^4
cloud albedo crb [1]	0.620 ± 0.222	19616087	0.995	0.320	0.605	0.0	1.000
surface albedo fitted [1]	0.302 ± 0.354	19616087	2.500×10^{-2}	0.563	6.807×10^{-2}	0.0	1.000
surface albedo fitted crb [1]	0.289 ± 0.341	19616087	1.500×10^{-2}	0.575	5.509×10^{-2}	0.0	1.000
fitted root mean square [1]	$(8.210 \pm 11.463) \times 10^{-4}$	19616087	5.000×10^{-5}	1.047×10^{-3}	4.607×10^{-4}	8.060×10^{-7}	0.516
fitted root mean square crb [1]	$(7.245 \pm 10.087) \times 10^{-4}$	19616087	5.000×10^{-5}	1.006×10^{-3}	3.568×10^{-4}	7.915×10^{-7}	0.767
wavelength shift [nm]	$(8.817 \pm 7.374) \times 10^{-3}$	19616087	3.000×10^{-4}	1.121×10^{-2}	8.337×10^{-3}	-5.267×10^{-2}	0.440
cloud fraction apriori [1]	0.585 ± 0.344	19616087	0.995	0.736	0.582	0.0	1.000
reflectance blue ocra [1]	0.597 ± 0.238	19616087	0.265	0.426	0.582	0.135	1.94
reflectance green ocra [1]	0.550 ± 0.269	19616087	0.185	0.499	0.542	7.695×10^{-2}	1.95
reflectance continuum aband [1]	0.504 ± 0.295	19616087	4.500×10^{-2}	0.511	0.506	1.071×10^{-2}	4.29

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	0.310	0.900	0.980	1.000	1.000	1.000
cloud fraction [1]	2.867×10^{-2}	7.277×10^{-2}	0.113	0.165	0.263	0.971	1.000	1.000	1.000	1.000
cloud top height [m]	304	795	1.161×10^3	1.468×10^3	1.930×10^3	5.770×10^3	6.855×10^3	7.906×10^3	9.216×10^3	1.160×10^4
cloud optical thickness [1]	1.00	2.61	3.69	4.58	5.50	16.2	25.4	38.9	72.2	250
cloud fraction crb [1]	2.824×10^{-2}	7.205×10^{-2}	0.112	0.164	0.262	0.970	1.000	1.000	1.000	1.000
cloud height crb [m]	0.0	289	604	864	1.260×10^3	4.418×10^3	5.473×10^3	6.435×10^3	7.551×10^3	9.464×10^3
cloud albedo crb [1]	3.113×10^{-2}	0.245	0.362	0.422	0.470	0.790	0.874	0.931	0.993	1.000
surface albedo fitted [1]	0.0	8.346×10^{-3}	1.446×10^{-2}	1.980×10^{-2}	2.743×10^{-2}	0.591	0.845	0.927	0.972	1.000
surface albedo fitted crb [1]	0.0	6.778×10^{-3}	1.110×10^{-2}	1.522×10^{-2}	2.137×10^{-2}	0.597	0.815	0.872	0.910	0.952
fitted root mean square [1]	1.510×10^{-5}	3.004×10^{-5}	4.956×10^{-5}	8.041×10^{-5}	1.417×10^{-4}	1.188×10^{-3}	1.675×10^{-3}	2.116×10^{-3}	2.667×10^{-3}	3.846×10^{-3}
fitted root mean square crb [1]	8.836×10^{-6}	1.987×10^{-5}	3.256×10^{-5}	5.048×10^{-5}	9.023×10^{-5}	1.096×10^{-3}	1.568×10^{-3}	1.987×10^{-3}	2.522×10^{-3}	3.578×10^{-3}
wavelength shift [nm]	-7.010×10^{-3}	-5.111×10^{-4}	2.667×10^{-4}	1.164×10^{-3}	2.885×10^{-3}	1.409×10^{-2}	1.653×10^{-2}	1.854×10^{-2}	2.109×10^{-2}	2.639×10^{-2}
cloud fraction apriori [1]	3.522×10^{-2}	6.932×10^{-2}	0.107	0.161	0.264	1.000	1.000	1.000	1.000	1.000
reflectance blue ocra [1]	0.234	0.260	0.288	0.322	0.381	0.807	0.877	0.915	0.949	1.07
reflectance green ocra [1]	0.153	0.176	0.198	0.230	0.293	0.792	0.868	0.915	0.950	1.05
reflectance continuum aband [1]	3.167×10^{-2}	5.962×10^{-2}	9.649×10^{-2}	0.146	0.246	0.758	0.836	0.887	0.934	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 ± 0.398	7261705	0.870	0.650	0.0	1.000	3.000×10^{-2}	0.900
cloud fraction [1]	0.512 ± 0.339	7261705	0.666	0.457	3.233×10^{-3}	1.000	0.194	0.860
cloud top height [m]	$(0.459 \pm 0.281) \times 10^4$	7261705	4.175×10^3	4.143×10^3	0.0	2.000×10^4	2.265×10^3	6.440×10^3
cloud optical thickness [1]	28.5 ± 49.4	7261705	18.0	10.1	1.000	250	5.97	24.0
cloud fraction crb [1]	0.510 ± 0.339	7261705	0.664	0.454	8.103×10^{-3}	1.000	0.194	0.857
cloud height crb [m]	$(0.381 \pm 0.235) \times 10^4$	7261705	3.610×10^3	3.527×10^3	0.0	2.000×10^4	1.805×10^3	5.415×10^3
cloud albedo crb [1]	0.594 ± 0.214	7261705	0.273	0.583	0.0	1.000	0.462	0.736
surface albedo fitted [1]	0.178 ± 0.201	7261705	0.257	6.402×10^{-2}	0.0	1.000	3.060×10^{-2}	0.288
surface albedo fitted crb [1]	0.169 ± 0.200	7261705	0.257	5.137×10^{-2}	0.0	1.000	2.271×10^{-2}	0.280
fitted root mean square [1]	$(3.868 \pm 5.657) \times 10^{-4}$	7261705	3.907×10^{-4}	2.095×10^{-4}	1.024×10^{-6}	6.973×10^{-2}	8.270×10^{-5}	4.734×10^{-4}
fitted root mean square crb [1]	$(3.046 \pm 4.691) \times 10^{-4}$	7261705	3.137×10^{-4}	1.244×10^{-4}	1.009×10^{-6}	2.306×10^{-2}	4.602×10^{-5}	3.597×10^{-4}
wavelength shift [nm]	$(6.030 \pm 6.493) \times 10^{-3}$	7261705	8.698×10^{-3}	4.715×10^{-3}	-5.267×10^{-2}	6.149×10^{-2}	1.185×10^{-3}	9.883×10^{-3}
cloud fraction apriori [1]	0.515 ± 0.345	7261705	0.691	0.459	0.0	1.000	0.188	0.879
reflectance blue ocra [1]	0.535 ± 0.210	7261705	0.315	0.506	0.136	1.94	0.361	0.677
reflectance green ocra [1]	0.474 ± 0.233	7261705	0.375	0.445	8.182×10^{-2}	1.95	0.268	0.643
reflectance continuum aband [1]	0.424 ± 0.269	7261705	0.403	0.397	1.071×10^{-2}	4.15	0.205	0.608

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]	0.633 ± 0.334	12354382	0.500	0.700	0.0	1.000	0.400	0.900
cloud fraction [1]	0.615 ± 0.333	12354382	0.678	0.627	5.055×10^{-3}	1.000	0.320	0.997
cloud top height [m]	$(0.388 \pm 0.257) \times 10^4$	12354382	3.629×10^3	3.466×10^3	0.0	2.000×10^4	1.767×10^3	5.396×10^3
cloud optical thickness [1]	14.9 ± 26.6	12354382	8.45	8.66	1.000	250	5.30	13.8
cloud fraction crb [1]	0.615 ± 0.333	12354382	0.679	0.628	8.496×10^{-3}	1.000	0.320	0.999
cloud height crb [m]	$(0.272 \pm 0.212) \times 10^4$	12354382	2.719×10^3	2.396×10^3	0.0	2.000×10^4	1.018×10^3	3.737×10^3
cloud albedo crb [1]	0.635 ± 0.225	12354382	0.345	0.624	0.0	1.000	0.474	0.819
surface albedo fitted [1]	0.374 ± 0.401	12354382	0.816	7.293×10^{-2}	0.0	1.000	2.558×10^{-2}	0.841
surface albedo fitted crb [1]	0.359 ± 0.384	12354382	0.791	5.951×10^{-2}	0.0	1.000	2.050×10^{-2}	0.812
fitted root mean square [1]	$(1.076 \pm 1.312) \times 10^{-3}$	12354382	1.348×10^{-3}	7.833×10^{-4}	8.060×10^{-7}	0.516	2.554×10^{-4}	1.604×10^{-3}
fitted root mean square crb [1]	$(9.714 \pm 11.497) \times 10^{-4}$	12354382	1.319×10^{-3}	6.933×10^{-4}	7.915×10^{-7}	0.767	1.857×10^{-4}	1.505×10^{-3}
wavelength shift [nm]	$(1.046 \pm 0.737) \times 10^{-2}$	12354382	1.072×10^{-2}	1.073×10^{-2}	-4.602×10^{-2}	0.440	4.950×10^{-3}	1.567×10^{-2}
cloud fraction apriori [1]	0.627 ± 0.336	12354382	0.671	0.653	0.0	1.000	0.329	1.000
reflectance blue oca [1]	0.634 ± 0.246	12354382	0.459	0.664	0.135	1.91	0.399	0.858
reflectance green oca [1]	0.595 ± 0.278	12354382	0.528	0.637	7.695×10^{-2}	1.82	0.320	0.848
reflectance continuum aband [1]	0.550 ± 0.299	12354382	0.524	0.597	1.341×10^{-2}	4.29	0.286	0.810

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]	0.687 ± 0.334	11952283	0.550	0.850	0.0	1.000	0.400	0.950
cloud fraction [1]	0.609 ± 0.361	11952283	0.760	0.658	5.055×10^{-3}	1.000	0.240	1.000
cloud top height [m]	$(0.363 \pm 0.256) \times 10^4$	11952283	3.437×10^3	2.891×10^3	0.0	2.000×10^4	1.633×10^3	5.070×10^3
cloud optical thickness [1]	18.7 ± 30.3	11952283	10.5	9.98	1.000	250	6.72	17.2
cloud fraction crb [1]	0.608 ± 0.361	11952283	0.761	0.655	8.496×10^{-3}	1.000	0.239	1.000
cloud height crb [m]	$(0.286 \pm 0.230) \times 10^4$	11952283	3.154×10^3	2.219×10^3	0.0	2.000×10^4	1.025×10^3	4.179×10^3
cloud albedo crb [1]	0.562 ± 0.182	11952283	0.234	0.543	0.0	1.000	0.452	0.685
surface albedo fitted [1]	0.111 ± 0.211	11952283	3.515×10^{-2}	3.258×10^{-2}	0.0	1.000	1.938×10^{-2}	5.453×10^{-2}
surface albedo fitted crb [1]	0.107 ± 0.215	11952283	2.898×10^{-2}	2.563×10^{-2}	0.0	1.000	1.488×10^{-2}	4.386×10^{-2}
fitted root mean square [1]	$(7.586 \pm 12.493) \times 10^{-4}$	11952283	1.025×10^{-3}	3.267×10^{-4}	8.060×10^{-7}	0.516	9.498×10^{-5}	1.120×10^{-3}
fitted root mean square crb [1]	$(7.103 \pm 11.114) \times 10^{-4}$	11952283	1.014×10^{-3}	2.875×10^{-4}	7.915×10^{-7}	0.767	7.187×10^{-5}	1.086×10^{-3}
wavelength shift [nm]	$(8.126 \pm 7.569) \times 10^{-3}$	11952283	1.109×10^{-2}	7.277×10^{-3}	-4.602×10^{-2}	0.440	2.279×10^{-3}	1.337×10^{-2}
cloud fraction apriori [1]	0.611 ± 0.366	11952283	0.769	0.667	0.0	1.000	0.231	1.000
reflectance blue ocr [1]	0.523 ± 0.209	11952283	0.337	0.487	0.163	1.91	0.344	0.681
reflectance green ocr [1]	0.465 ± 0.236	11952283	0.407	0.427	9.611×10^{-2}	1.95	0.248	0.654
reflectance continuum aband [1]	0.401 ± 0.274	11952283	0.481	0.374	1.312×10^{-2}	4.29	0.143	0.624

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]	0.475 ± 0.350	6360729	0.700	0.590	0.0	1.000	0.0	0.700
cloud fraction [1]	0.520 ± 0.288	6360729	0.457	0.488	3.233×10^{-3}	1.000	0.290	0.747
cloud top height [m]	$(0.495 \pm 0.261) \times 10^4$	6360729	3.155×10^3	4.764×10^3	0.0	2.000×10^4	3.179×10^3	6.334×10^3
cloud optical thickness [1]	18.2 ± 40.3	6360729	7.61	6.45	1.000	250	4.67	12.3
cloud fraction crb [1]	0.521 ± 0.288	6360729	0.458	0.489	8.103×10^{-3}	1.000	0.291	0.749
cloud height crb [m]	$(0.342 \pm 0.209) \times 10^4$	6360729	2.435×10^3	3.186×10^3	0.0	2.000×10^4	2.004×10^3	4.439×10^3
cloud albedo crb [1]	0.725 ± 0.244	6360729	0.347	0.785	0.0	1.000	0.576	0.923
surface albedo fitted [1]	0.653 ± 0.317	6360729	0.636	0.815	0.0	1.000	0.307	0.943
surface albedo fitted crb [1]	0.623 ± 0.296	6360729	0.581	0.788	0.0	1.000	0.303	0.884
fitted root mean square [1]	$(9.973 \pm 9.576) \times 10^{-4}$	6360729	1.075×10^{-3}	7.048×10^{-4}	9.479×10^{-7}	0.462	3.320×10^{-4}	1.407×10^{-3}
fitted root mean square crb [1]	$(8.251 \pm 8.326) \times 10^{-4}$	6360729	1.038×10^{-3}	5.460×10^{-4}	1.168×10^{-6}	0.275	1.928×10^{-4}	1.231×10^{-3}
wavelength shift [nm]	$(1.067 \pm 0.677) \times 10^{-2}$	6360729	1.025×10^{-2}	1.086×10^{-2}	-5.267×10^{-2}	8.104×10^{-2}	5.372×10^{-3}	1.562×10^{-2}
cloud fraction apriori [1]	0.540 ± 0.294	6360729	0.475	0.514	0.0	1.000	0.306	0.782
reflectance blue ocrs [1]	0.730 ± 0.234	6360729	0.363	0.819	0.135	1.94	0.546	0.910
reflectance green ocrs [1]	0.705 ± 0.260	6360729	0.412	0.809	7.695×10^{-2}	1.89	0.501	0.912
reflectance continuum aband [1]	0.689 ± 0.244	6360729	0.395	0.768	1.071×10^{-2}	4.15	0.487	0.882

3 Granule outlines

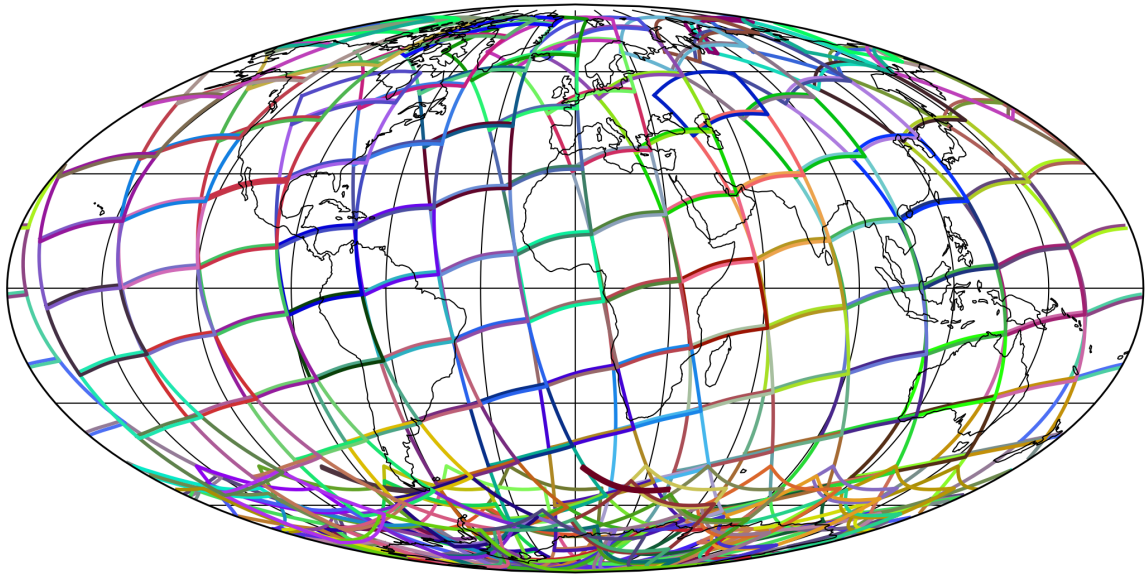


Figure 1: Outline of the granules.

4 Input data monitoring

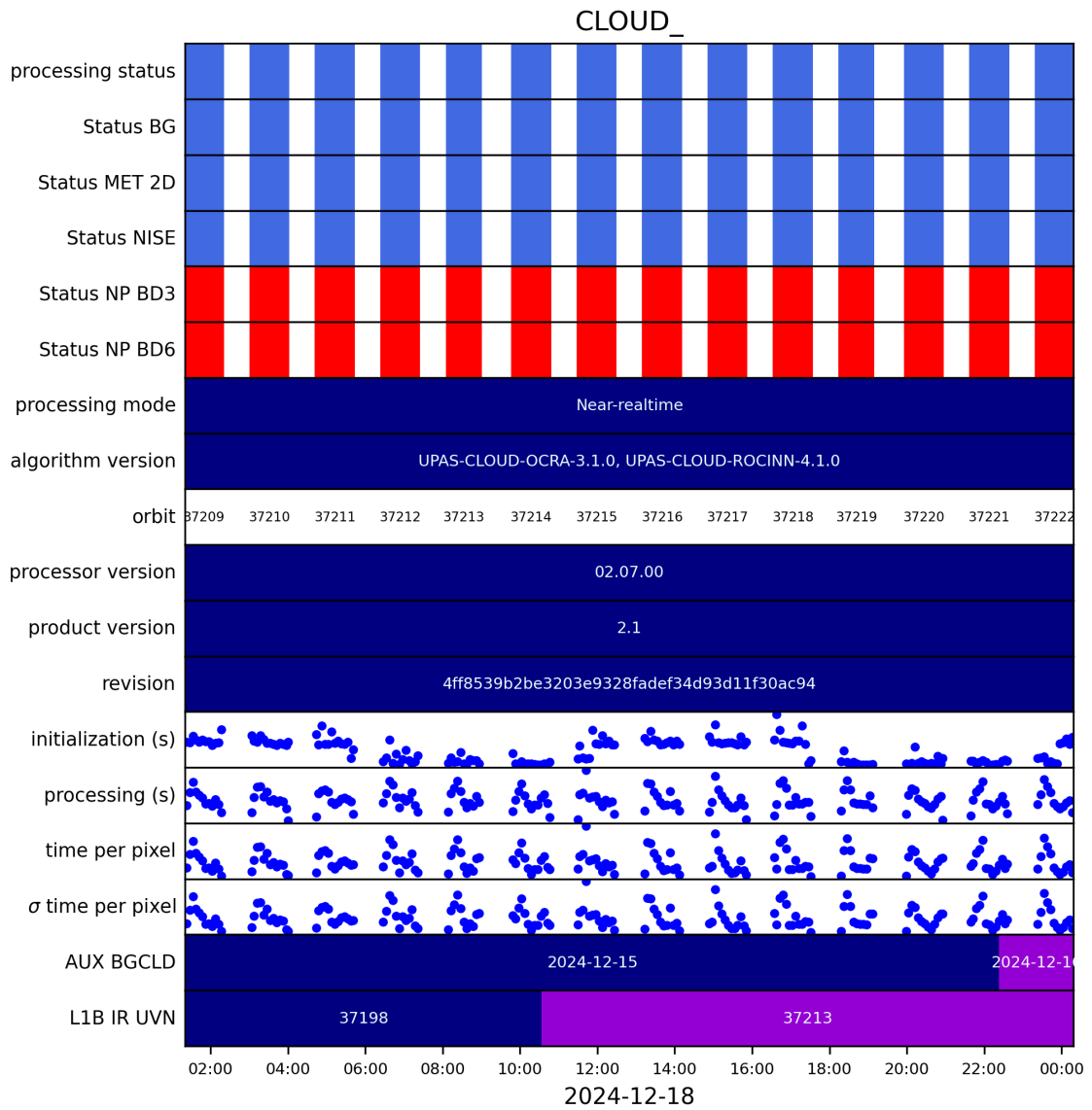


Figure 2: Input data per granule

5 Warnings and errors

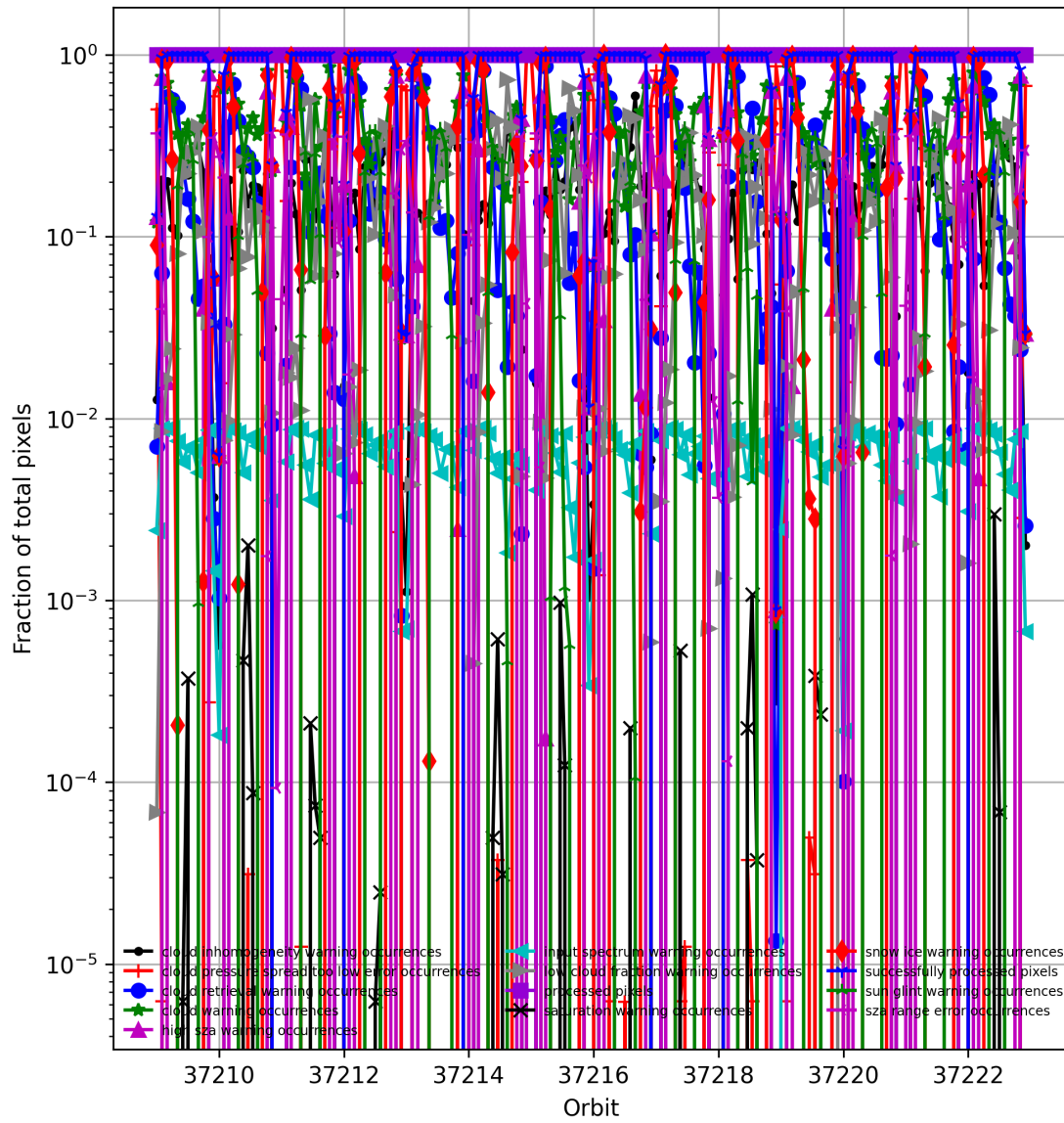


Figure 3: Fraction of pixels with specific warnings and errors during processing

6 World maps

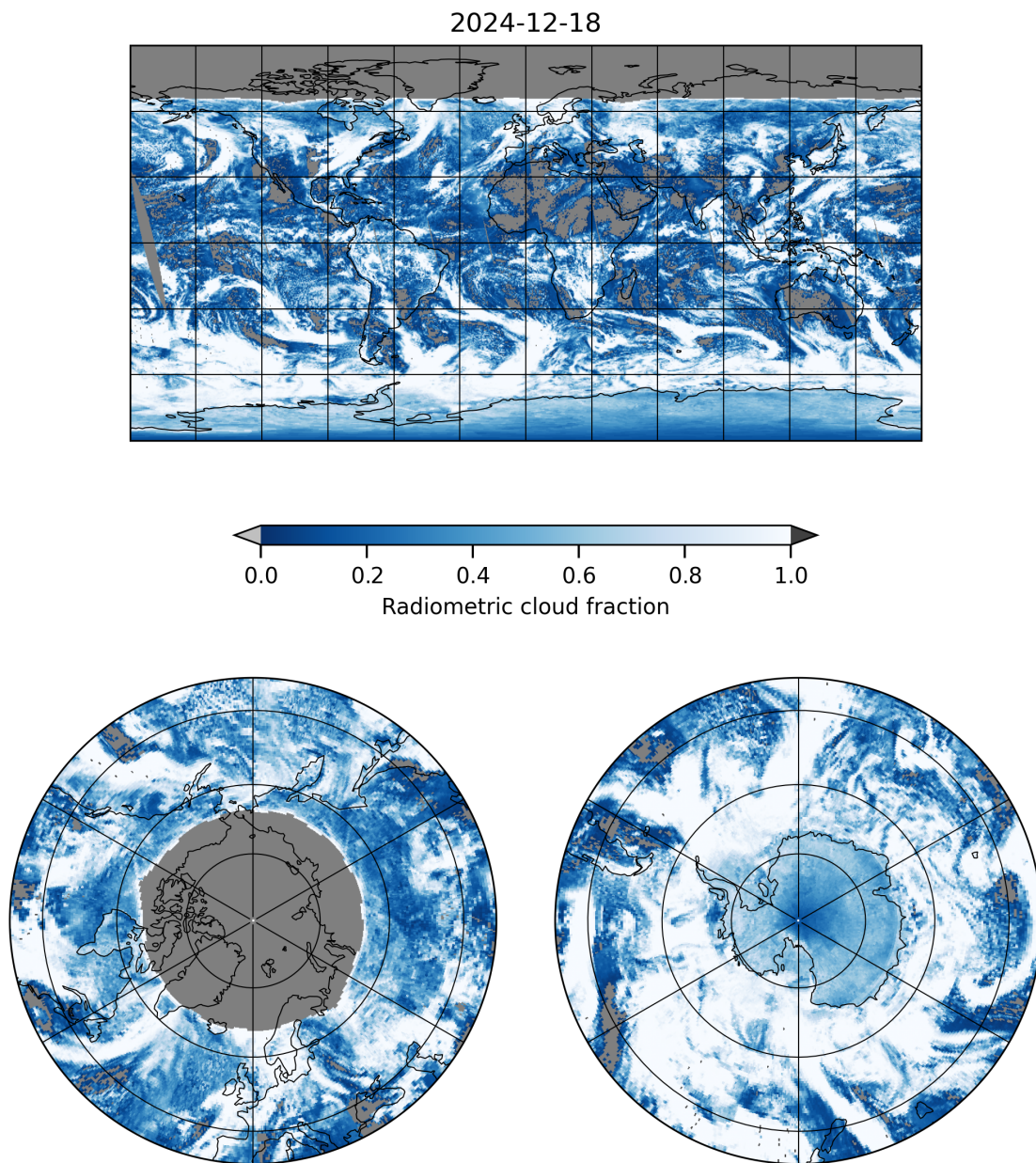


Figure 4: Map of “Radiometric cloud fraction” for 2024-12-18 to 2024-12-19

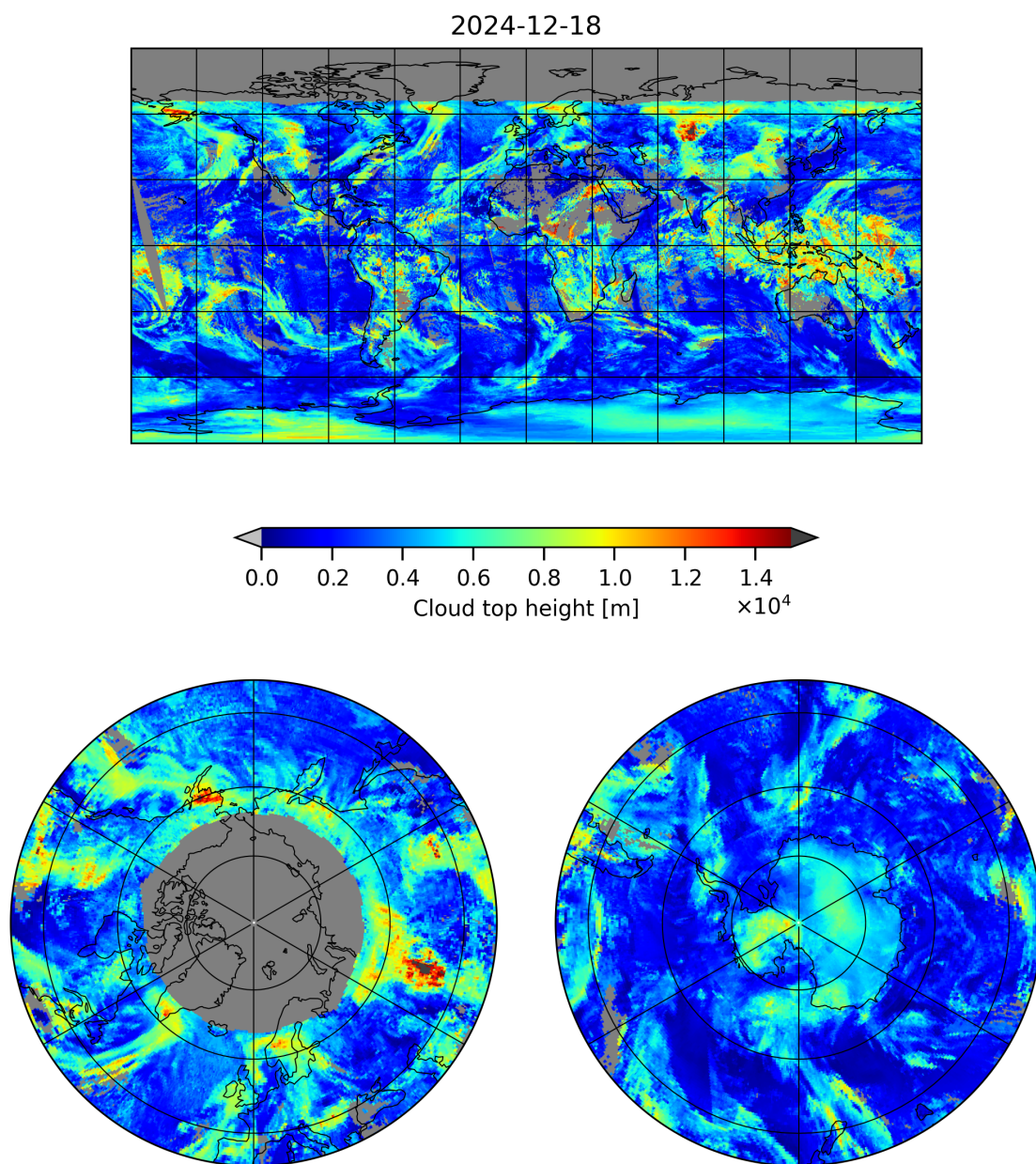


Figure 5: Map of “Cloud top height” for 2024-12-18 to 2024-12-19

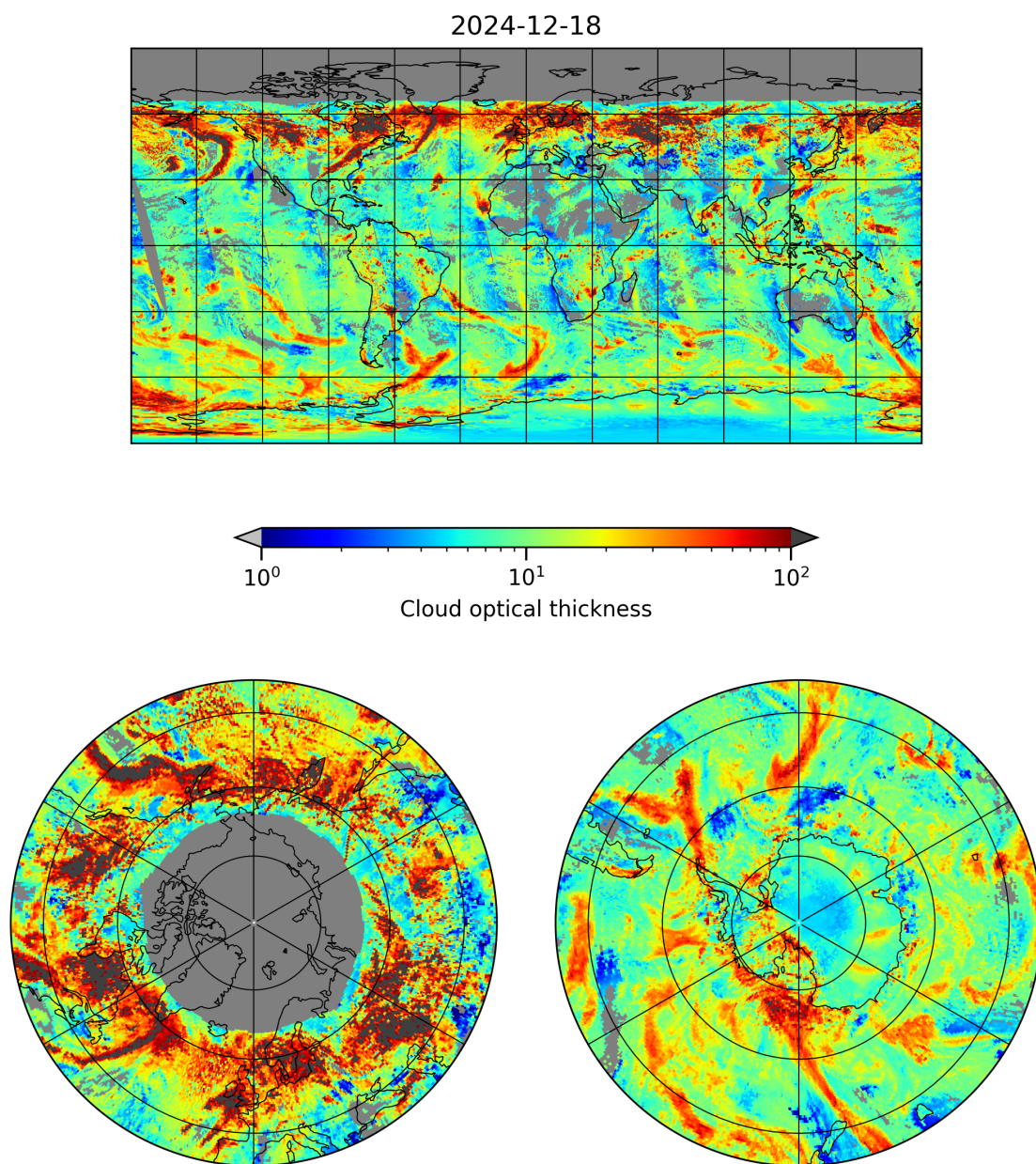


Figure 6: Map of “Cloud optical thickness” for 2024-12-18 to 2024-12-19

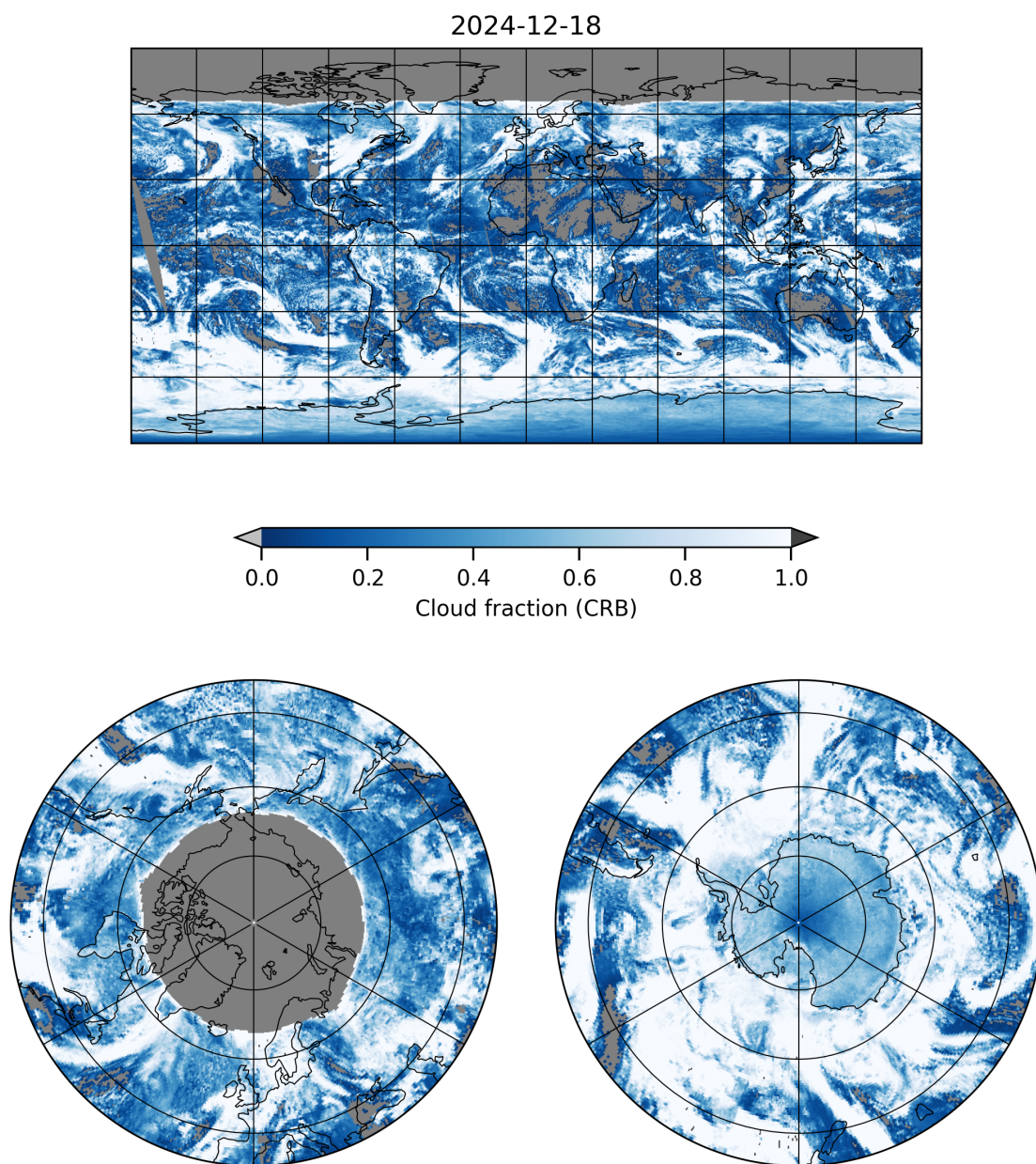


Figure 7: Map of “Cloud fraction (CRB)” for 2024-12-18 to 2024-12-19

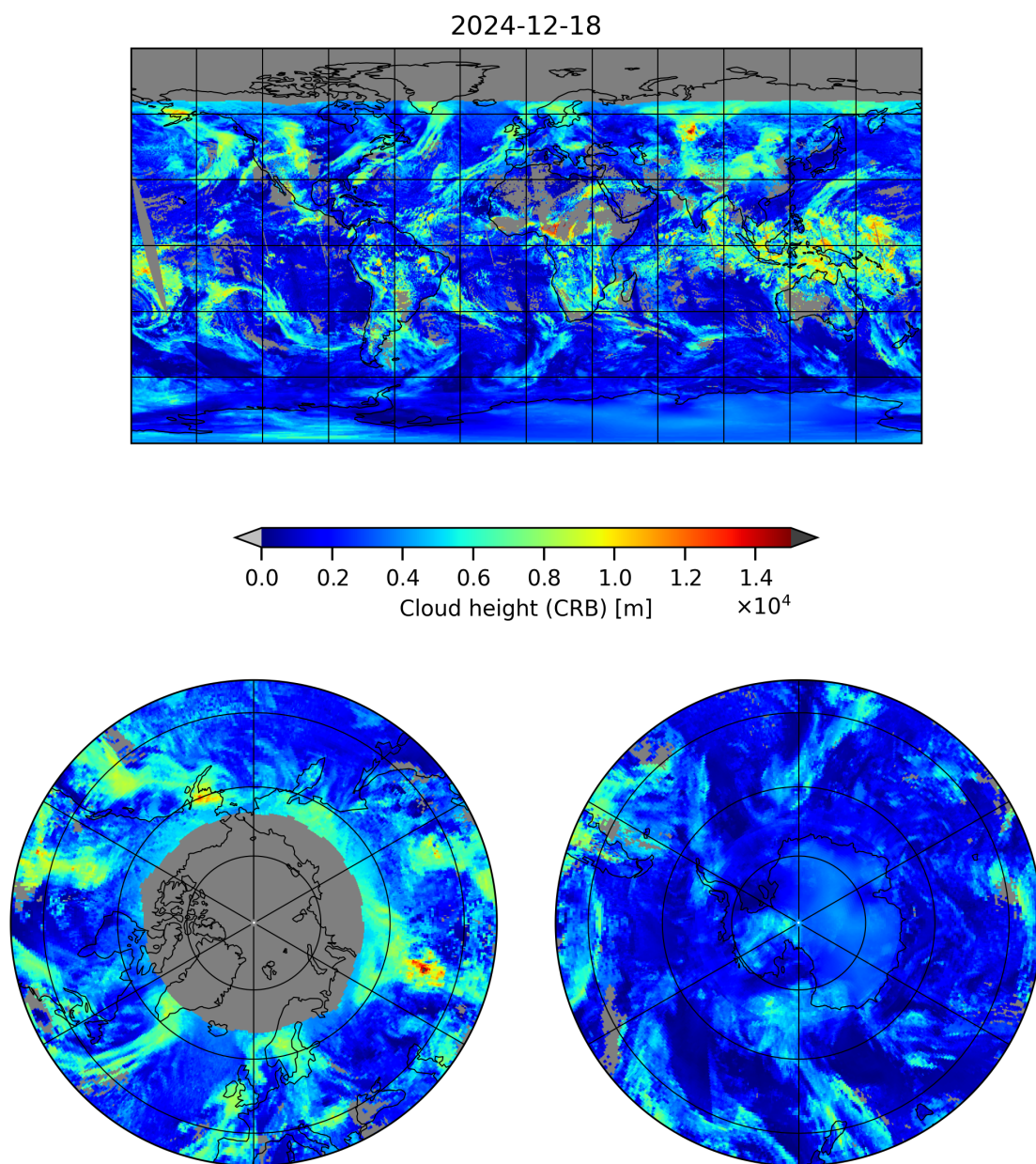


Figure 8: Map of “Cloud height (CRB)” for 2024-12-18 to 2024-12-19

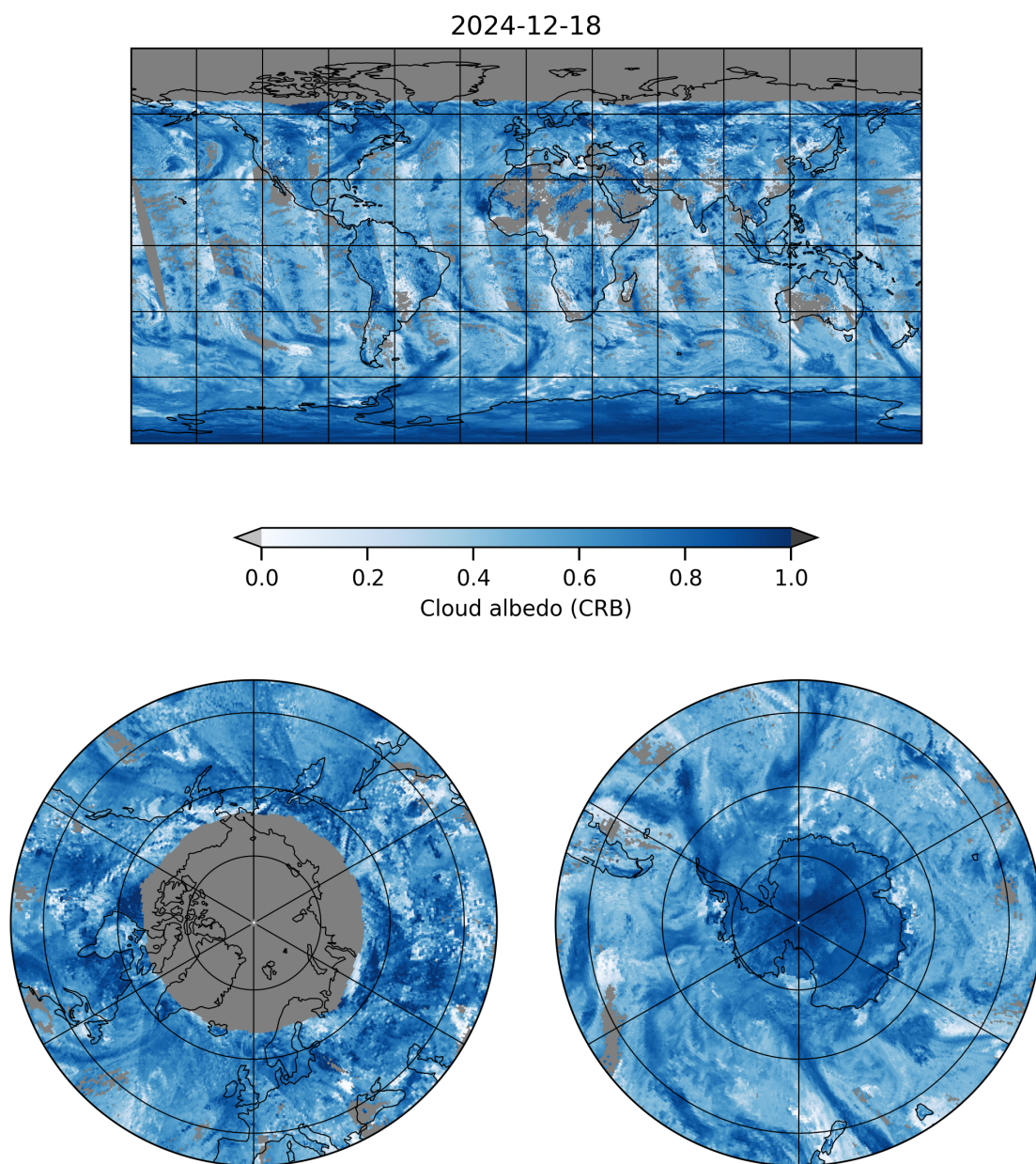


Figure 9: Map of “Cloud albedo (CRB)” for 2024-12-18 to 2024-12-19

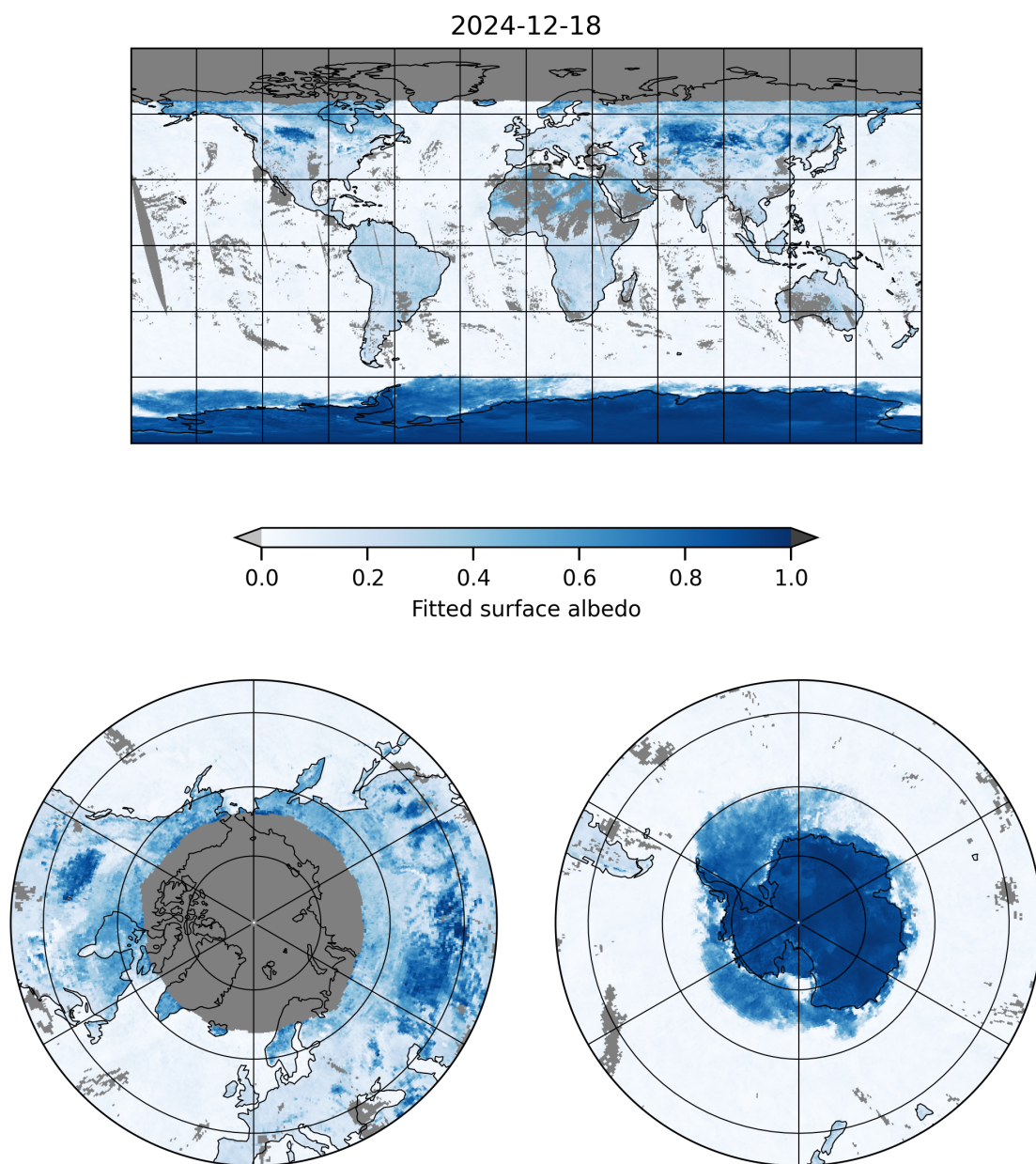


Figure 10: Map of “Fitted surface albedo” for 2024-12-18 to 2024-12-19

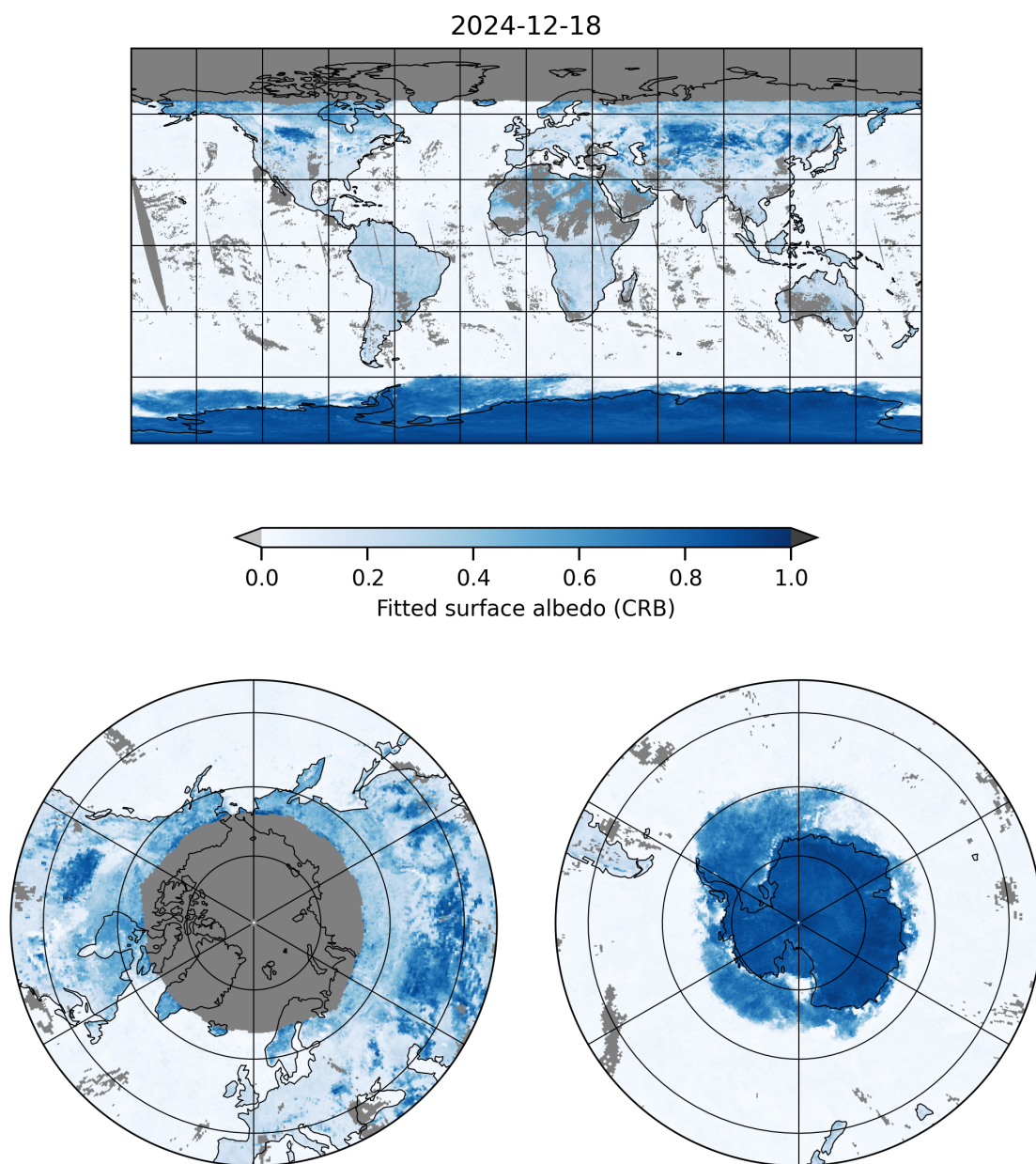


Figure 11: Map of “Fitted surface albedo (CRB)” for 2024-12-18 to 2024-12-19

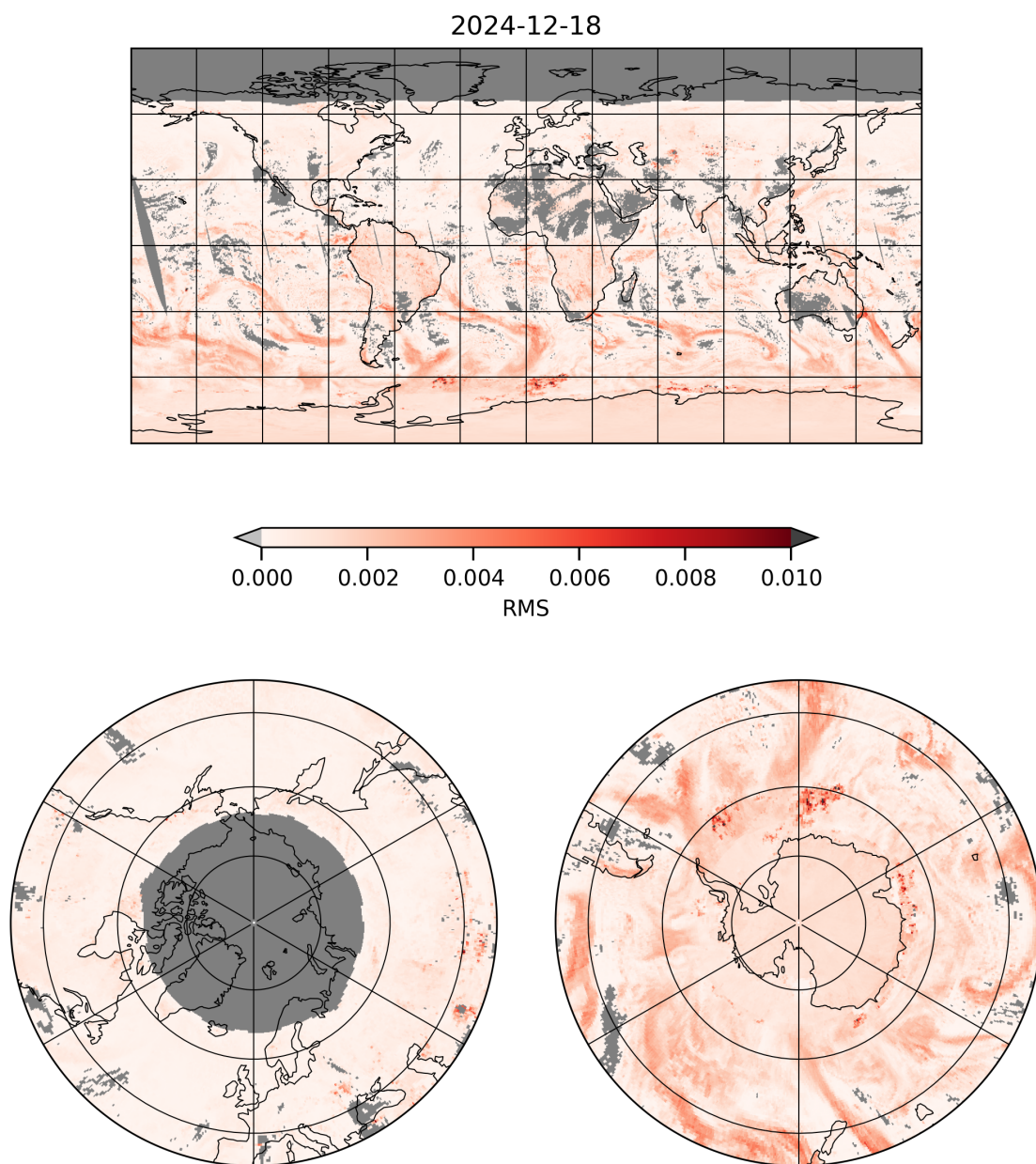


Figure 12: Map of “RMS” for 2024-12-18 to 2024-12-19

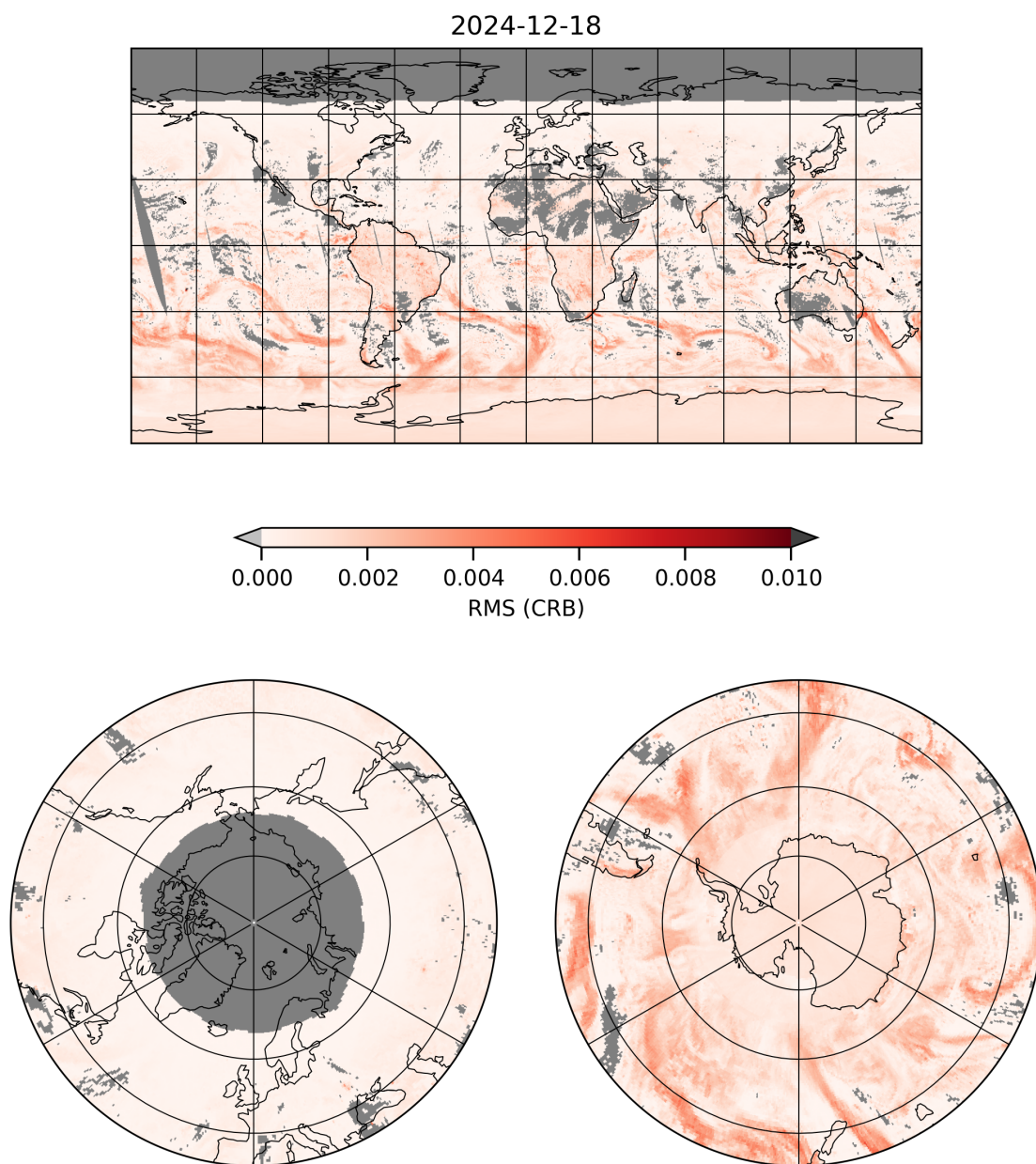


Figure 13: Map of “RMS (CRB)” for 2024-12-18 to 2024-12-19

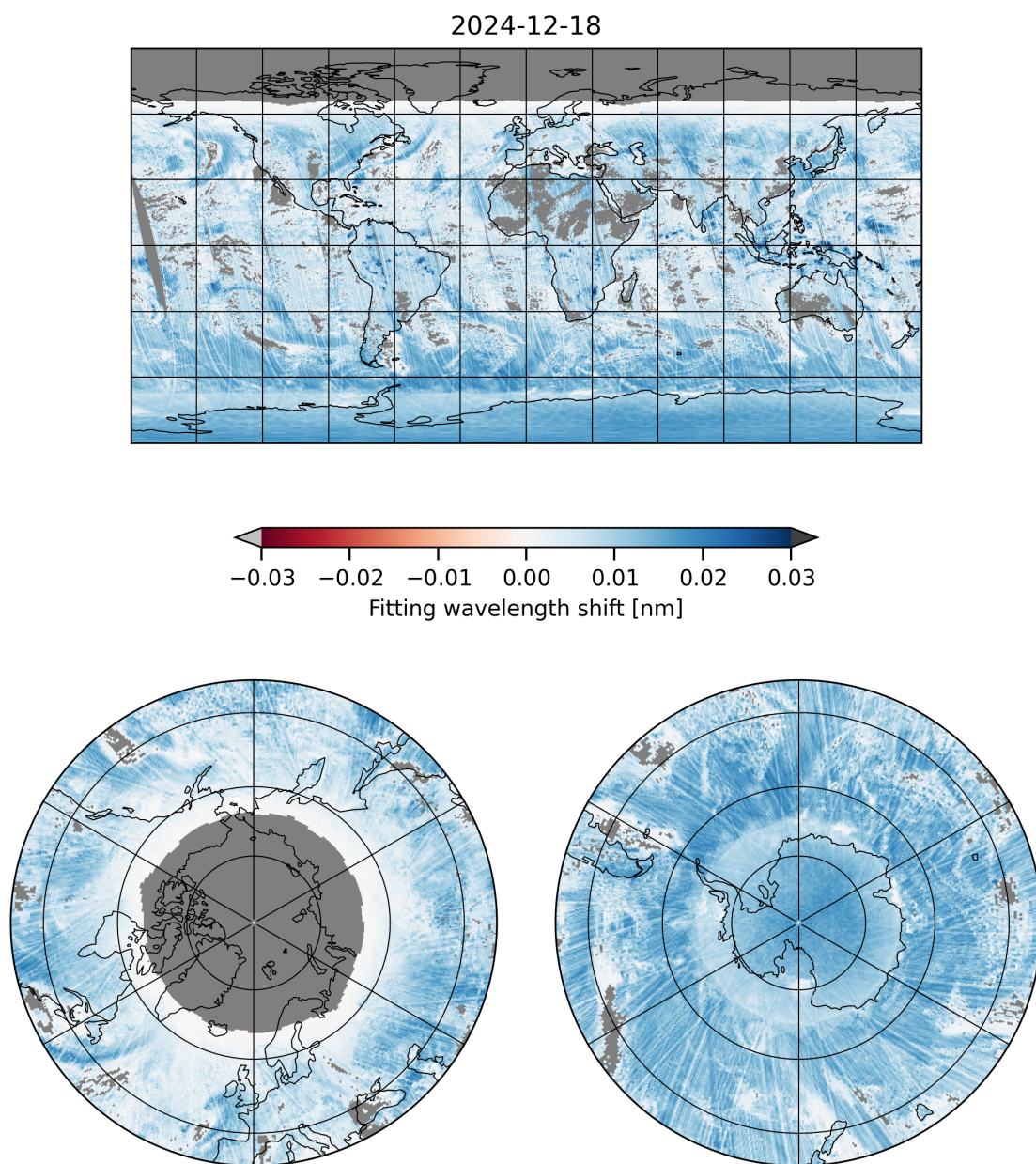


Figure 14: Map of “Fitting wavelength shift” for 2024-12-18 to 2024-12-19

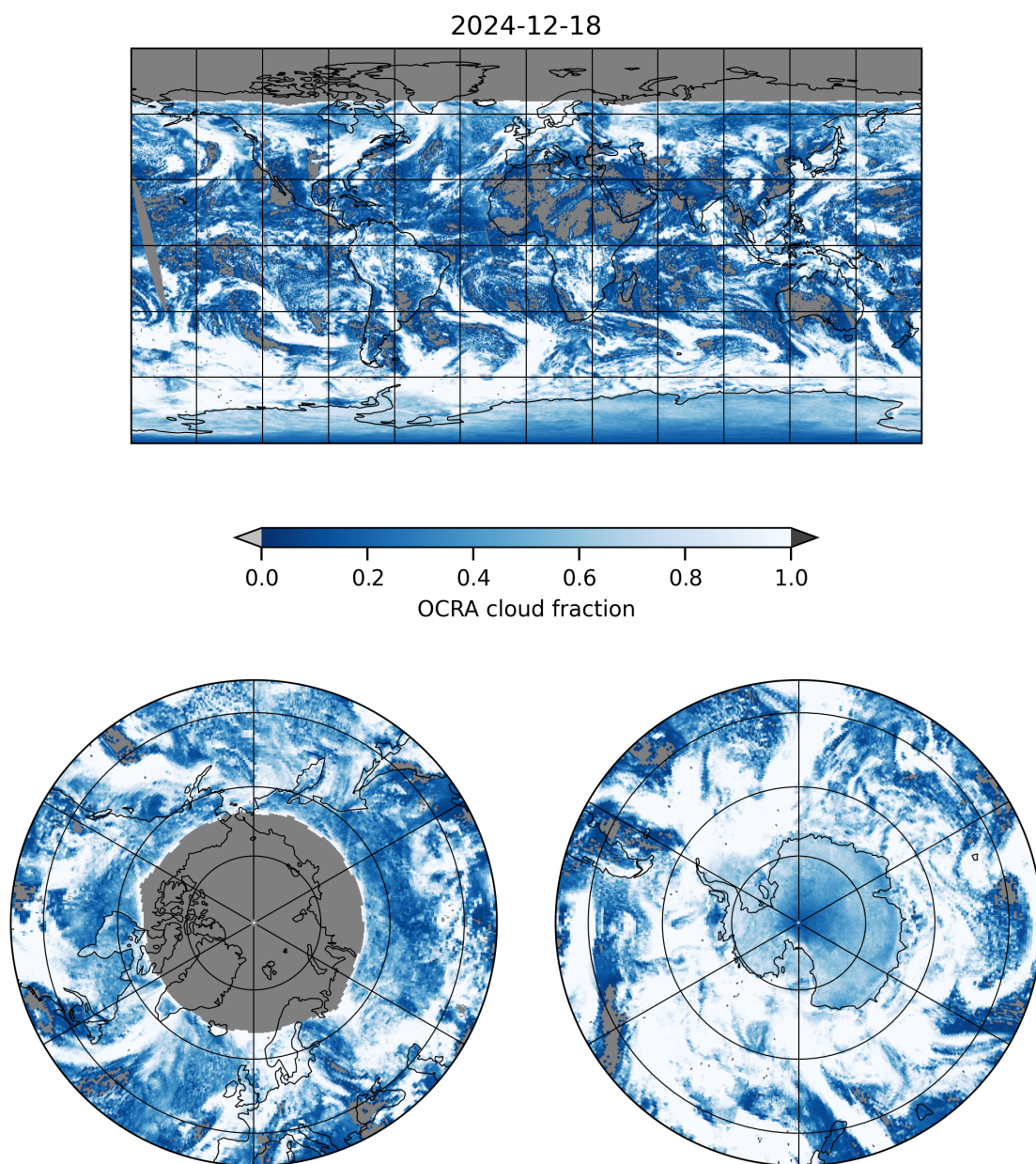


Figure 15: Map of “OCRA cloud fraction” for 2024-12-18 to 2024-12-19

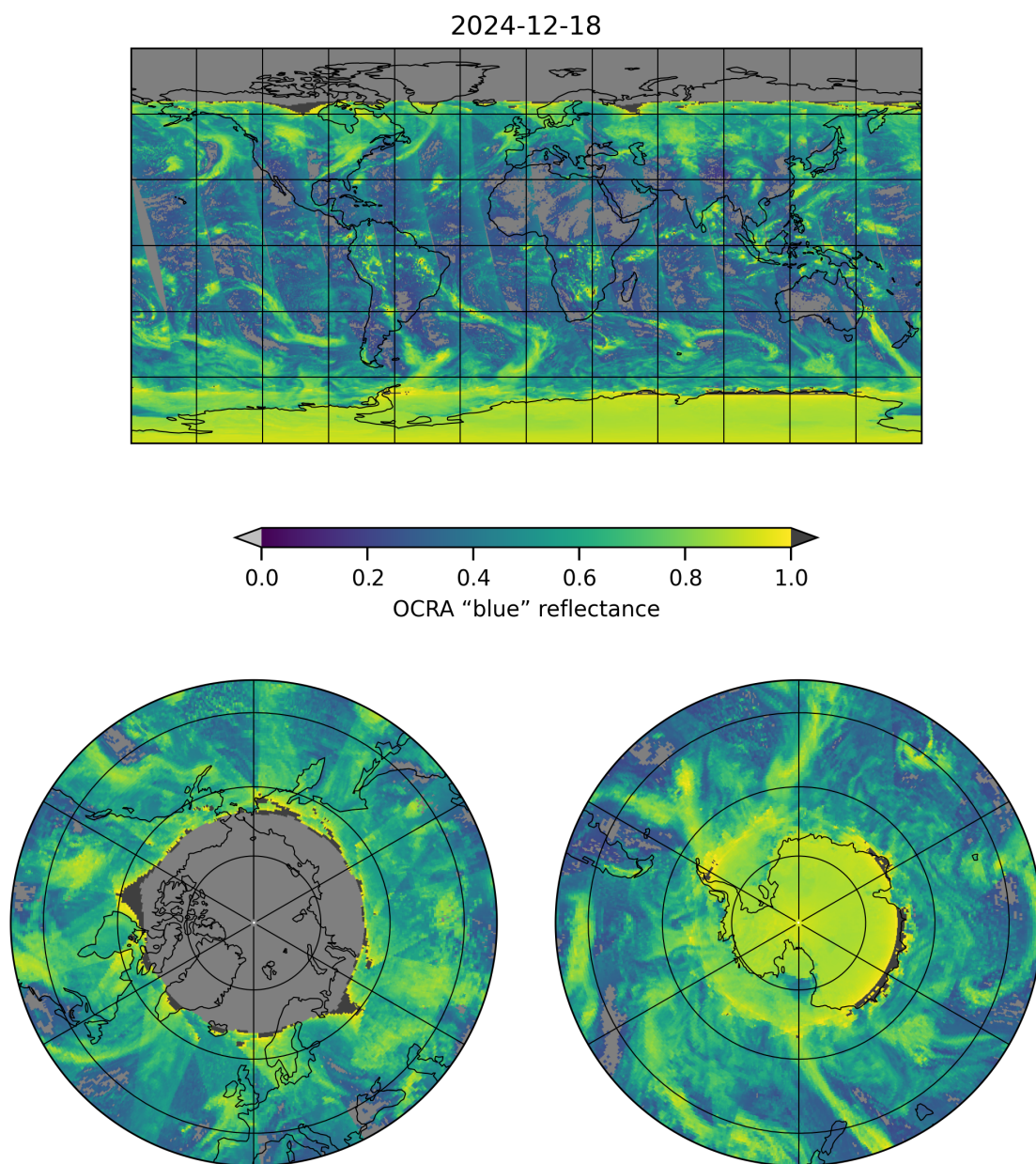


Figure 16: Map of "OCRA "blue" reflectance" for 2024-12-18 to 2024-12-19

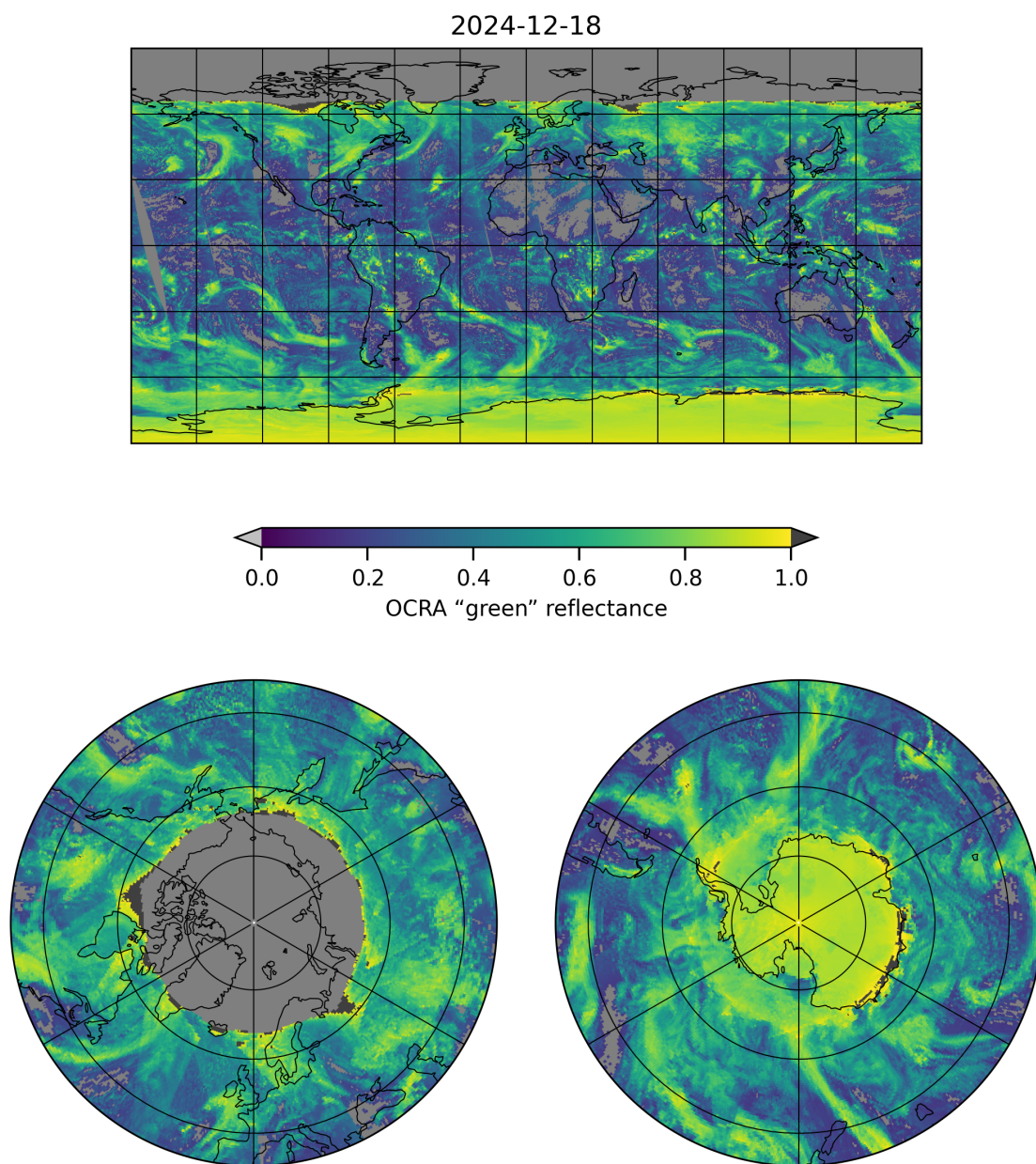


Figure 17: Map of "OCRA "green" reflectance" for 2024-12-18 to 2024-12-19

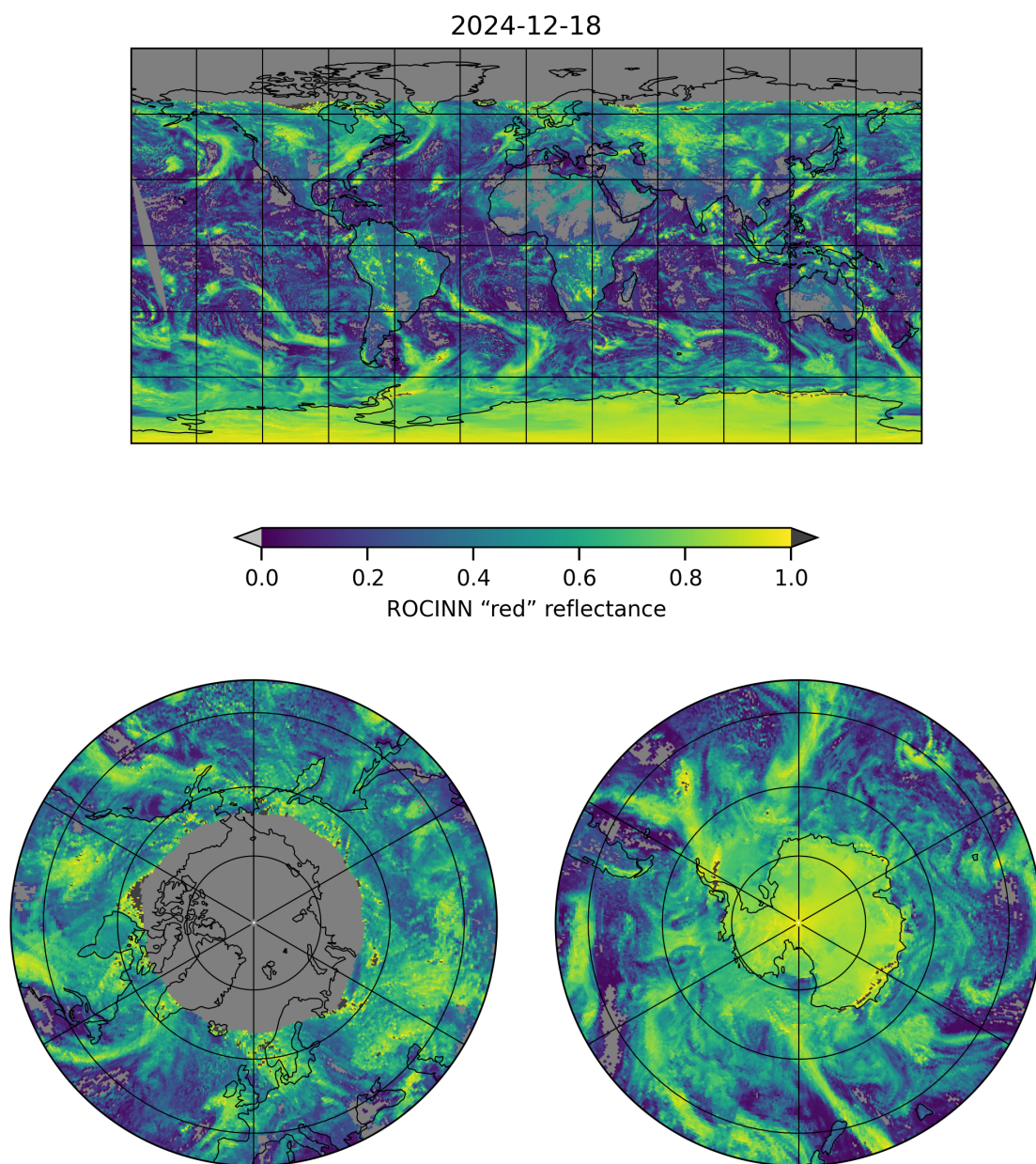


Figure 18: Map of "ROCINN "red" reflectance" for 2024-12-18 to 2024-12-19

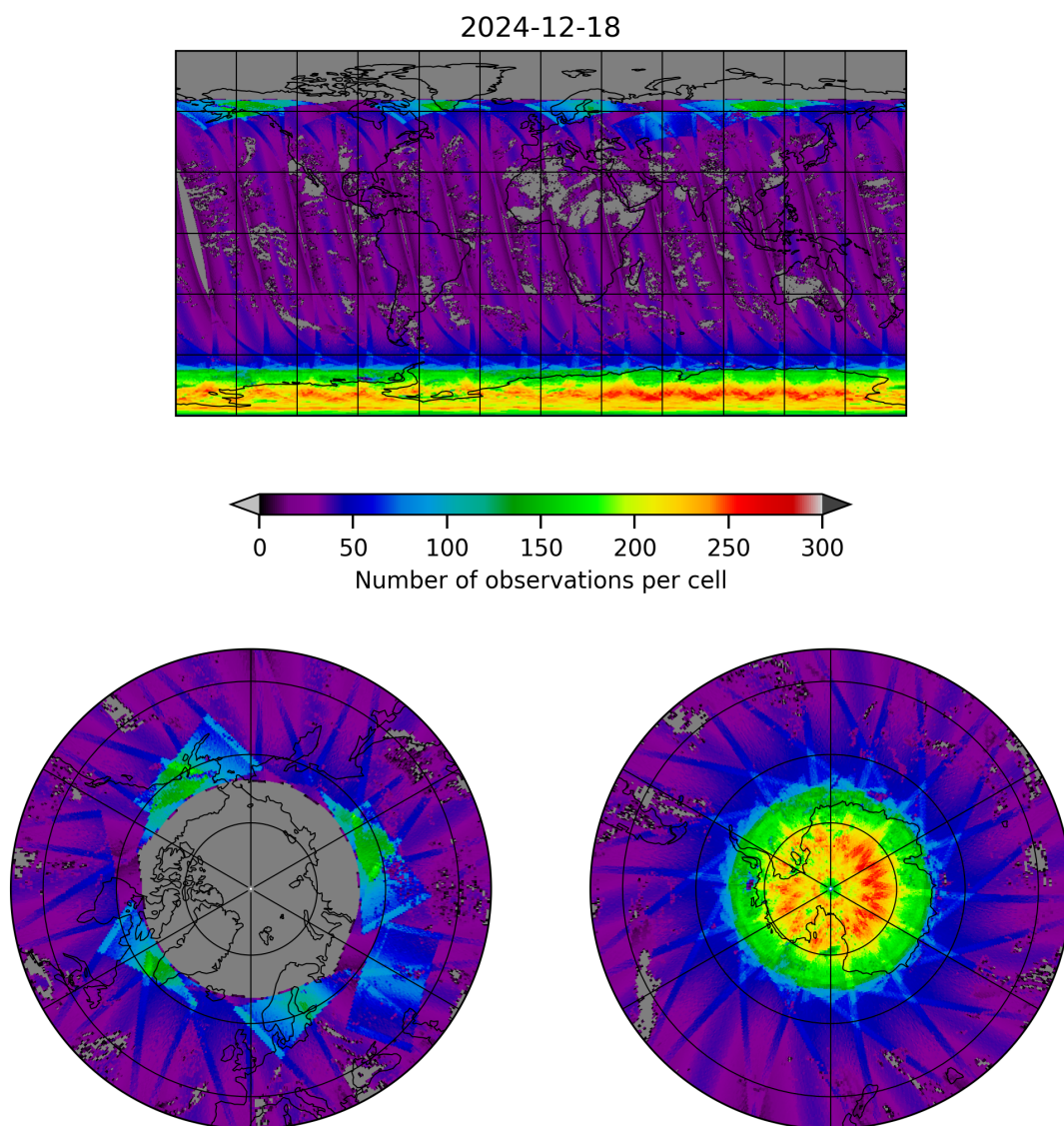


Figure 19: Map of the number of observations for 2024-12-18 to 2024-12-19

7 Zonal average

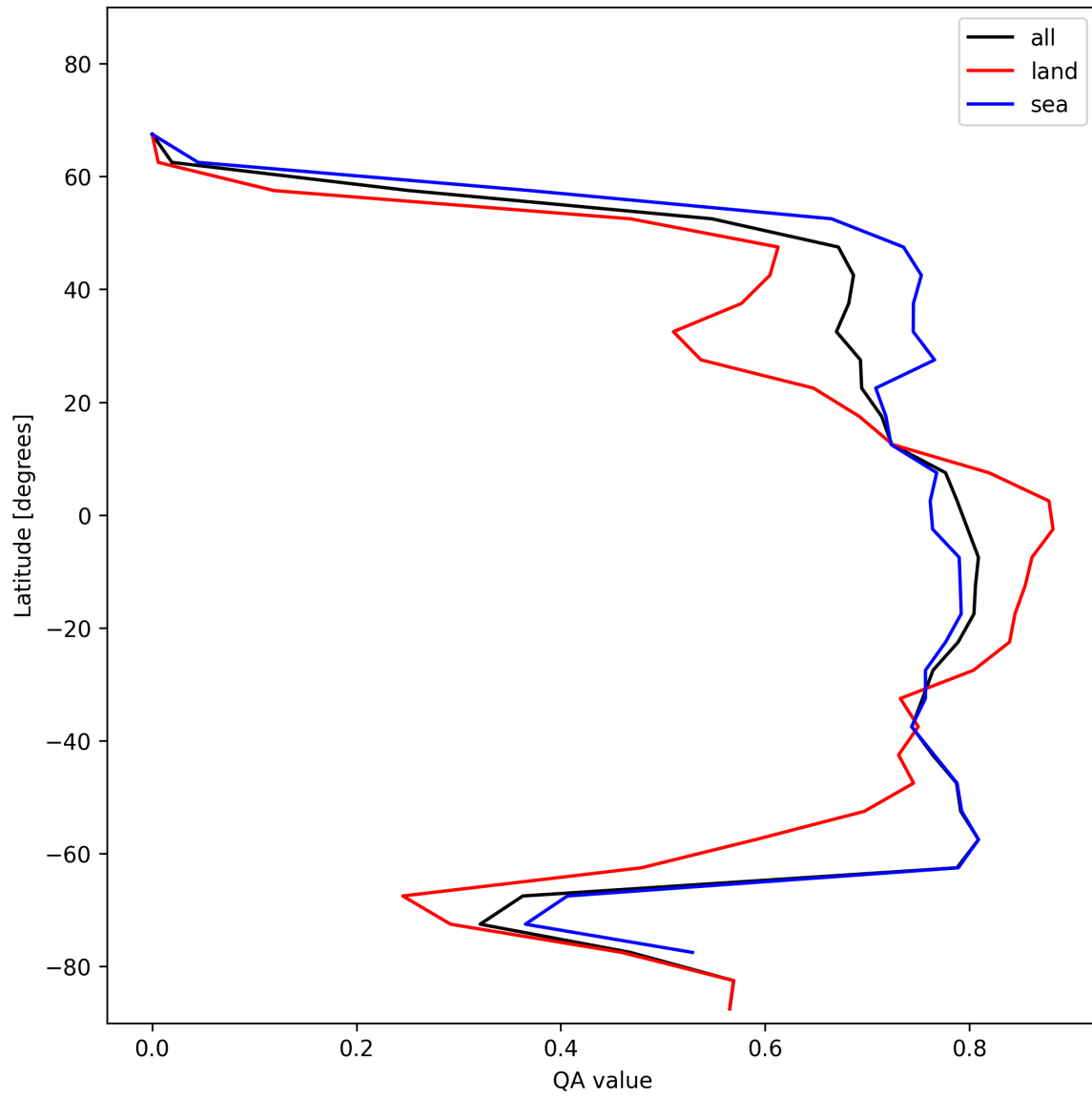


Figure 20: Zonal average of “QA value” for 2024-12-18 to 2024-12-19.

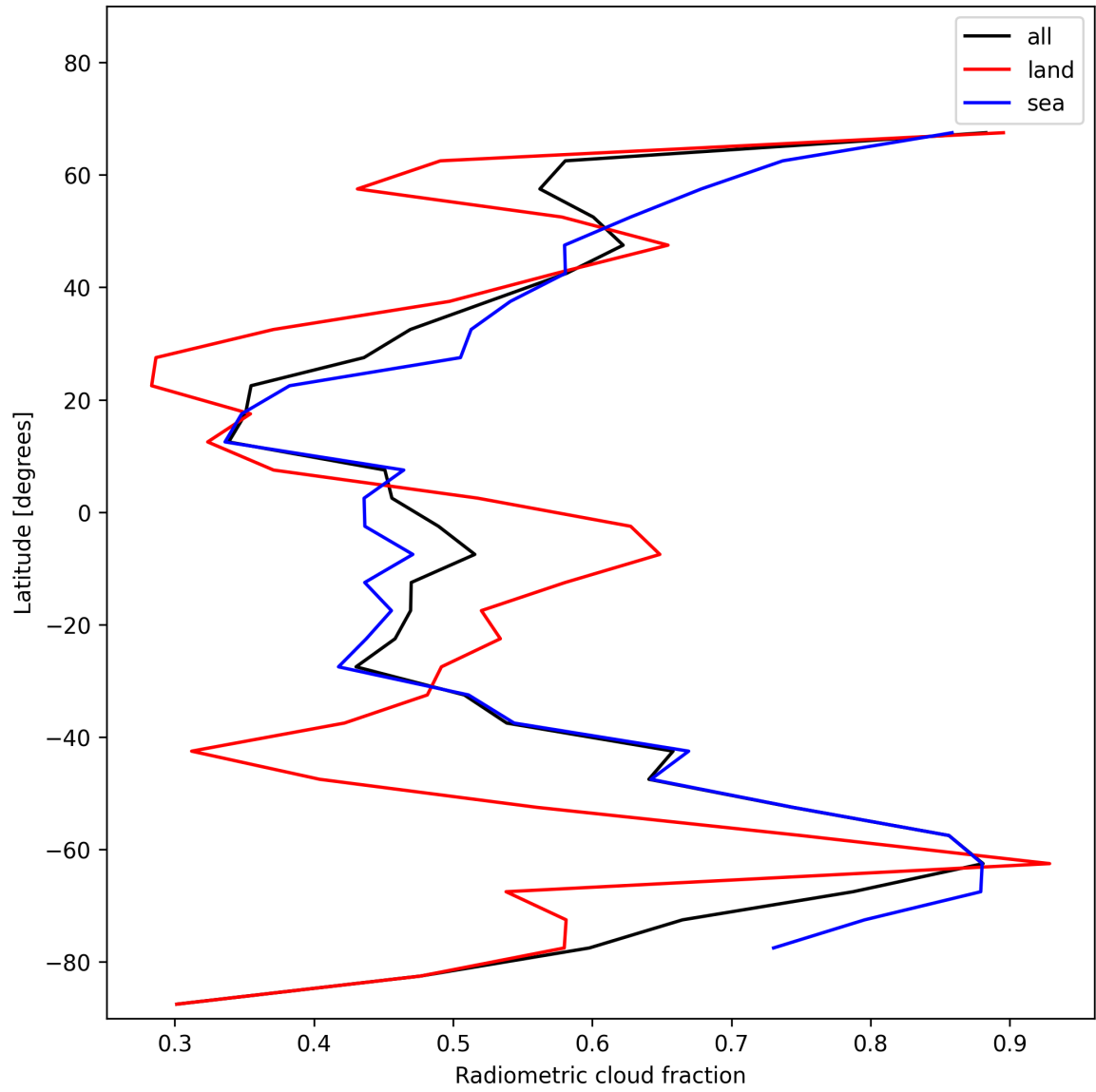


Figure 21: Zonal average of “Radiometric cloud fraction” for 2024-12-18 to 2024-12-19.

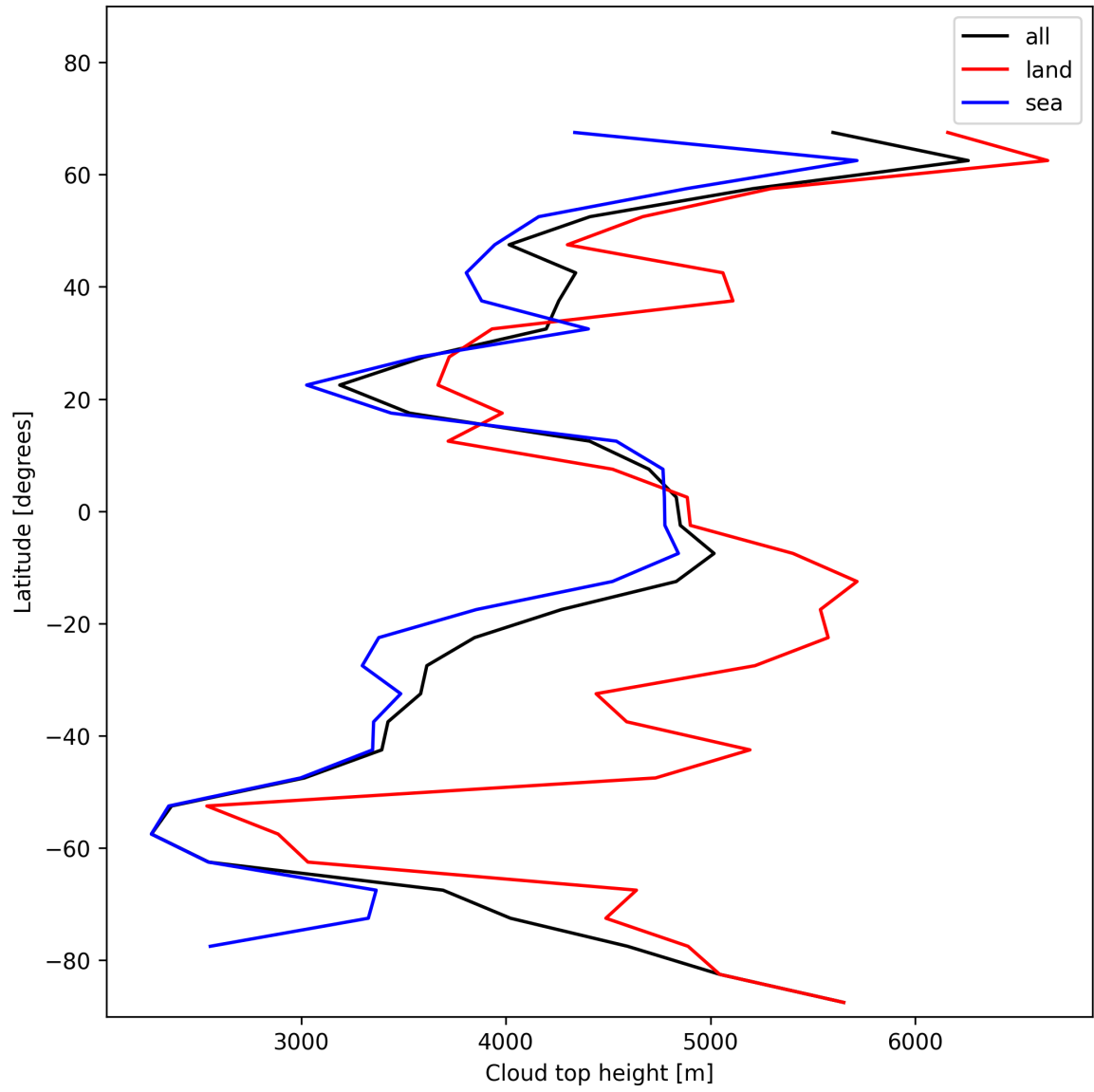


Figure 22: Zonal average of “Cloud top height” for 2024-12-18 to 2024-12-19.

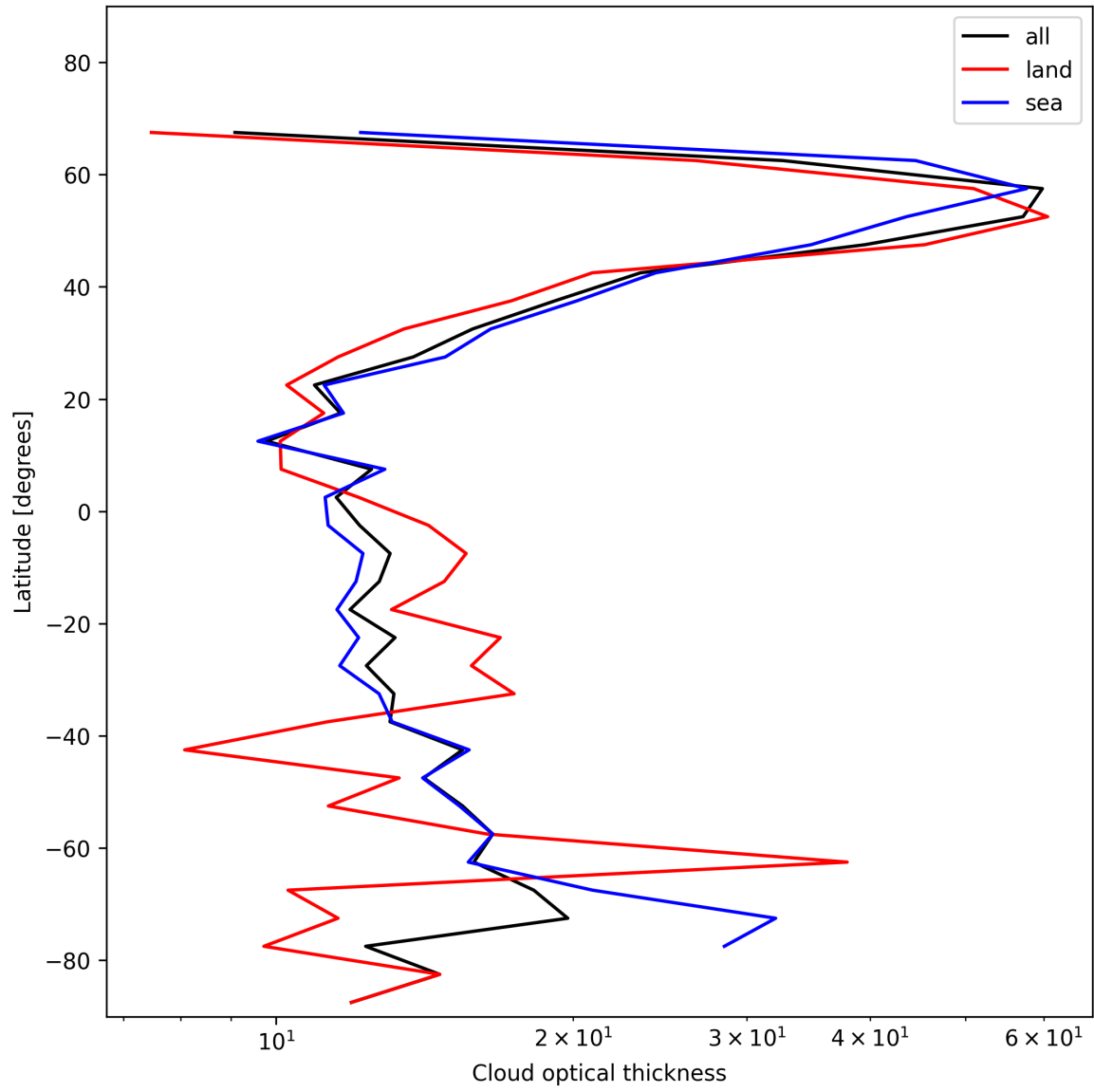


Figure 23: Zonal average of “Cloud optical thickness” for 2024-12-18 to 2024-12-19.

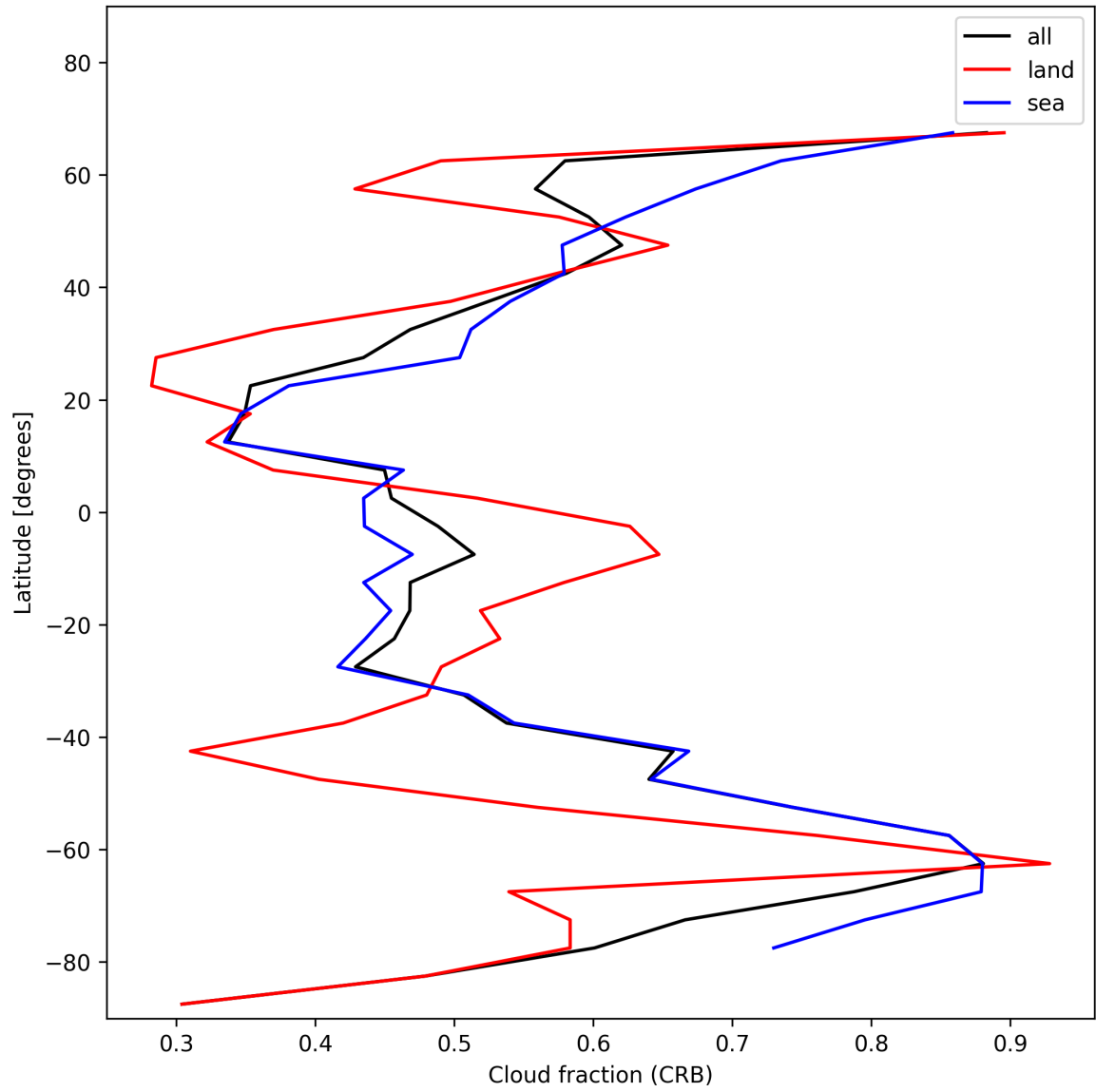


Figure 24: Zonal average of “Cloud fraction (CRB)” for 2024-12-18 to 2024-12-19.

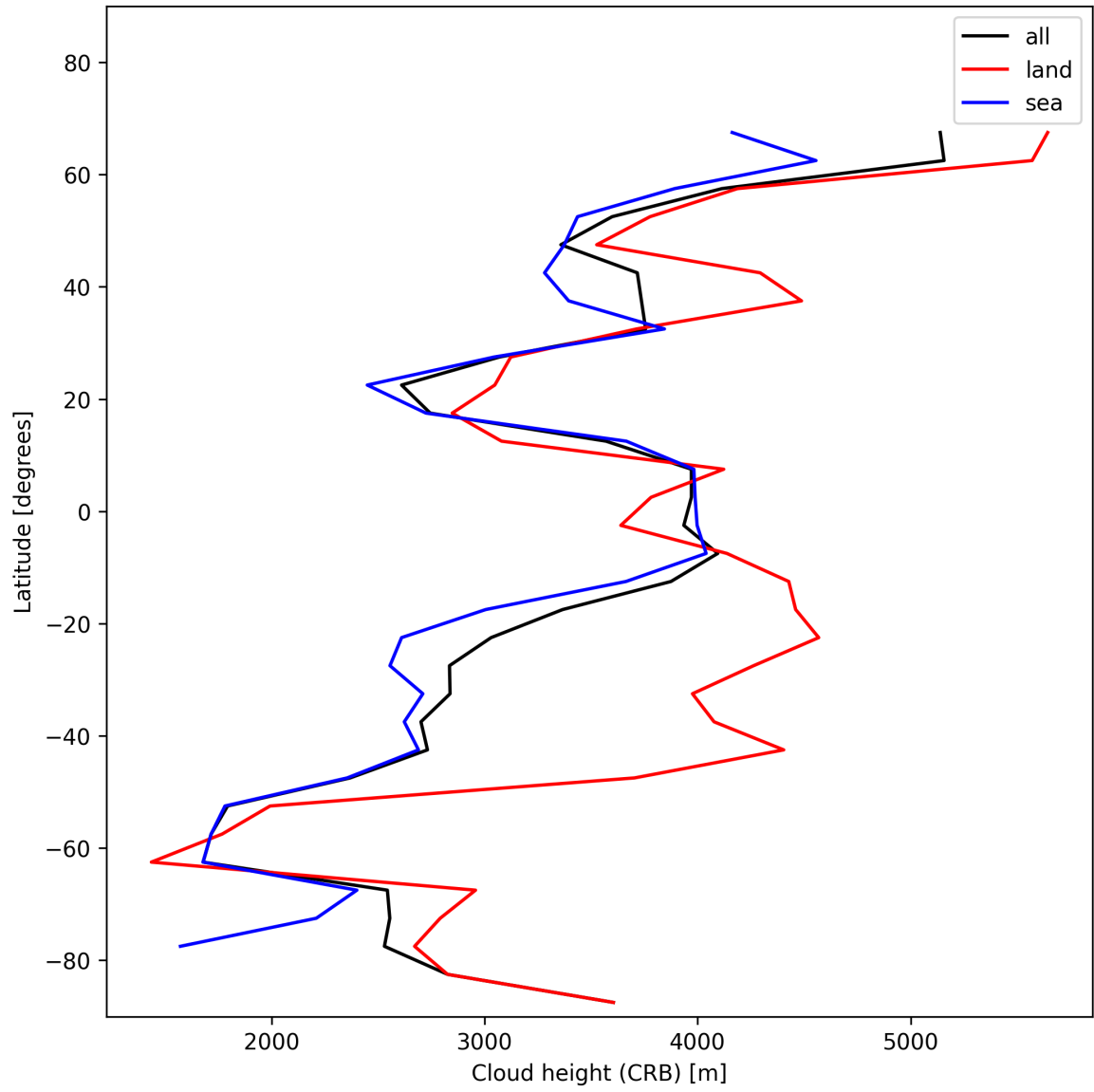


Figure 25: Zonal average of “Cloud height (CRB)” for 2024-12-18 to 2024-12-19.

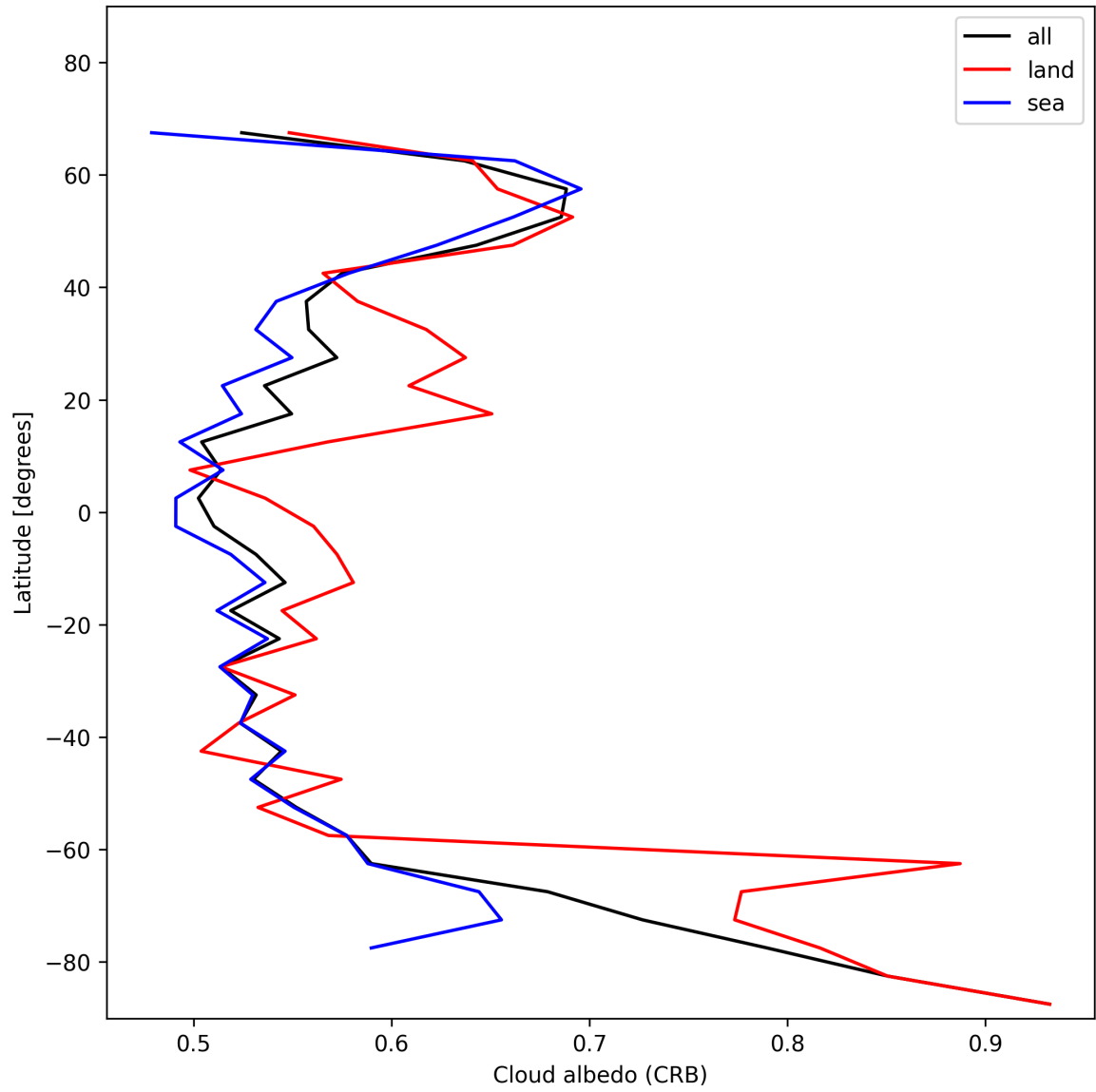


Figure 26: Zonal average of “Cloud albedo (CRB)” for 2024-12-18 to 2024-12-19.

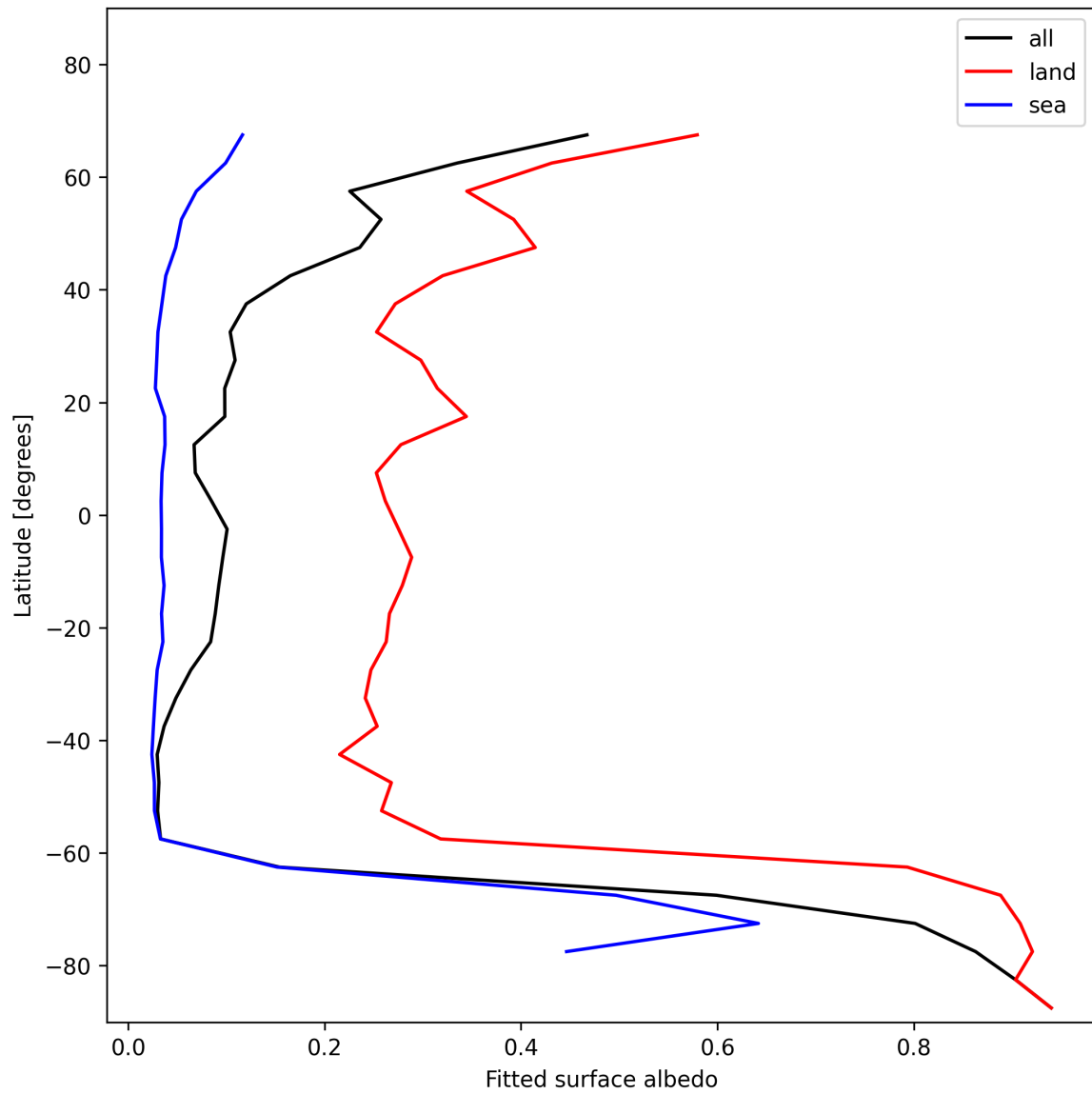


Figure 27: Zonal average of “Fitted surface albedo” for 2024-12-18 to 2024-12-19.

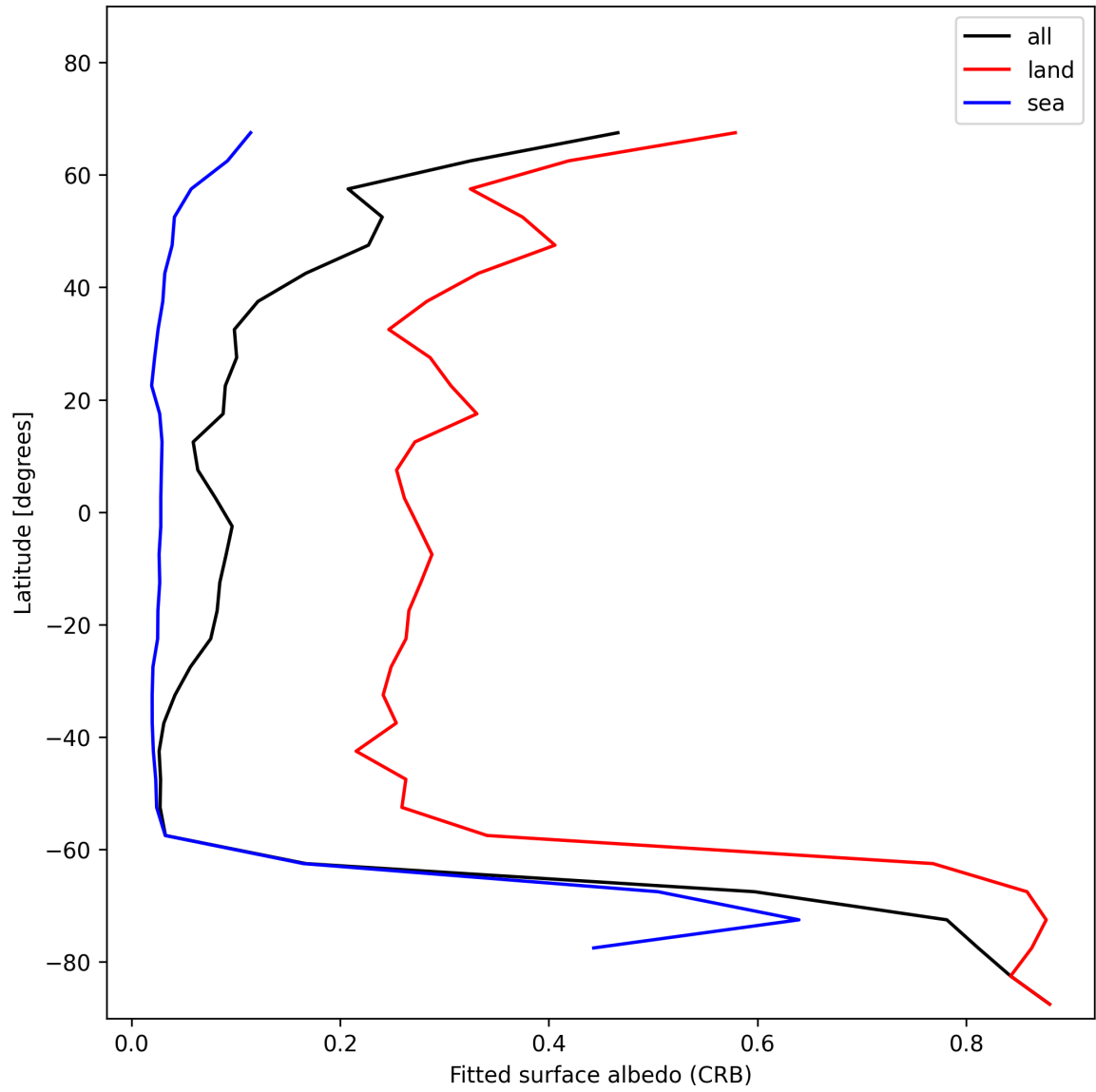


Figure 28: Zonal average of “Fitted surface albedo (CRB)” for 2024-12-18 to 2024-12-19.

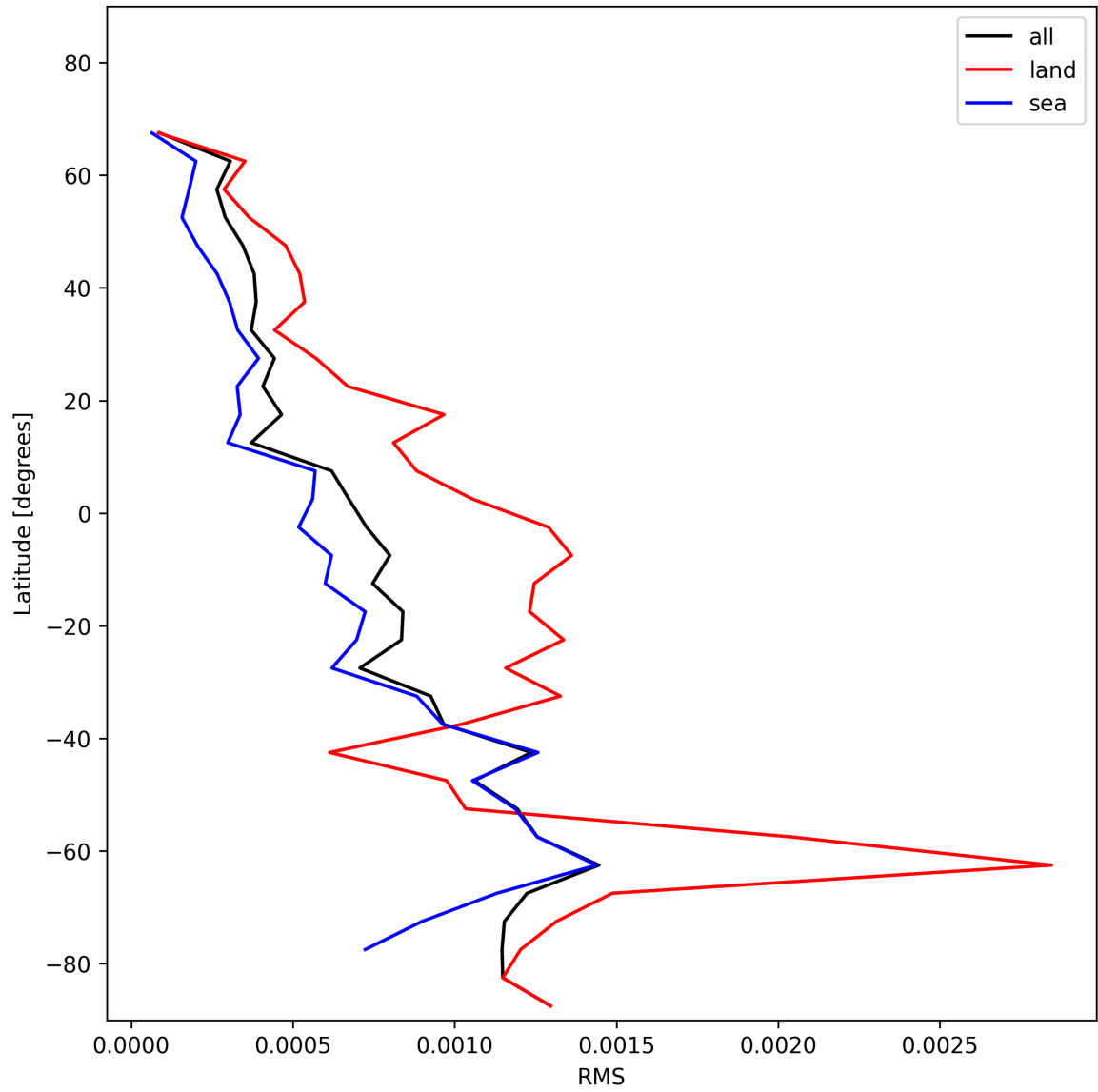


Figure 29: Zonal average of “RMS” for 2024-12-18 to 2024-12-19.

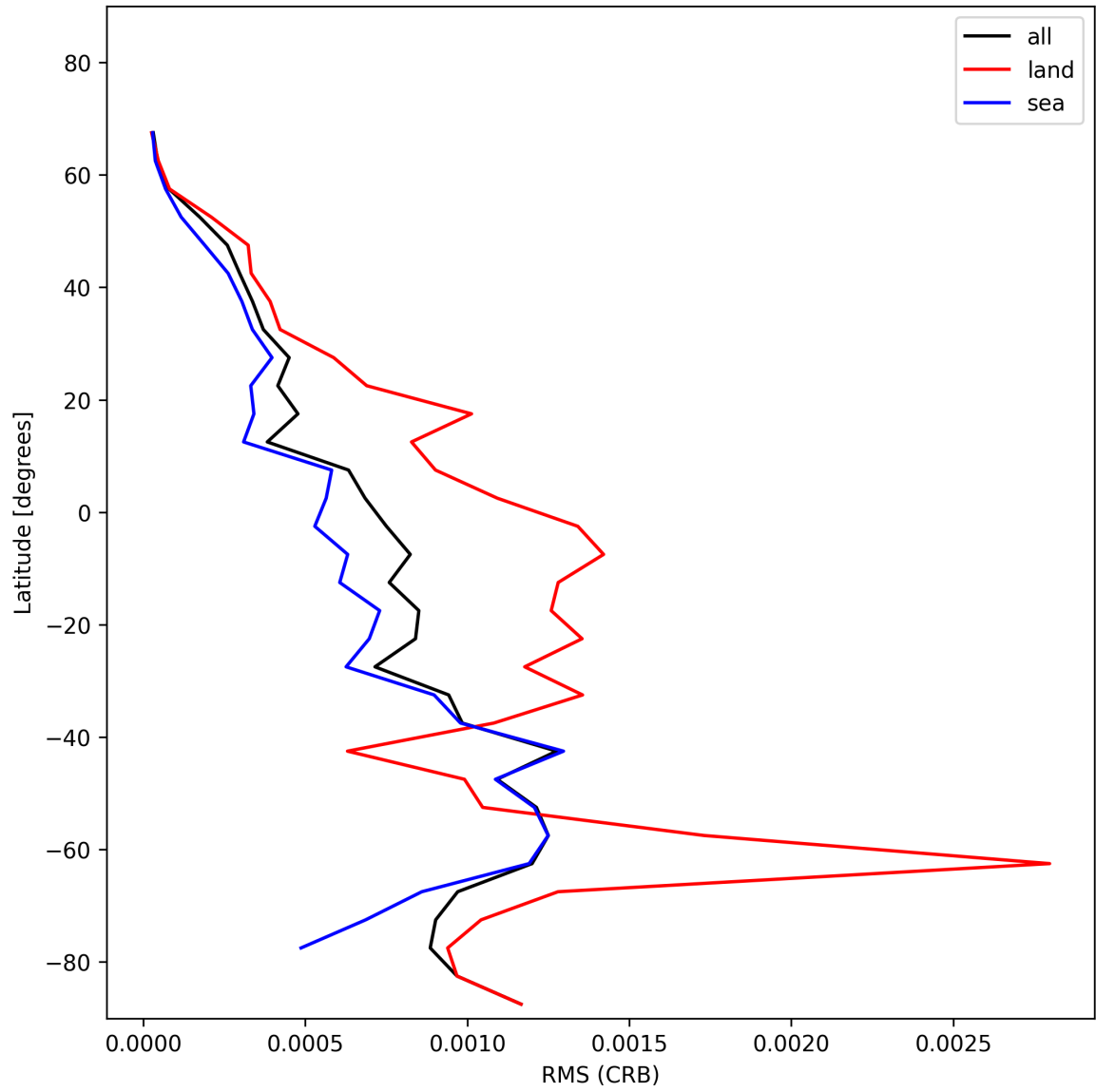


Figure 30: Zonal average of “RMS (CRB)” for 2024-12-18 to 2024-12-19.

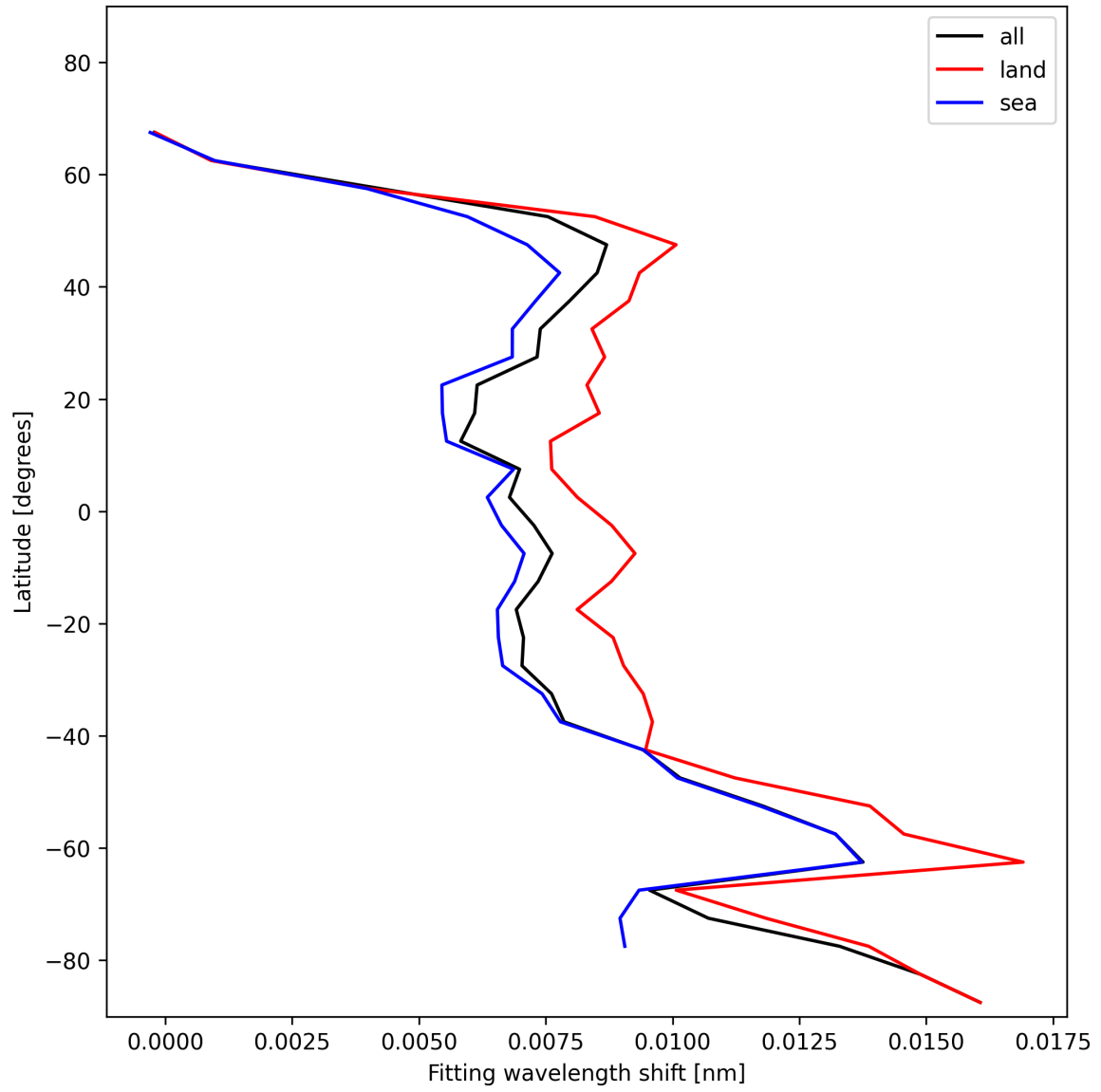


Figure 31: Zonal average of “Fitting wavelength shift” for 2024-12-18 to 2024-12-19.

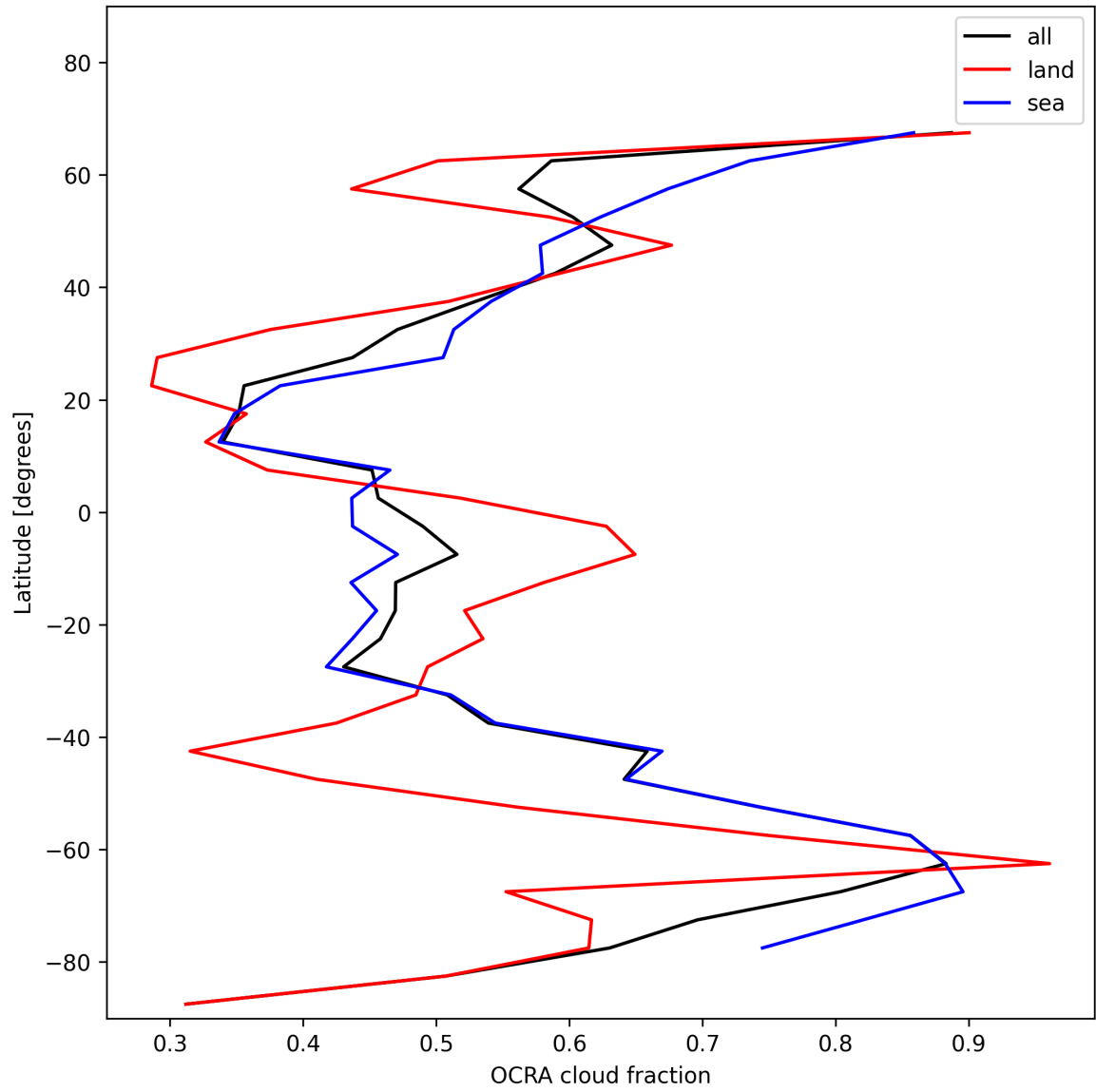


Figure 32: Zonal average of “OCRA cloud fraction” for 2024-12-18 to 2024-12-19.

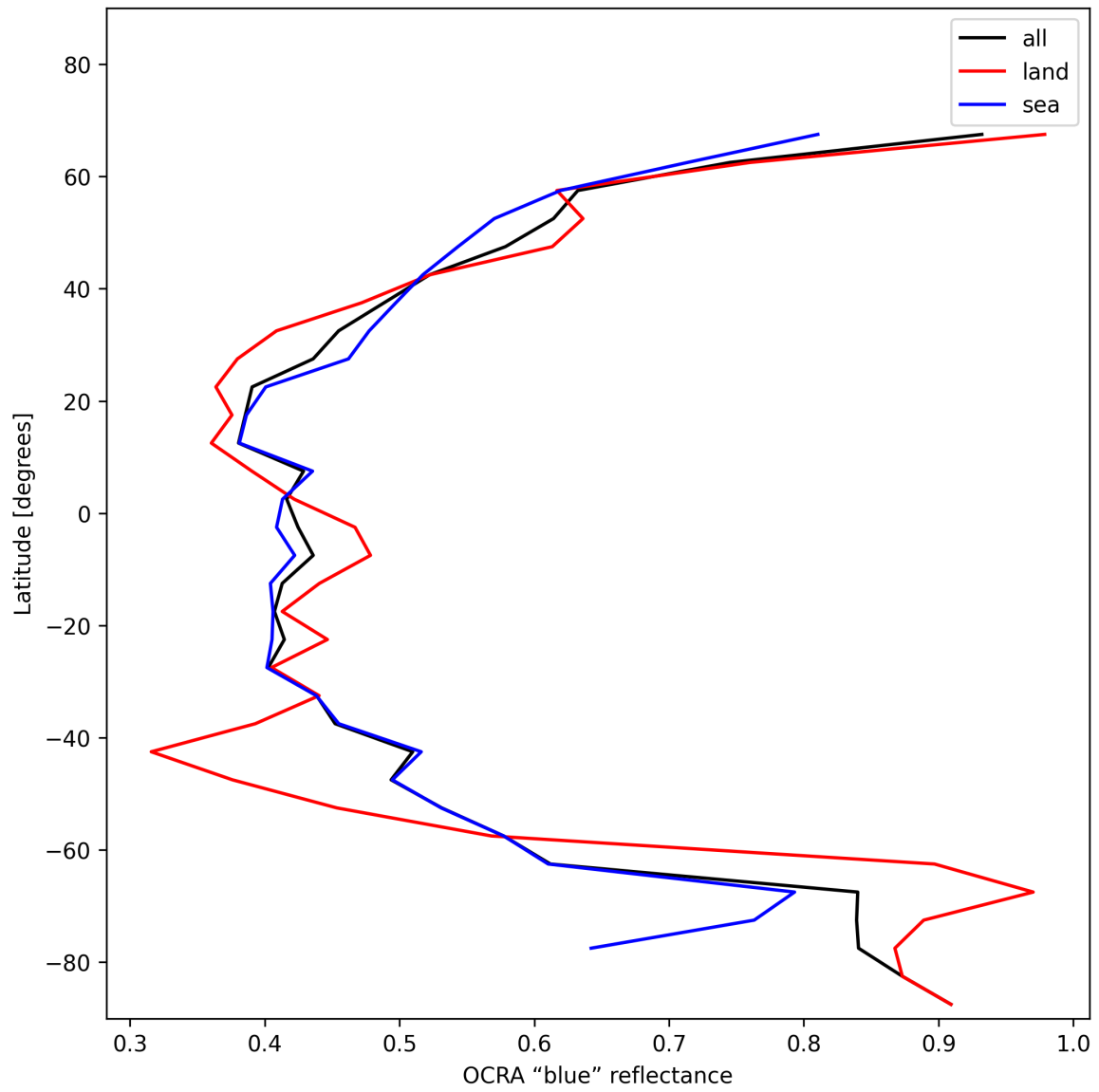


Figure 33: Zonal average of “OCRA “blue” reflectance” for 2024-12-18 to 2024-12-19.

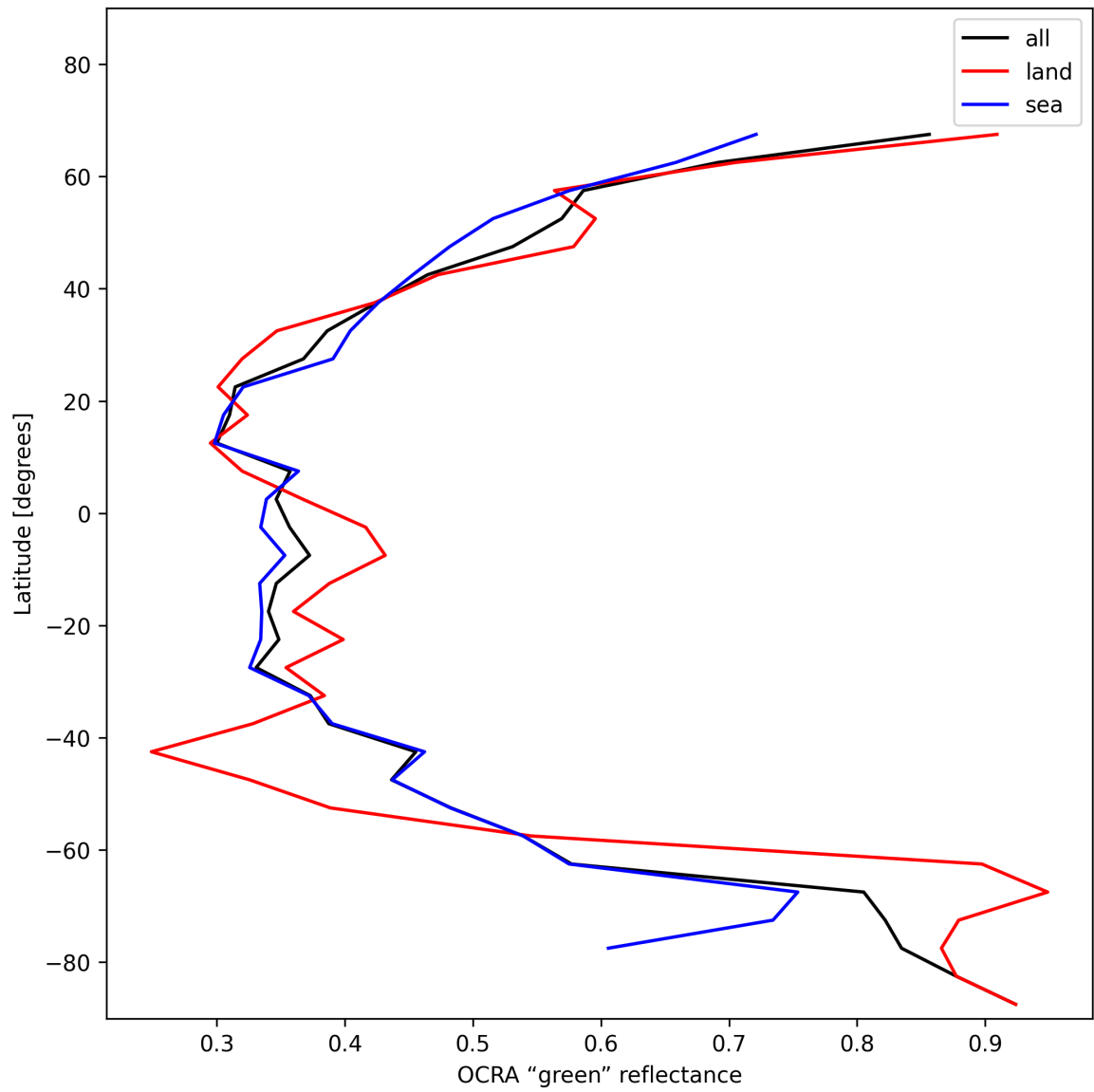


Figure 34: Zonal average of “OCRA “green” reflectance” for 2024-12-18 to 2024-12-19.

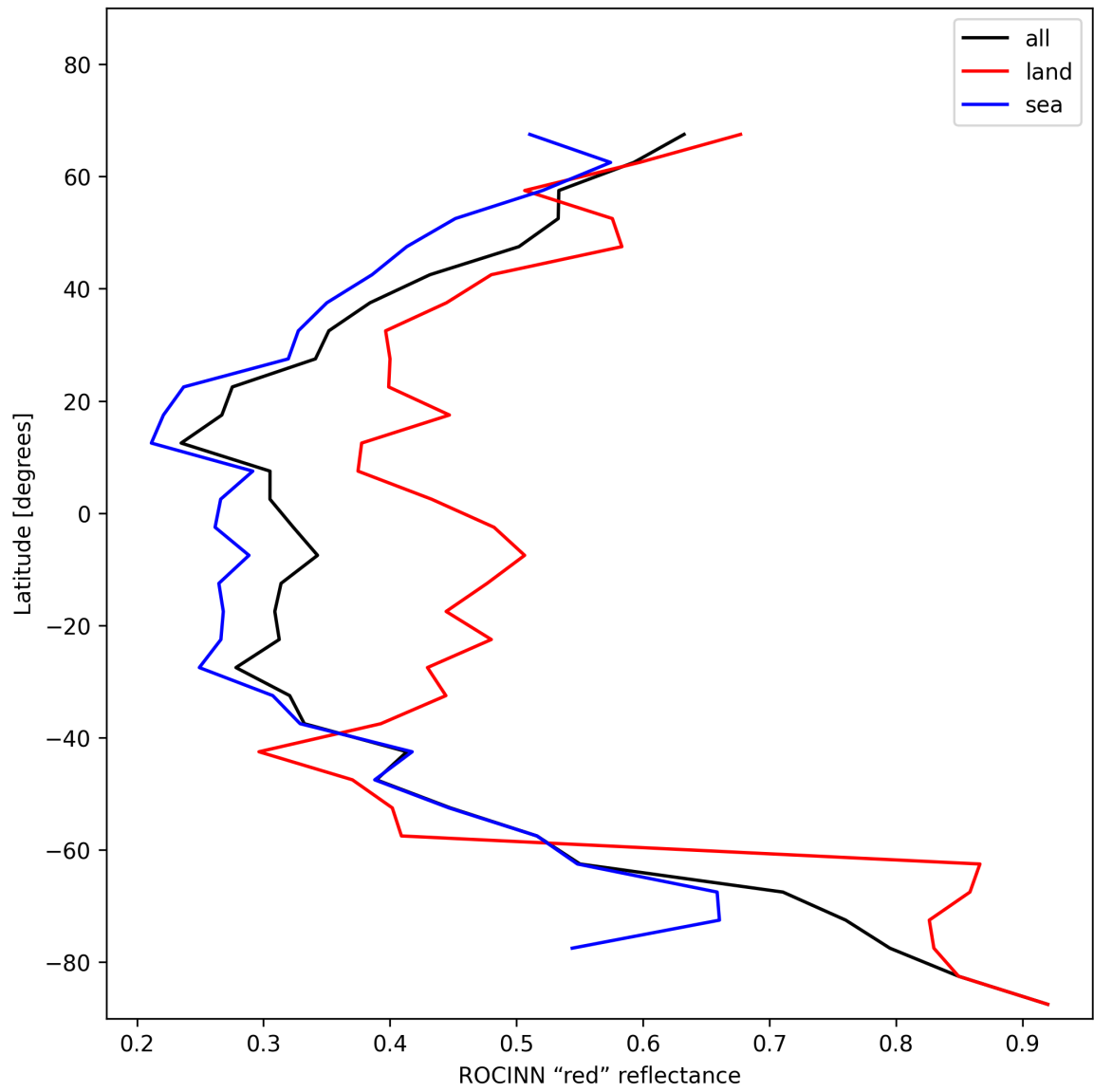


Figure 35: Zonal average of “ROCINN “red” reflectance” for 2024-12-18 to 2024-12-19.

8 Histograms

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

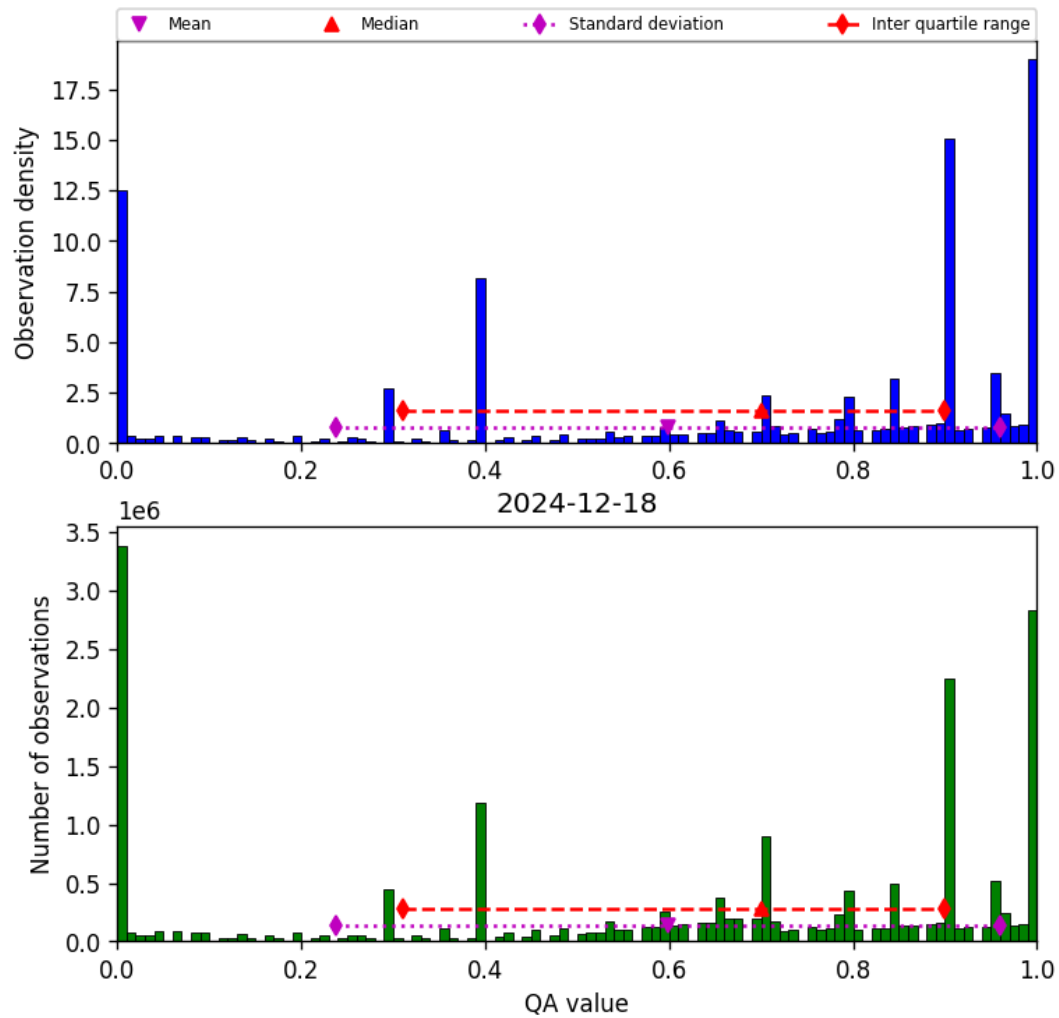


Figure 36: Histogram of “QA value” for 2024-12-18 to 2024-12-19

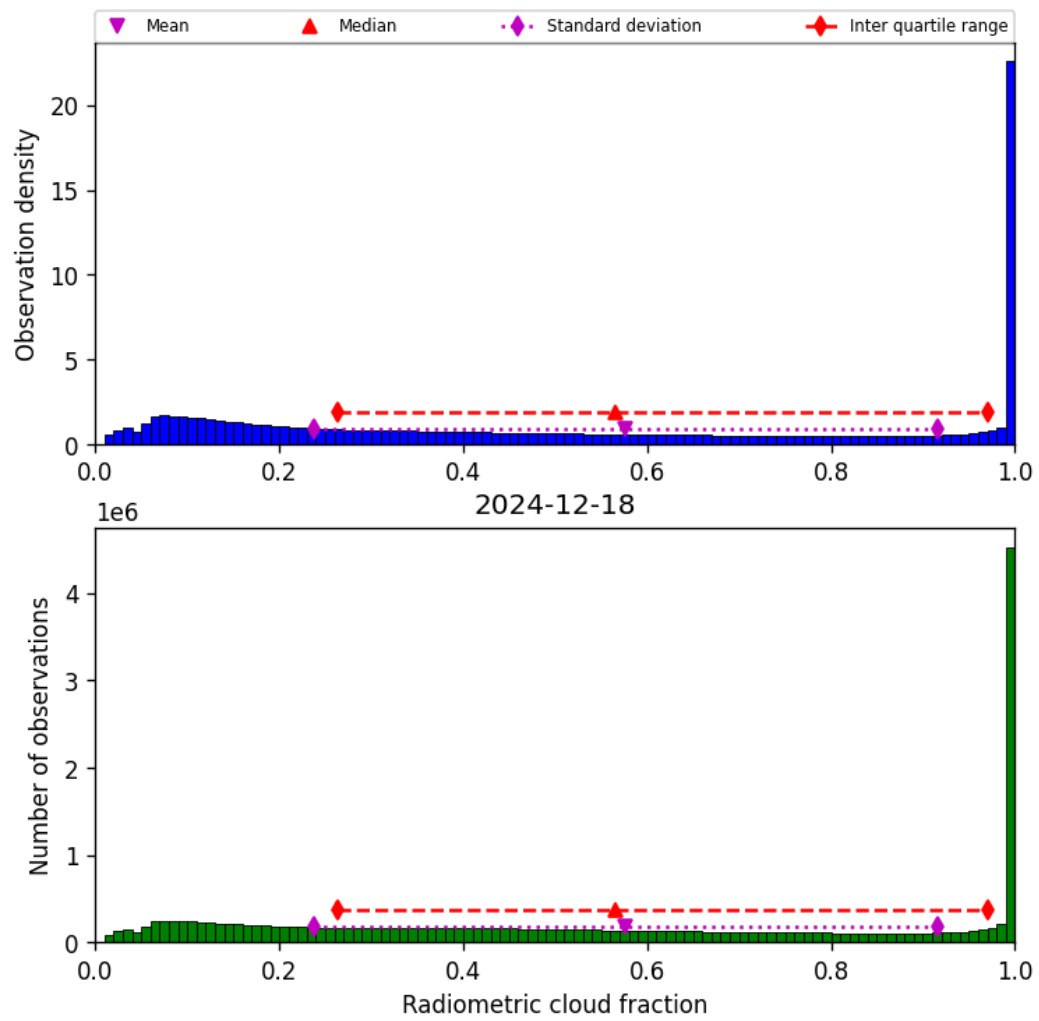


Figure 37: Histogram of “Radiometric cloud fraction” for 2024-12-18 to 2024-12-19

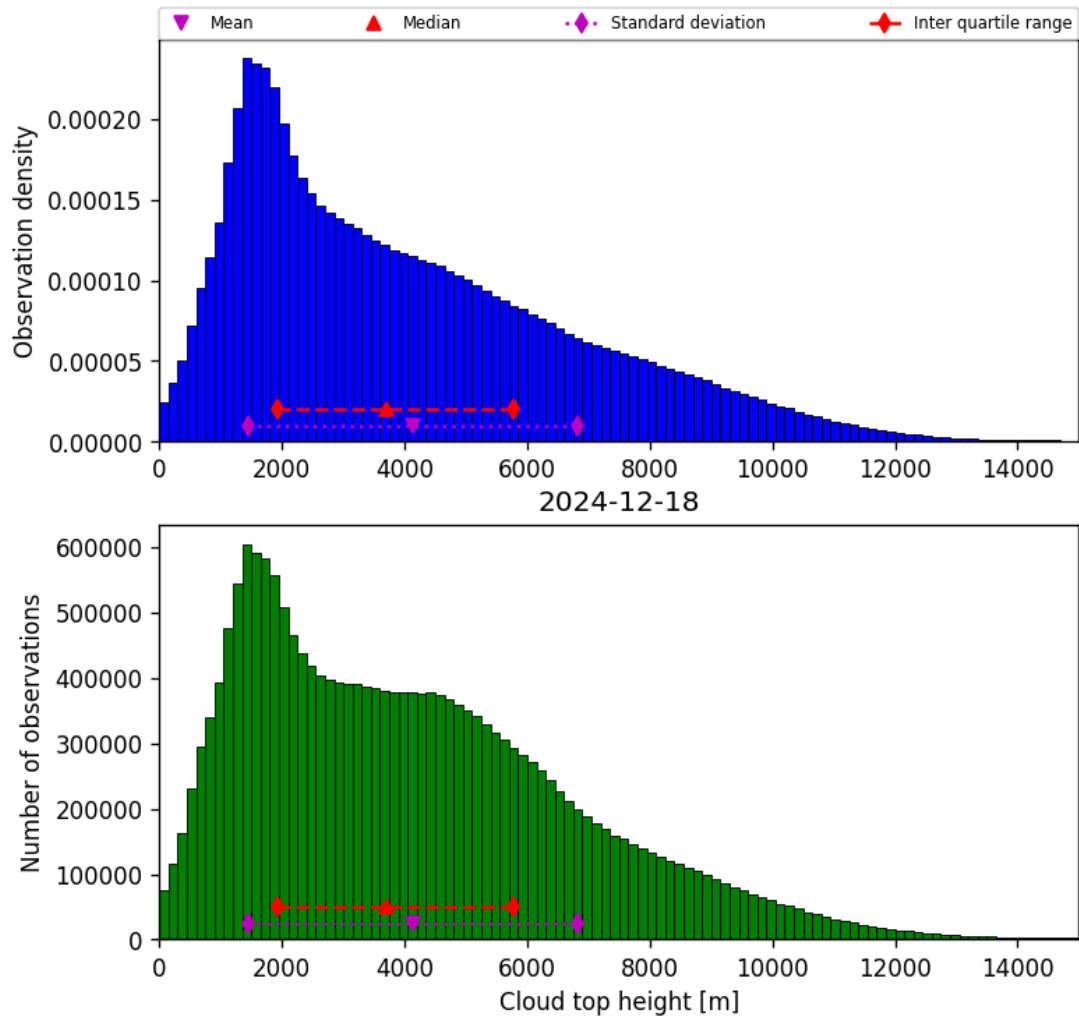


Figure 38: Histogram of “Cloud top height” for 2024-12-18 to 2024-12-19

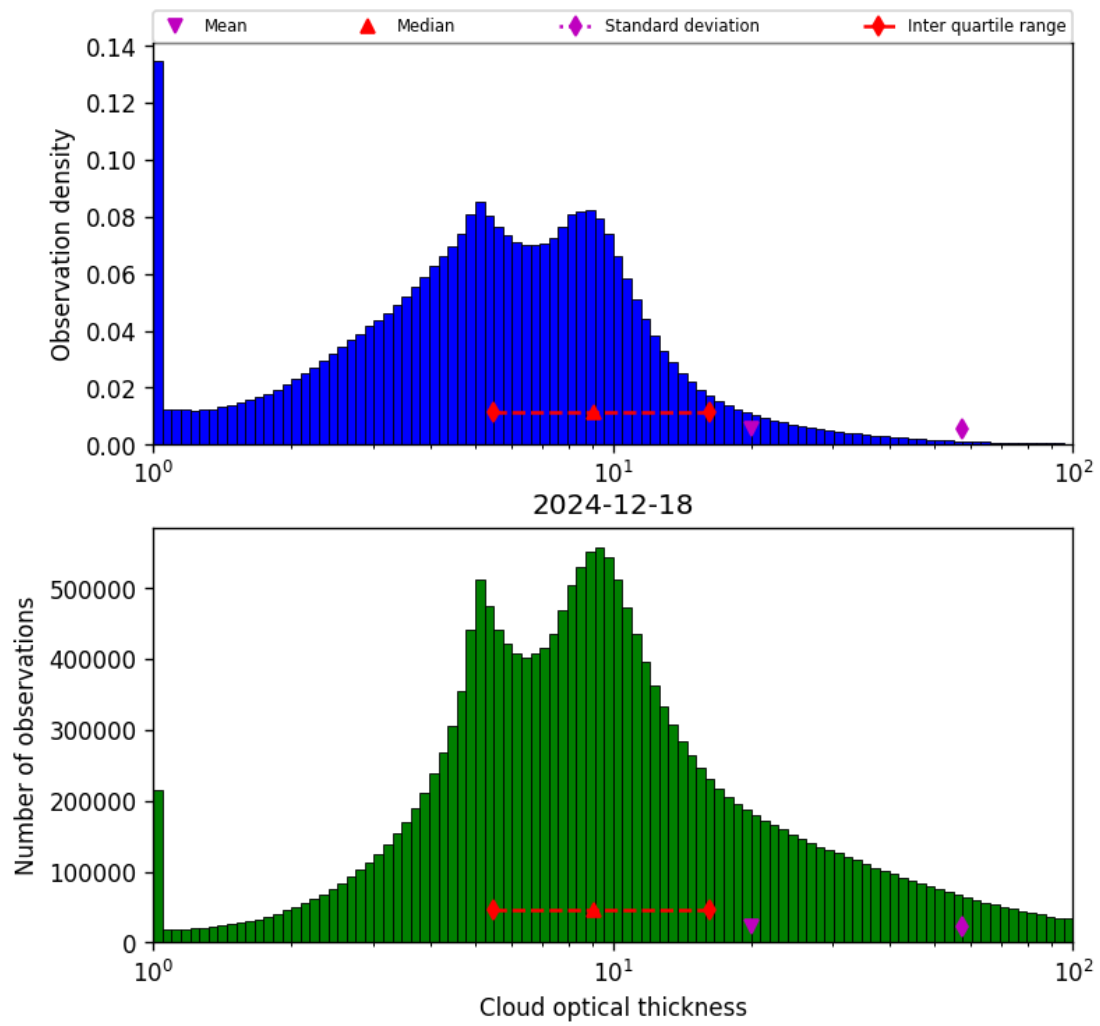


Figure 39: Histogram of “Cloud optical thickness” for 2024-12-18 to 2024-12-19

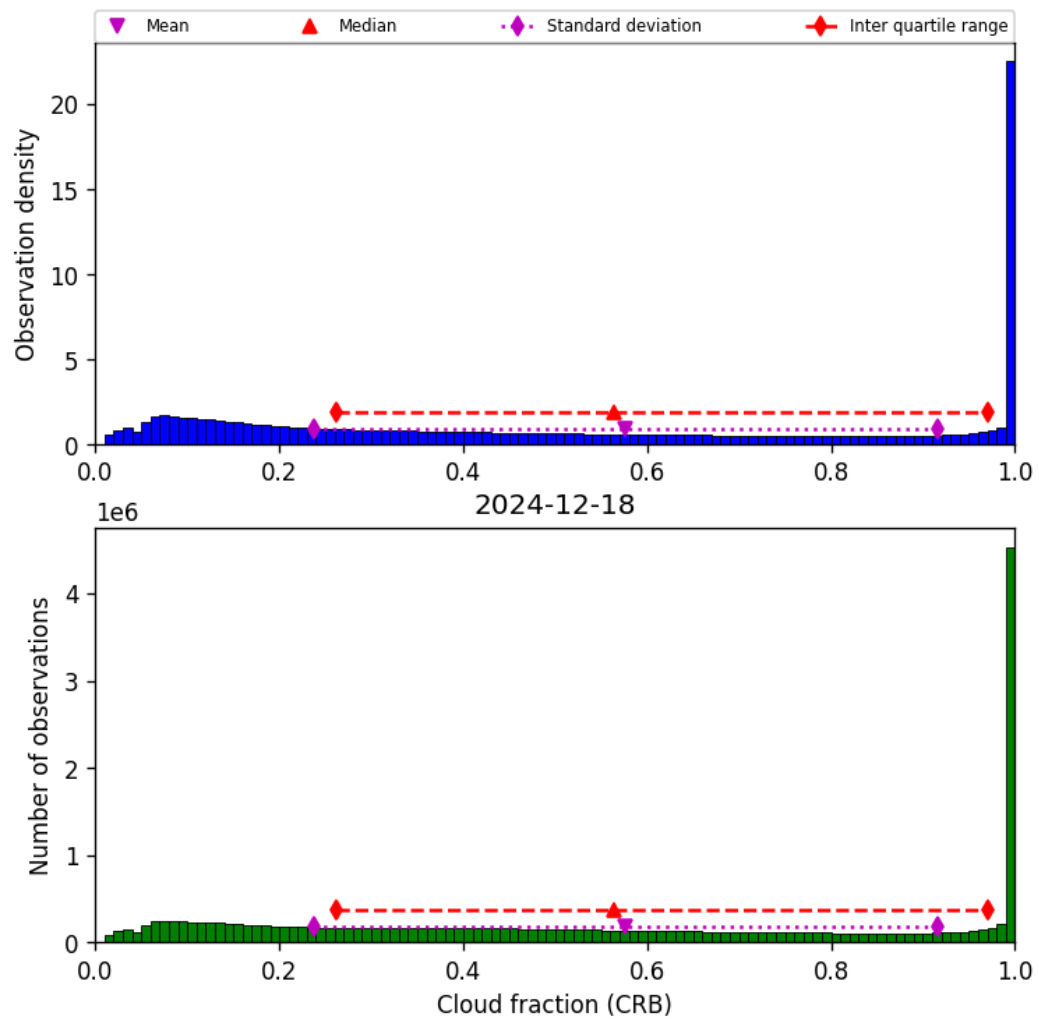


Figure 40: Histogram of “Cloud fraction (CRB)” for 2024-12-18 to 2024-12-19

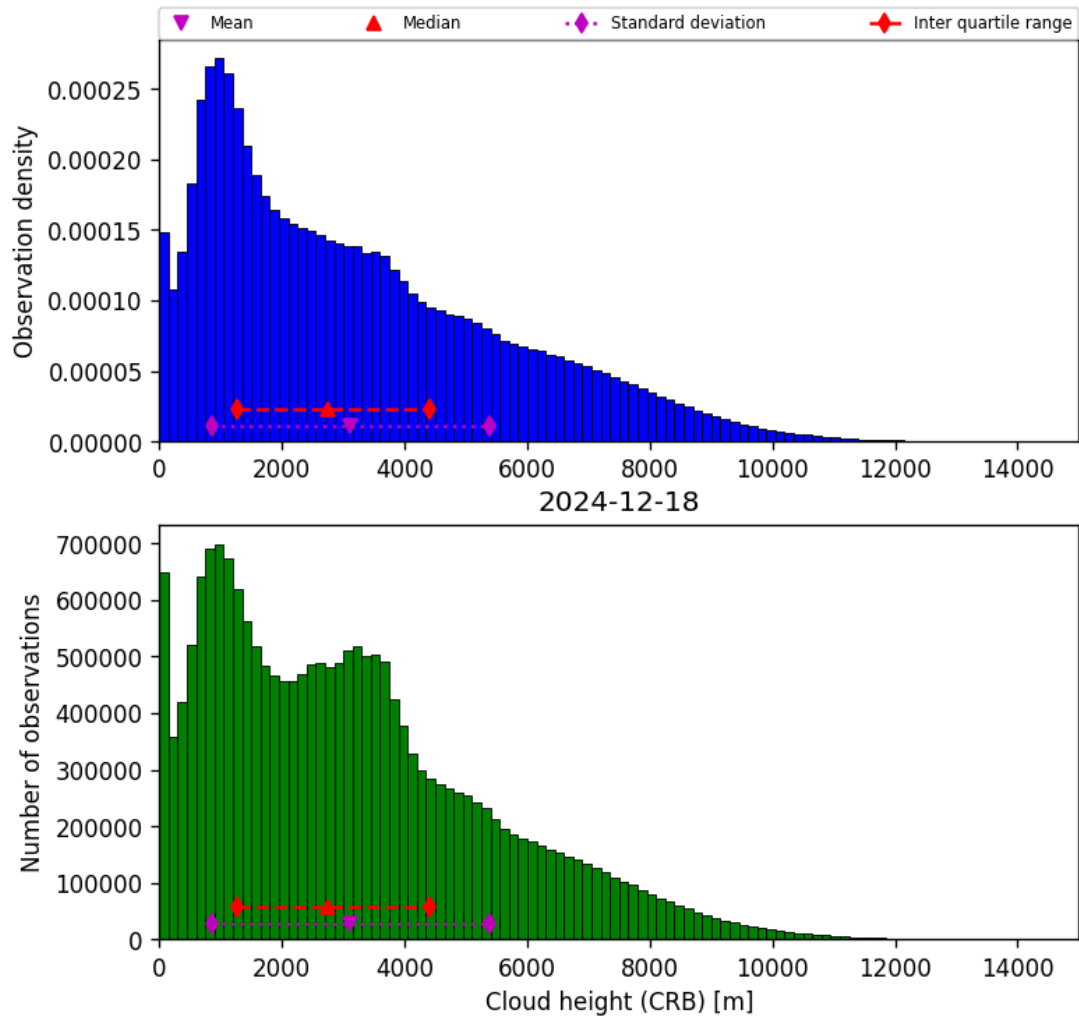


Figure 41: Histogram of “Cloud height (CRB)” for 2024-12-18 to 2024-12-19

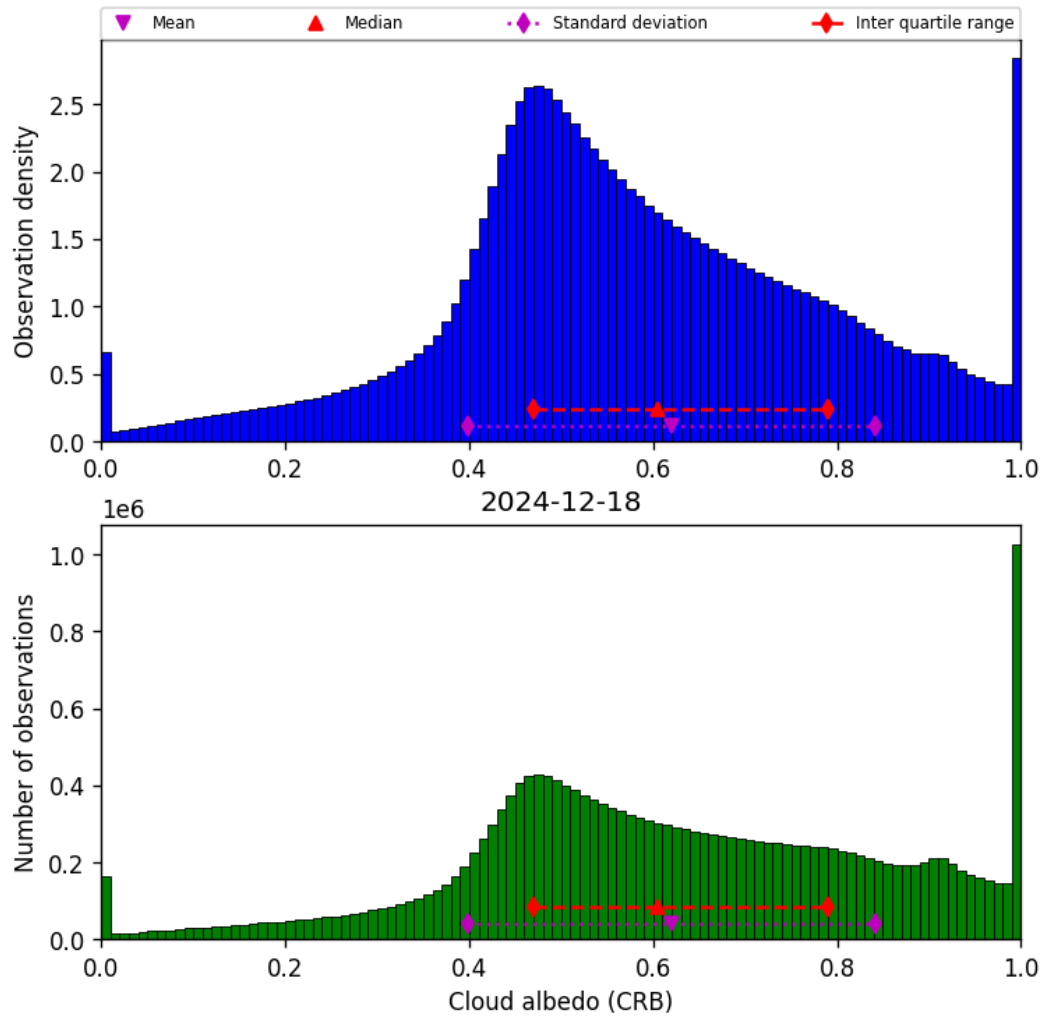


Figure 42: Histogram of “Cloud albedo (CRB)” for 2024-12-18 to 2024-12-19

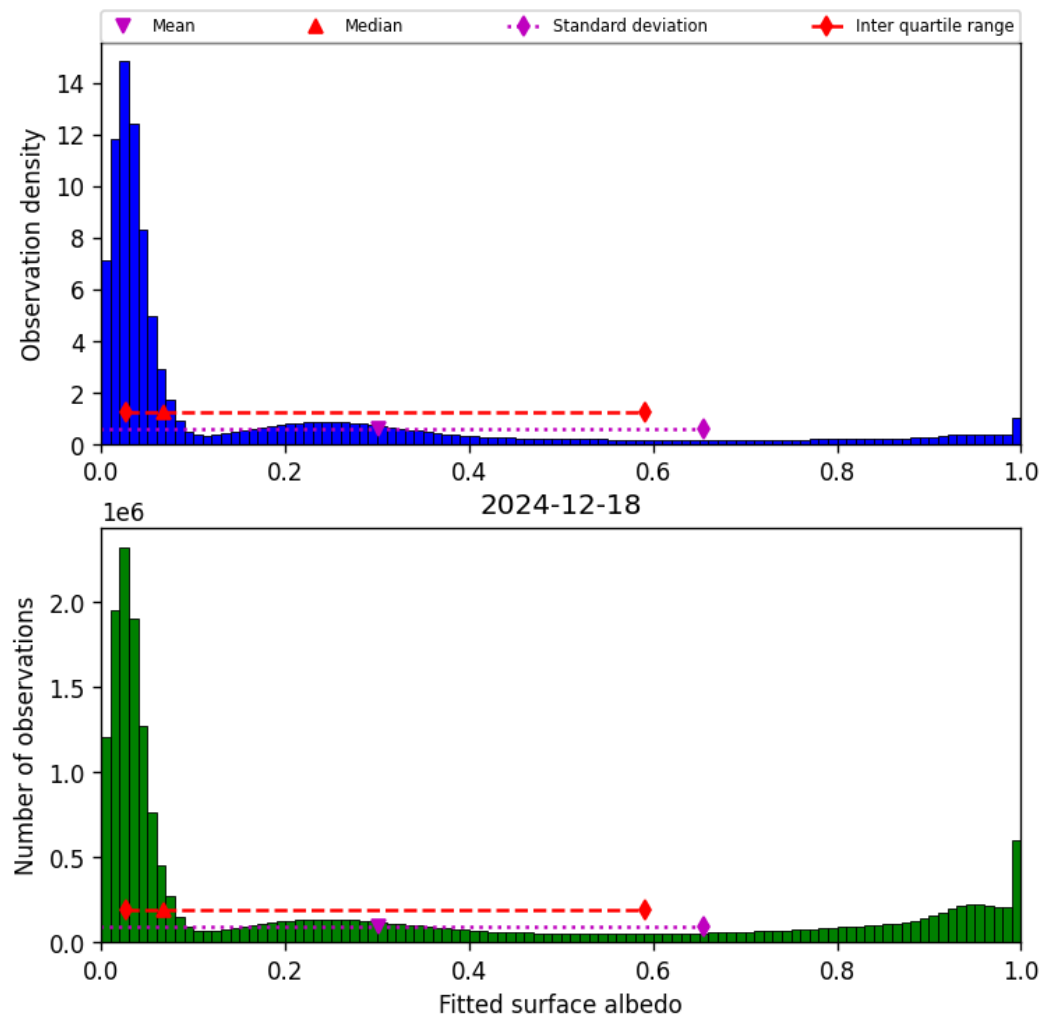


Figure 43: Histogram of “Fitted surface albedo” for 2024-12-18 to 2024-12-19

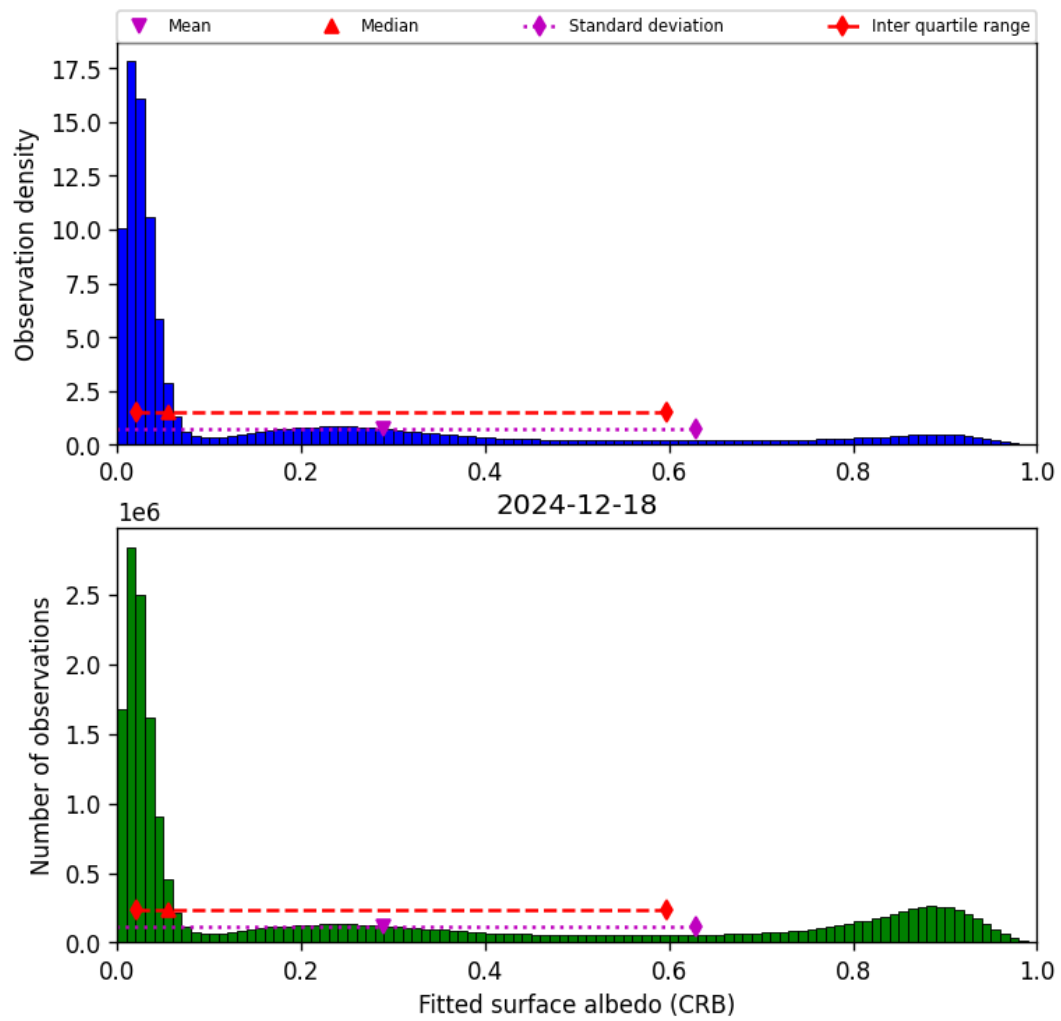


Figure 44: Histogram of “Fitted surface albedo (CRB)” for 2024-12-18 to 2024-12-19

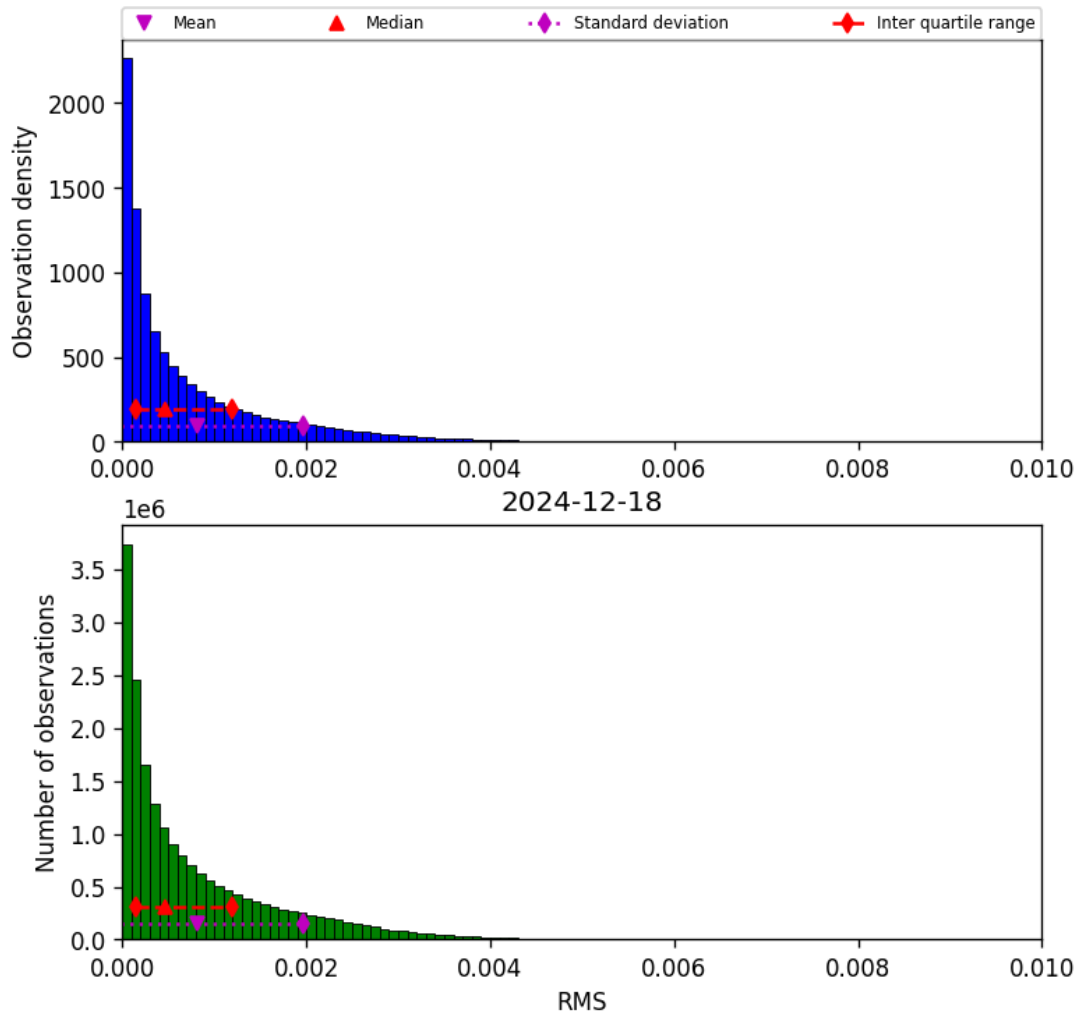


Figure 45: Histogram of “RMS” for 2024-12-18 to 2024-12-19

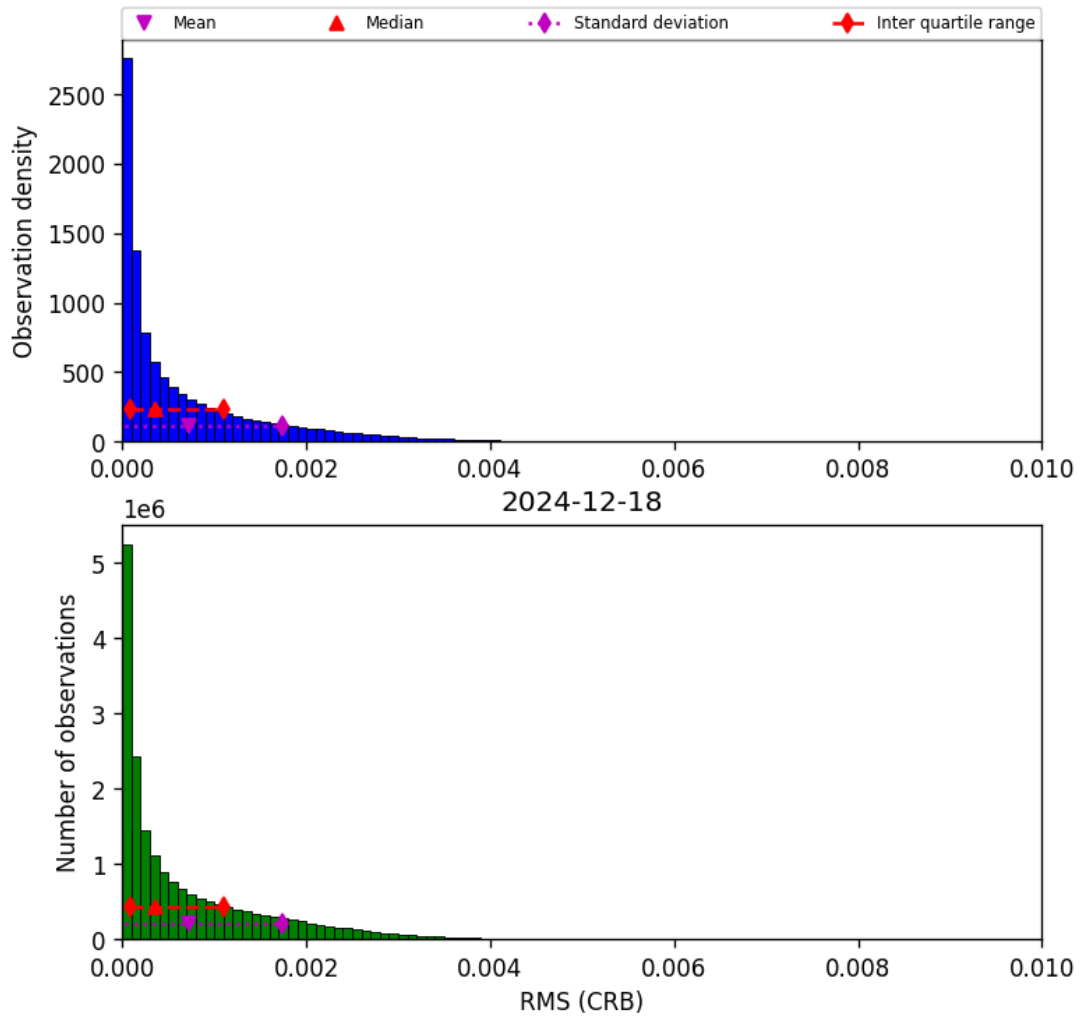


Figure 46: Histogram of “RMS (CRB)” for 2024-12-18 to 2024-12-19

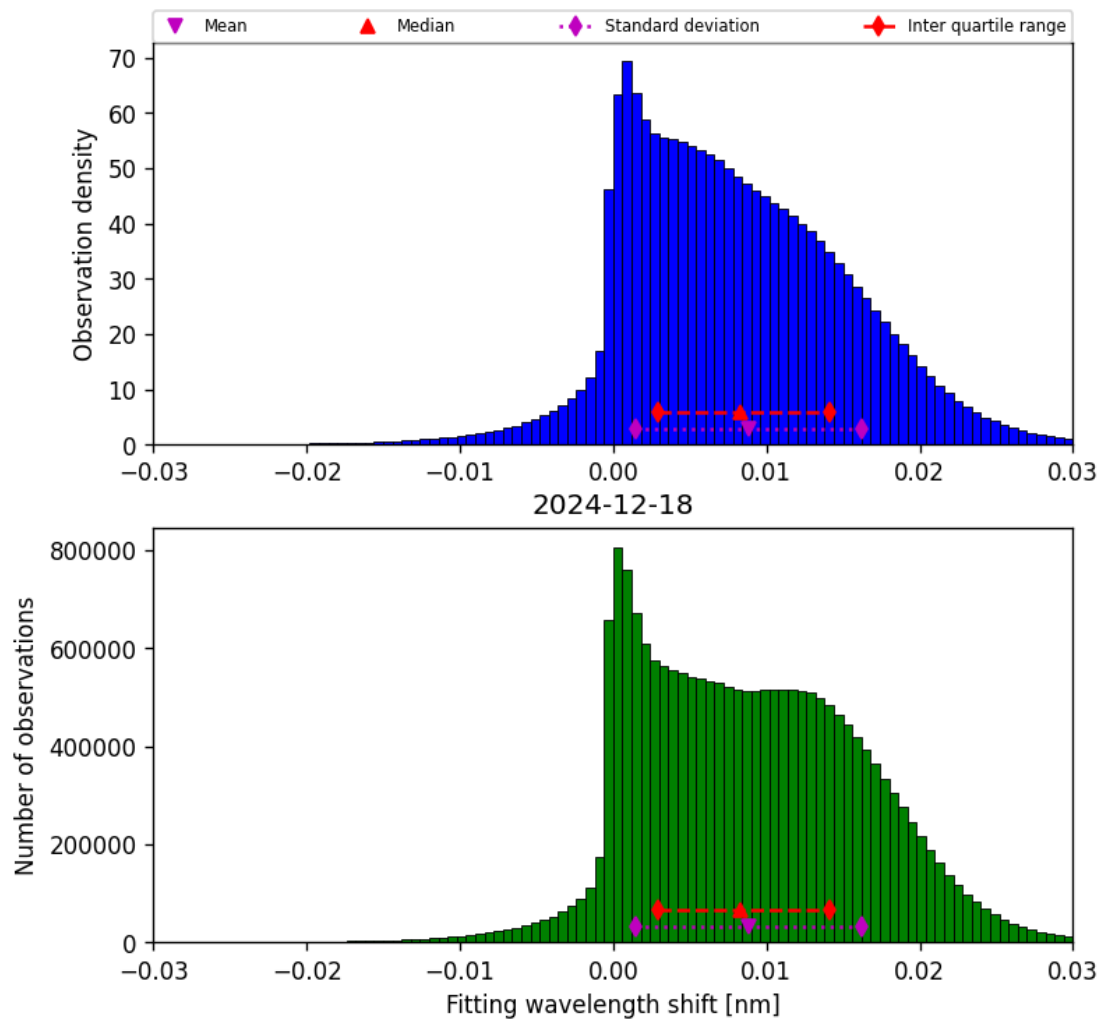


Figure 47: Histogram of “Fitting wavelength shift” for 2024-12-18 to 2024-12-19

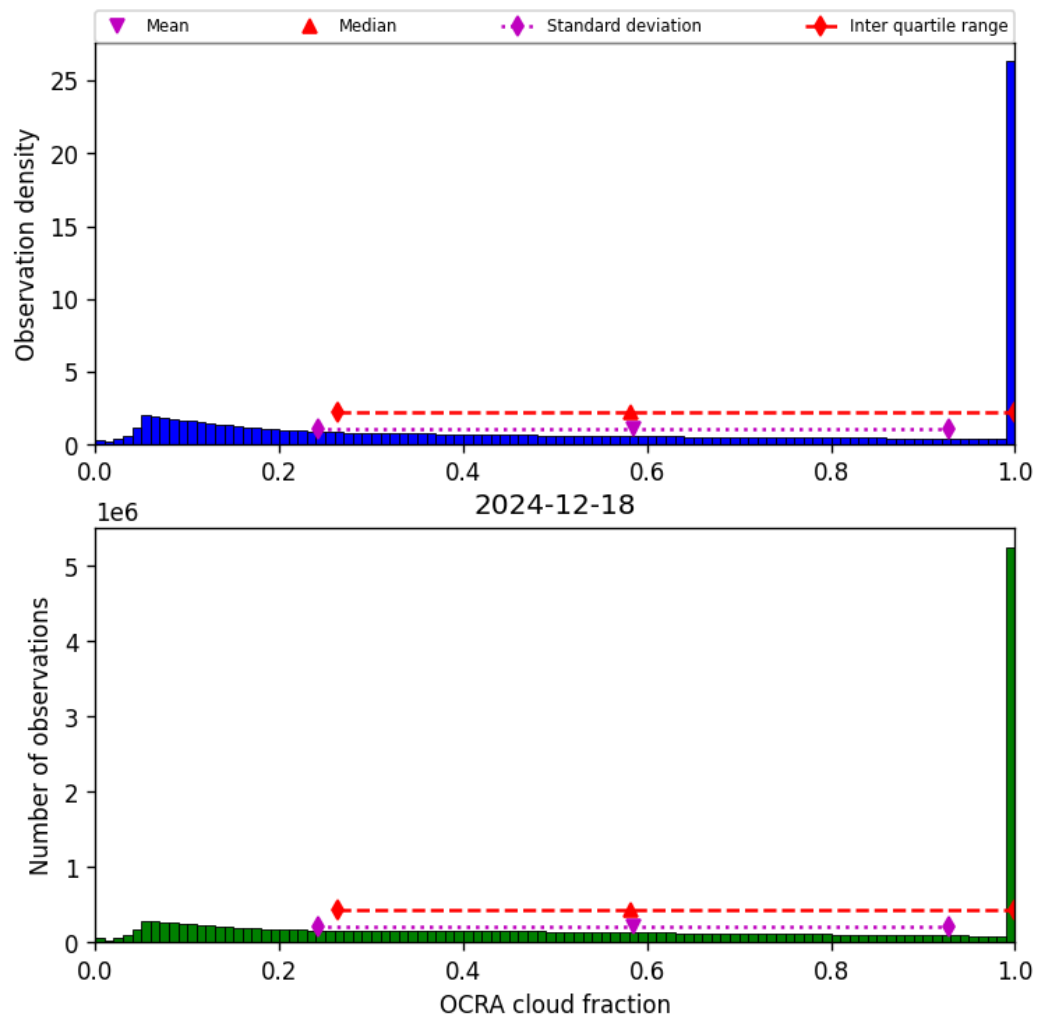


Figure 48: Histogram of “OCRA cloud fraction” for 2024-12-18 to 2024-12-19

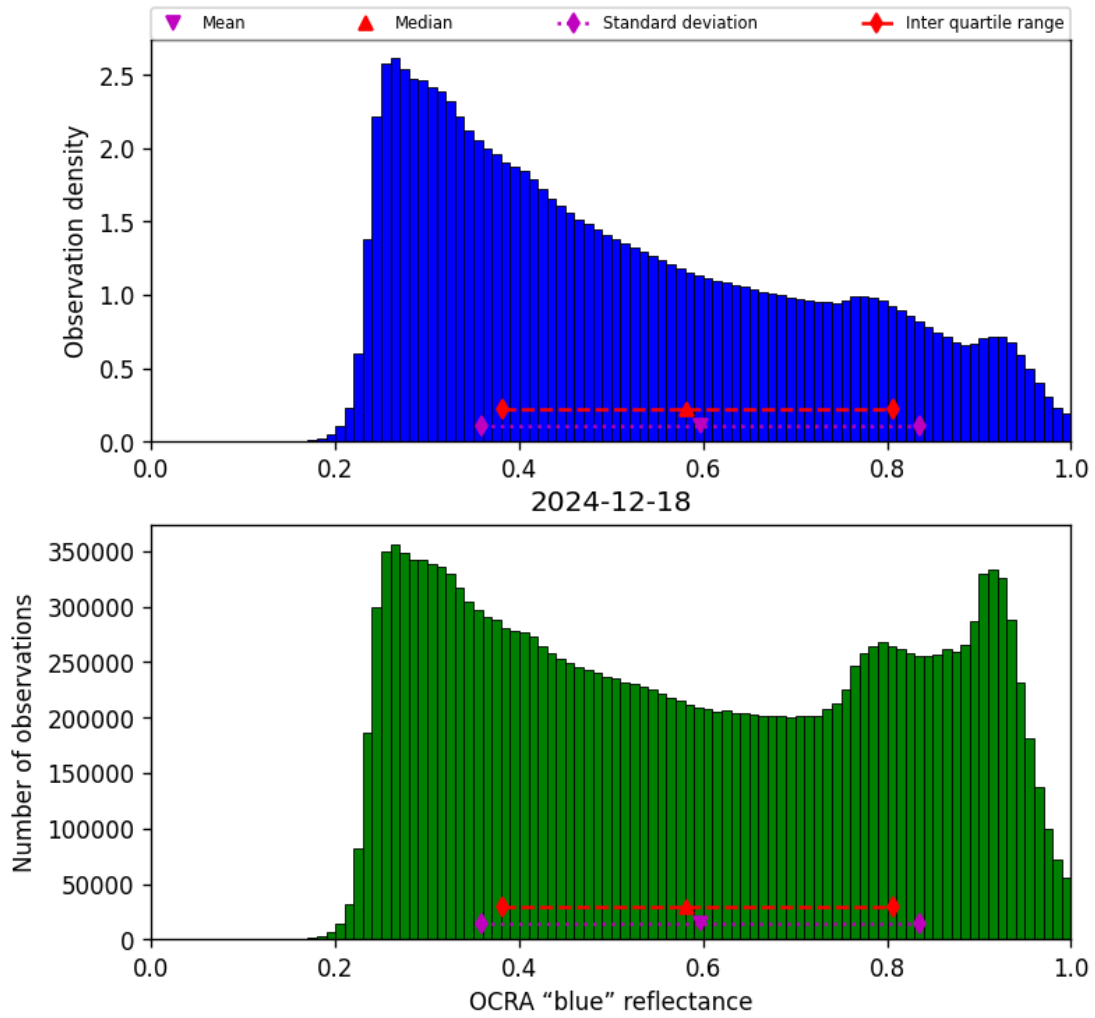


Figure 49: Histogram of "OCRA "blue" reflectance" for 2024-12-18 to 2024-12-19

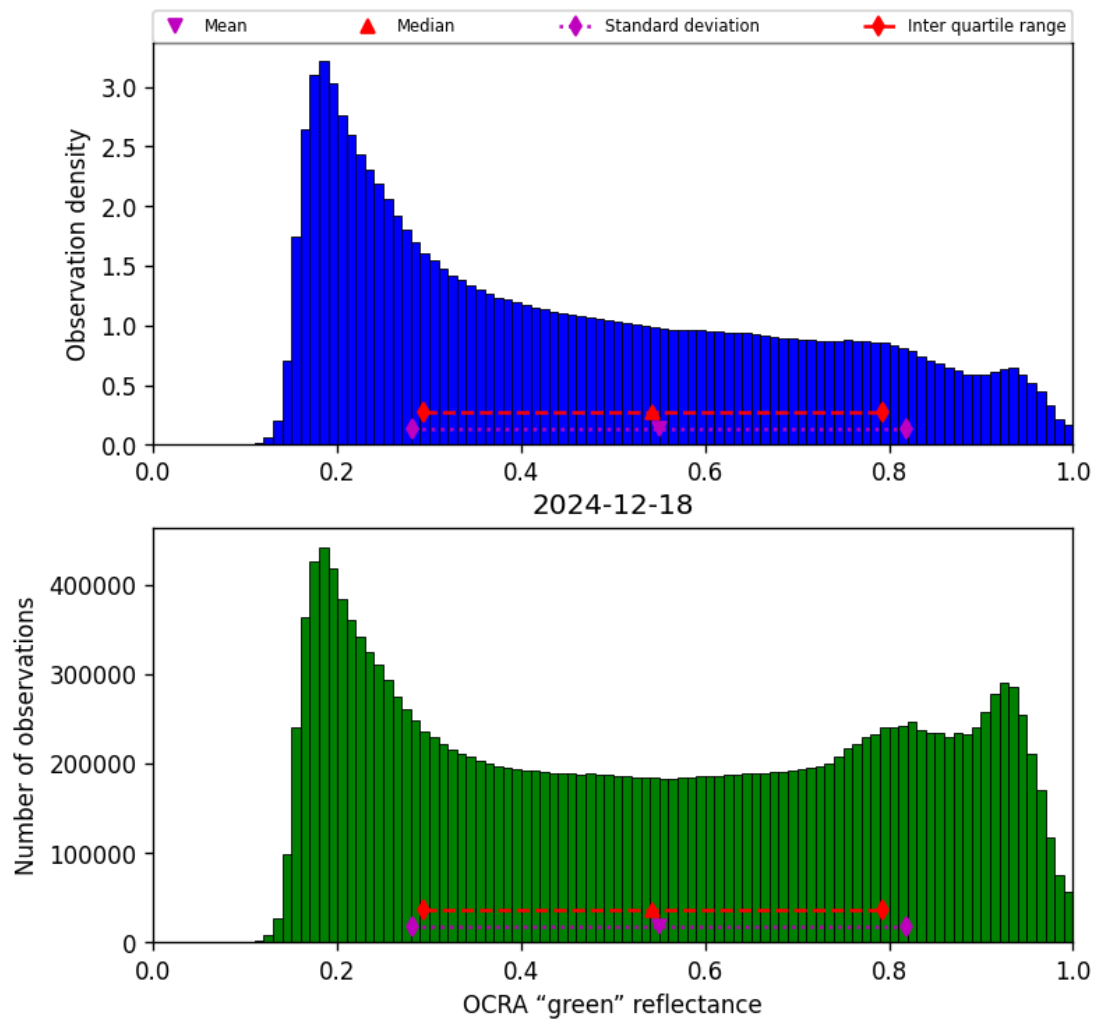


Figure 50: Histogram of “OCRA “green” reflectance” for 2024-12-18 to 2024-12-19

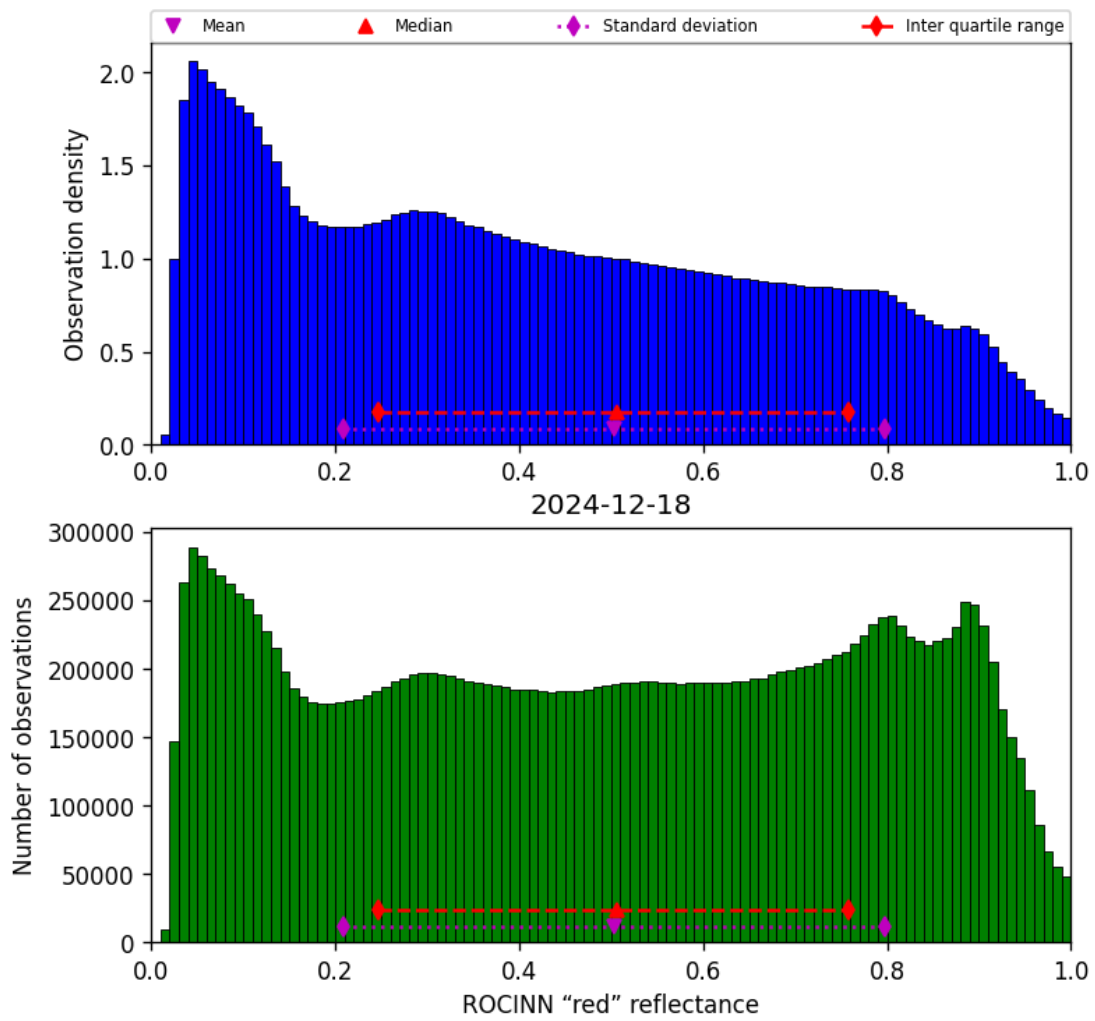


Figure 51: Histogram of “ROCINN “red” reflectance” for 2024-12-18 to 2024-12-19

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.

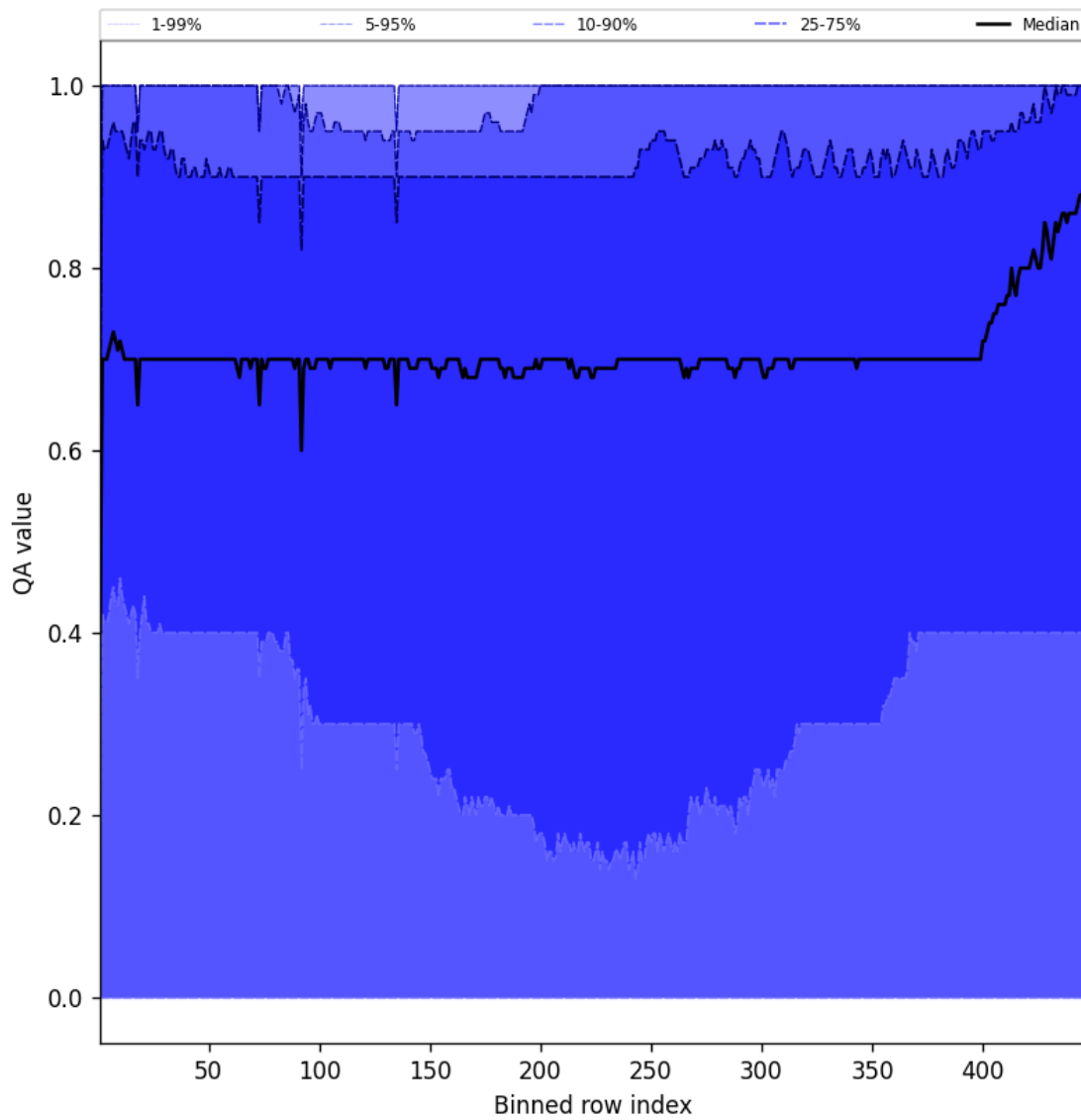


Figure 52: Along track statistics of “QA value” for 2024-12-18 to 2024-12-19

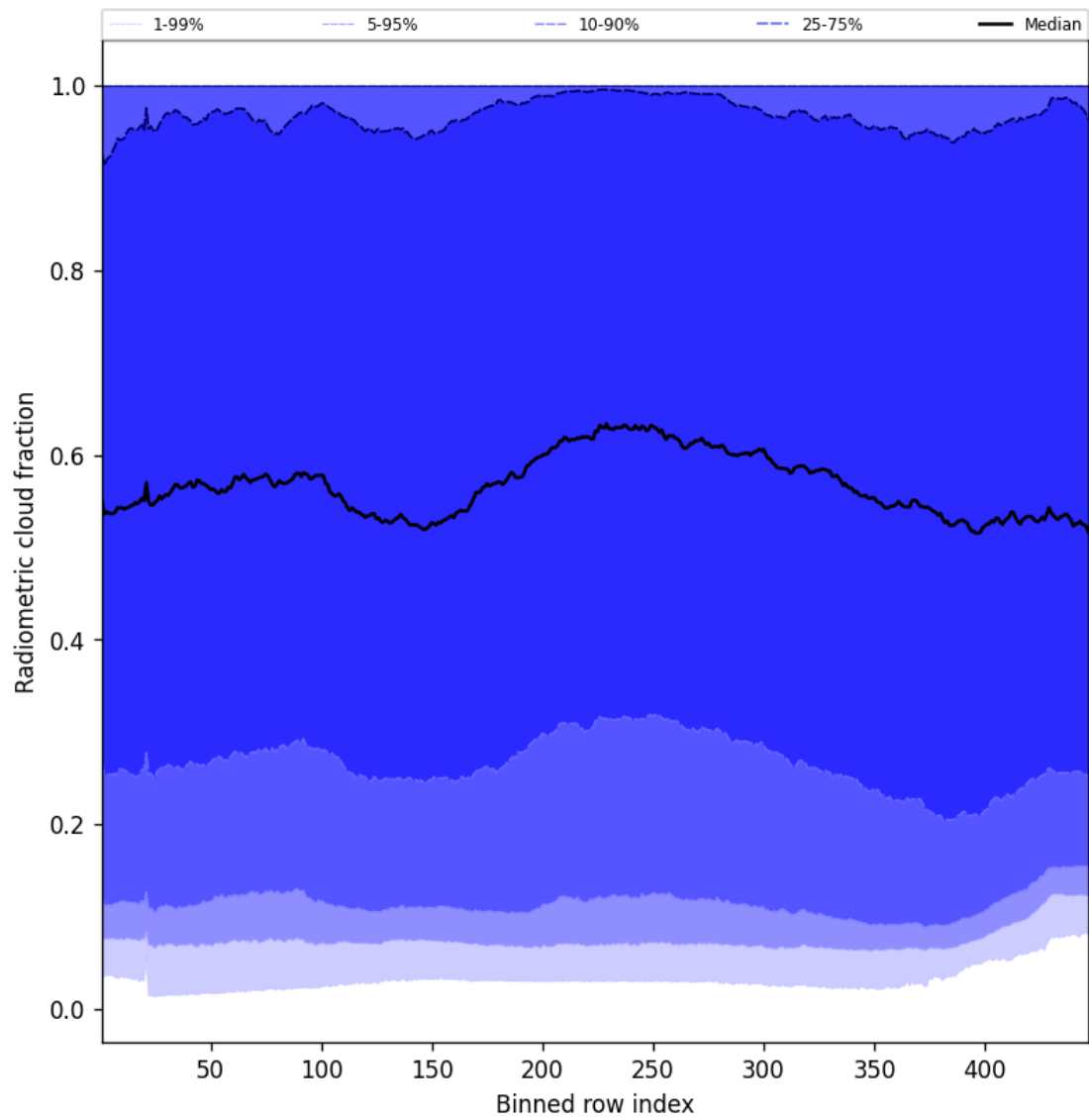


Figure 53: Along track statistics of “Radiometric cloud fraction” for 2024-12-18 to 2024-12-19

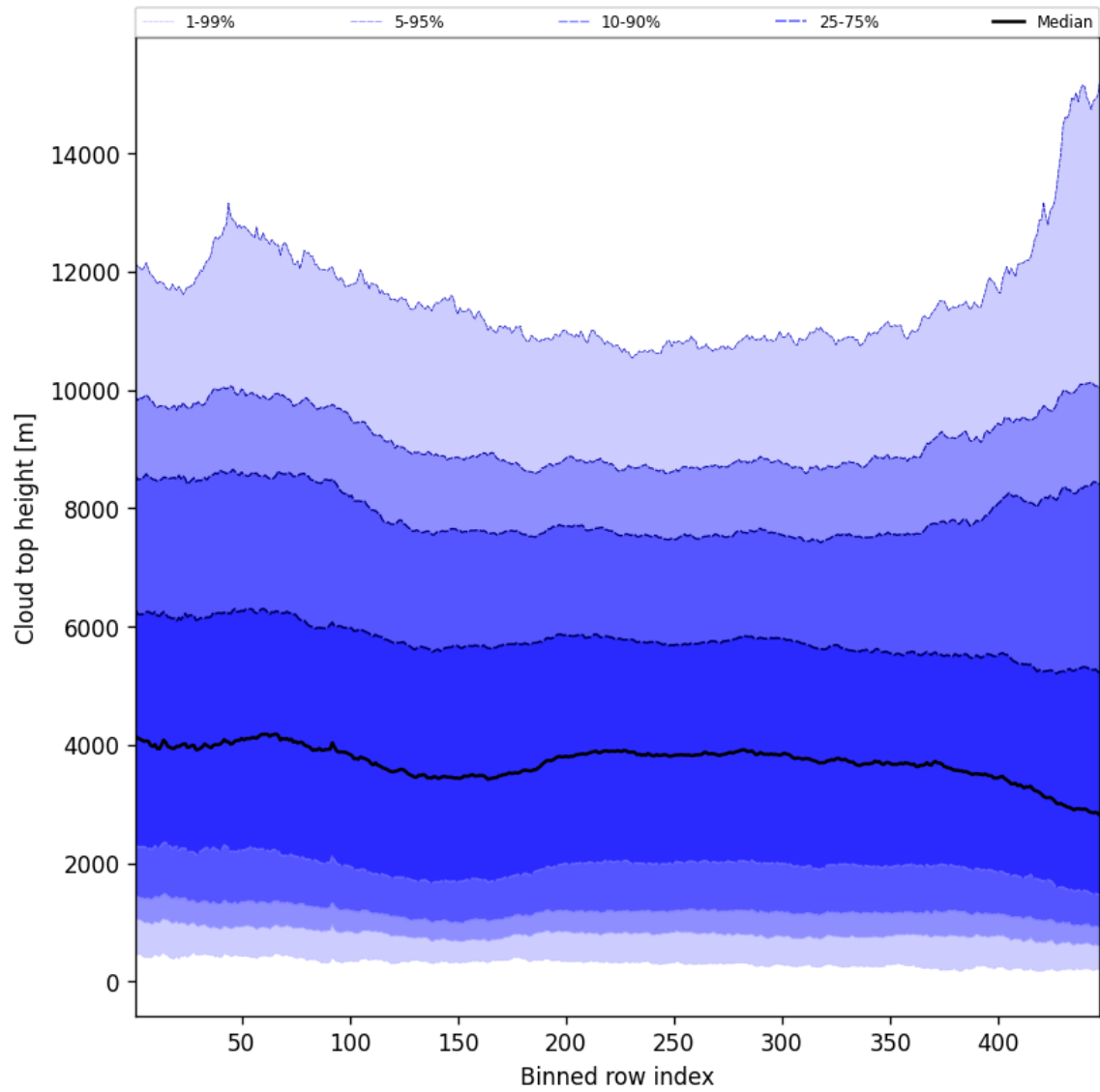


Figure 54: Along track statistics of “Cloud top height” for 2024-12-18 to 2024-12-19

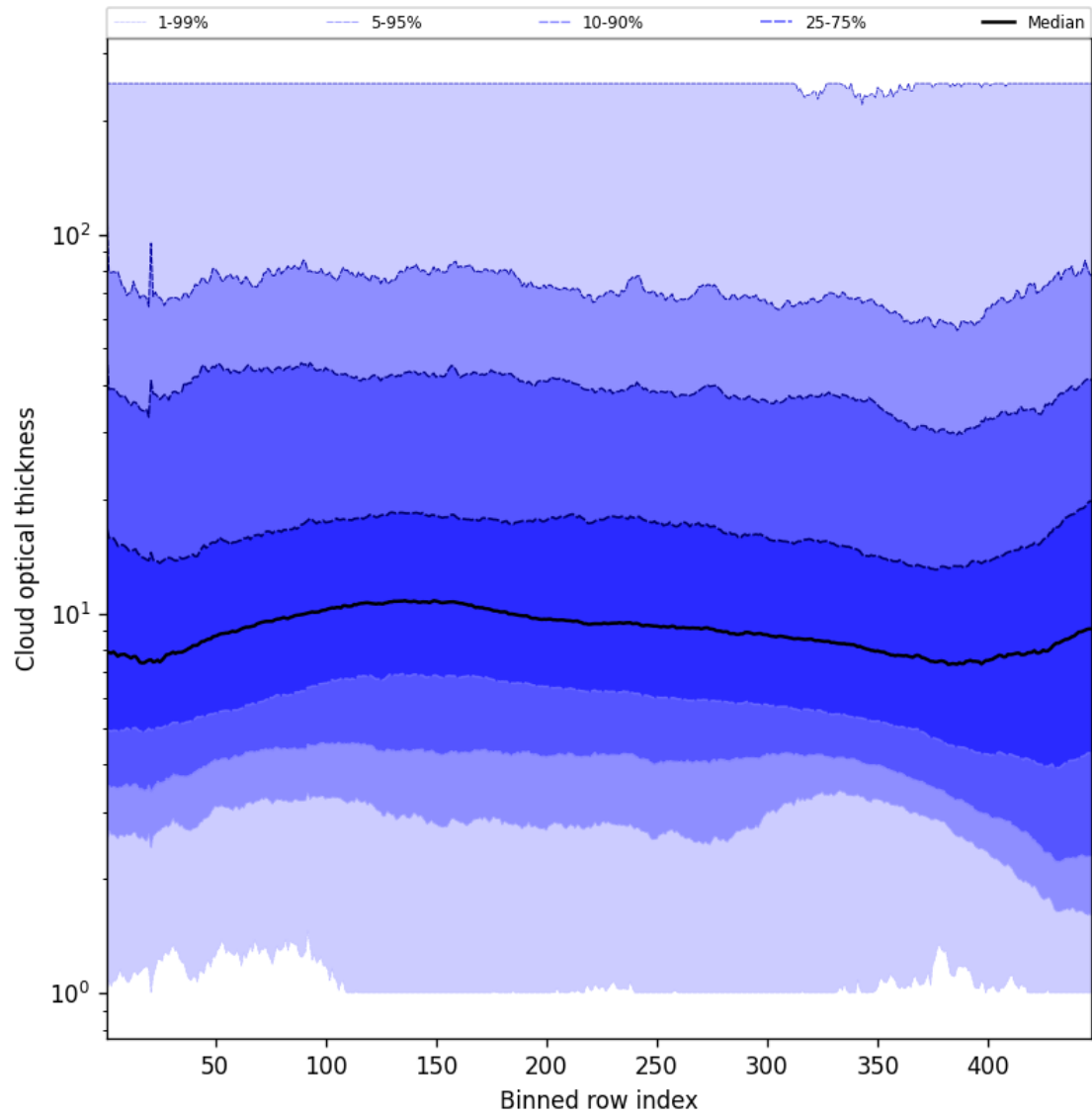


Figure 55: Along track statistics of “Cloud optical thickness” for 2024-12-18 to 2024-12-19

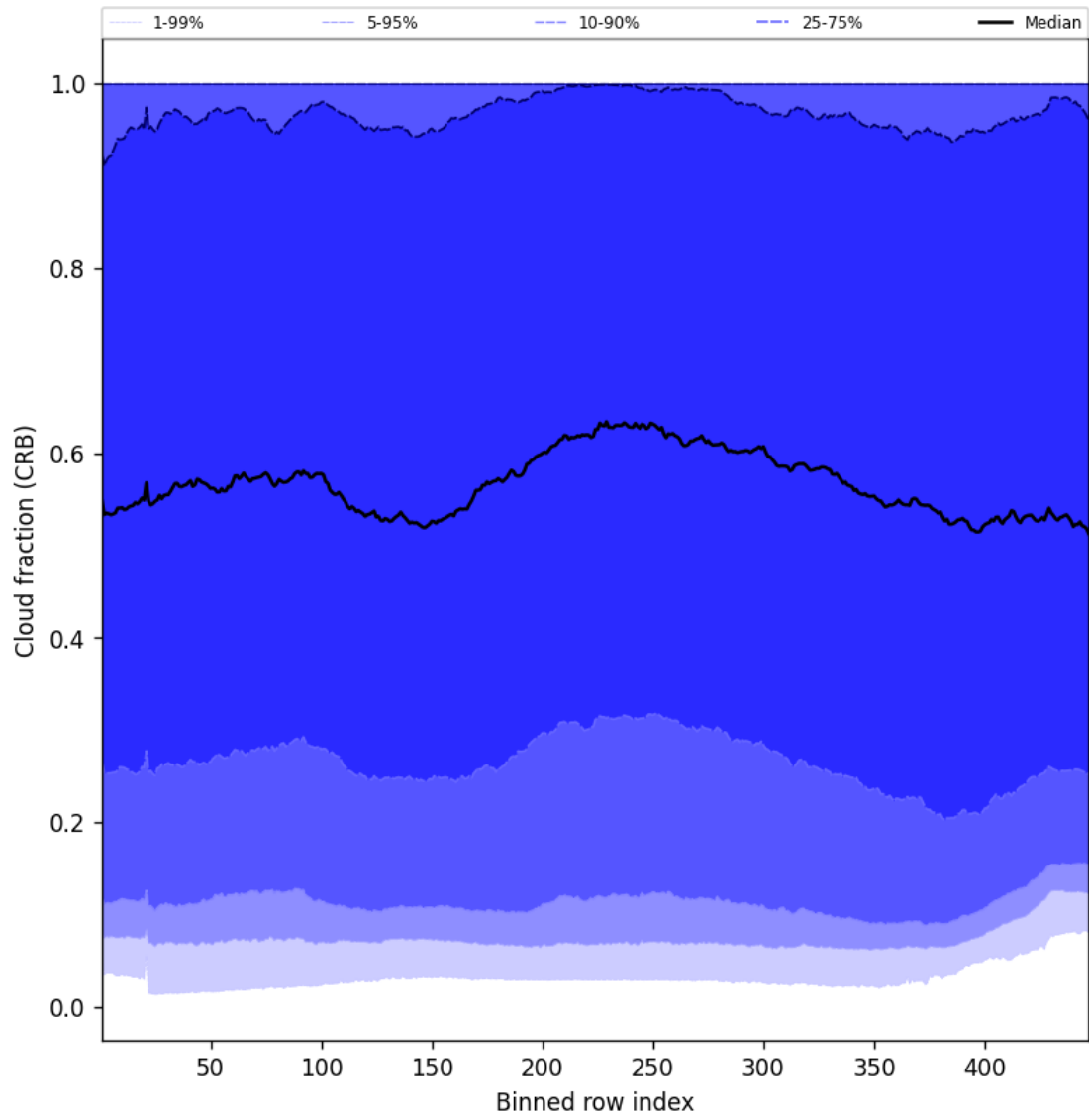


Figure 56: Along track statistics of “Cloud fraction (CRB)” for 2024-12-18 to 2024-12-19

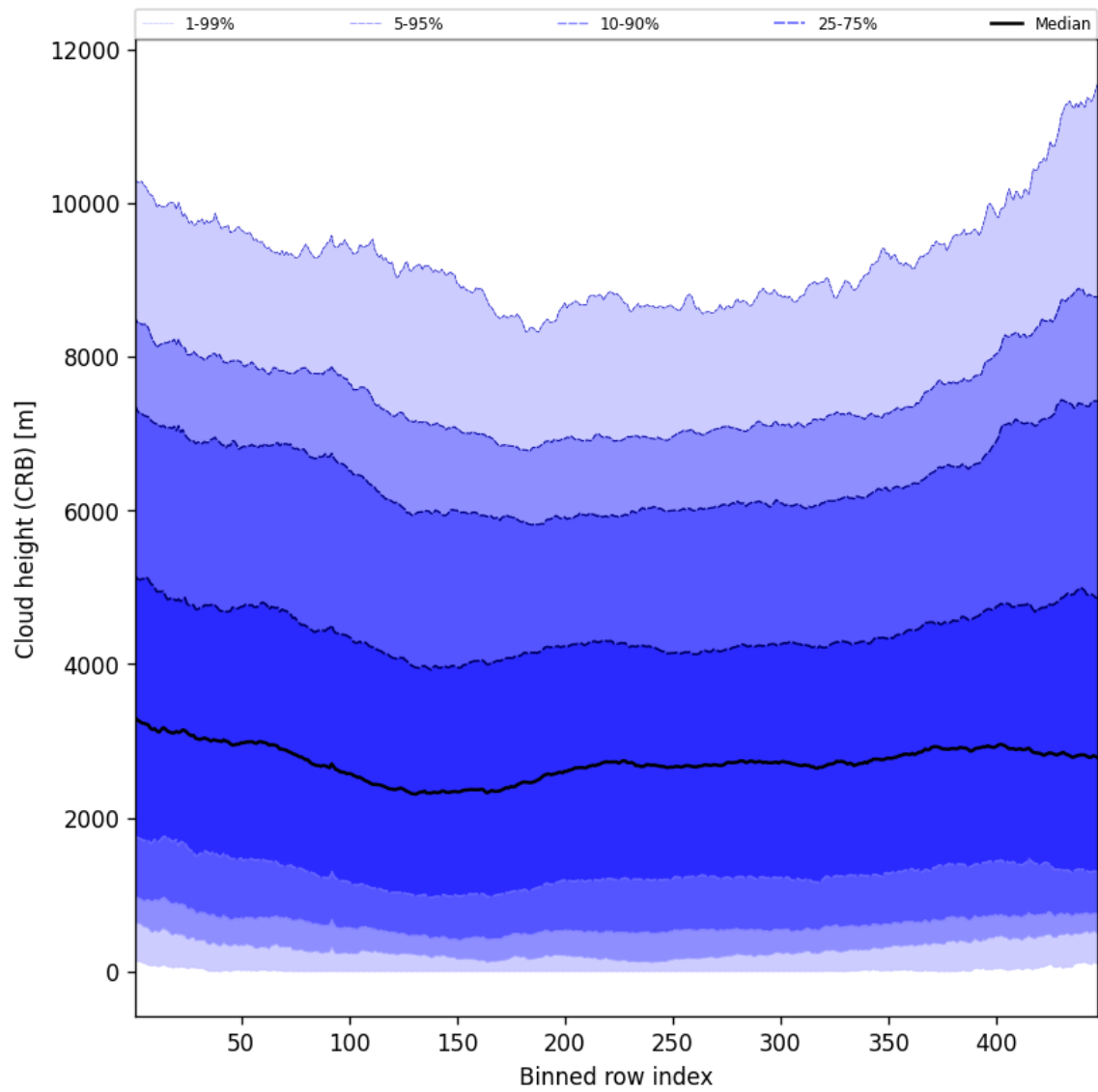


Figure 57: Along track statistics of “Cloud height (CRB)” for 2024-12-18 to 2024-12-19

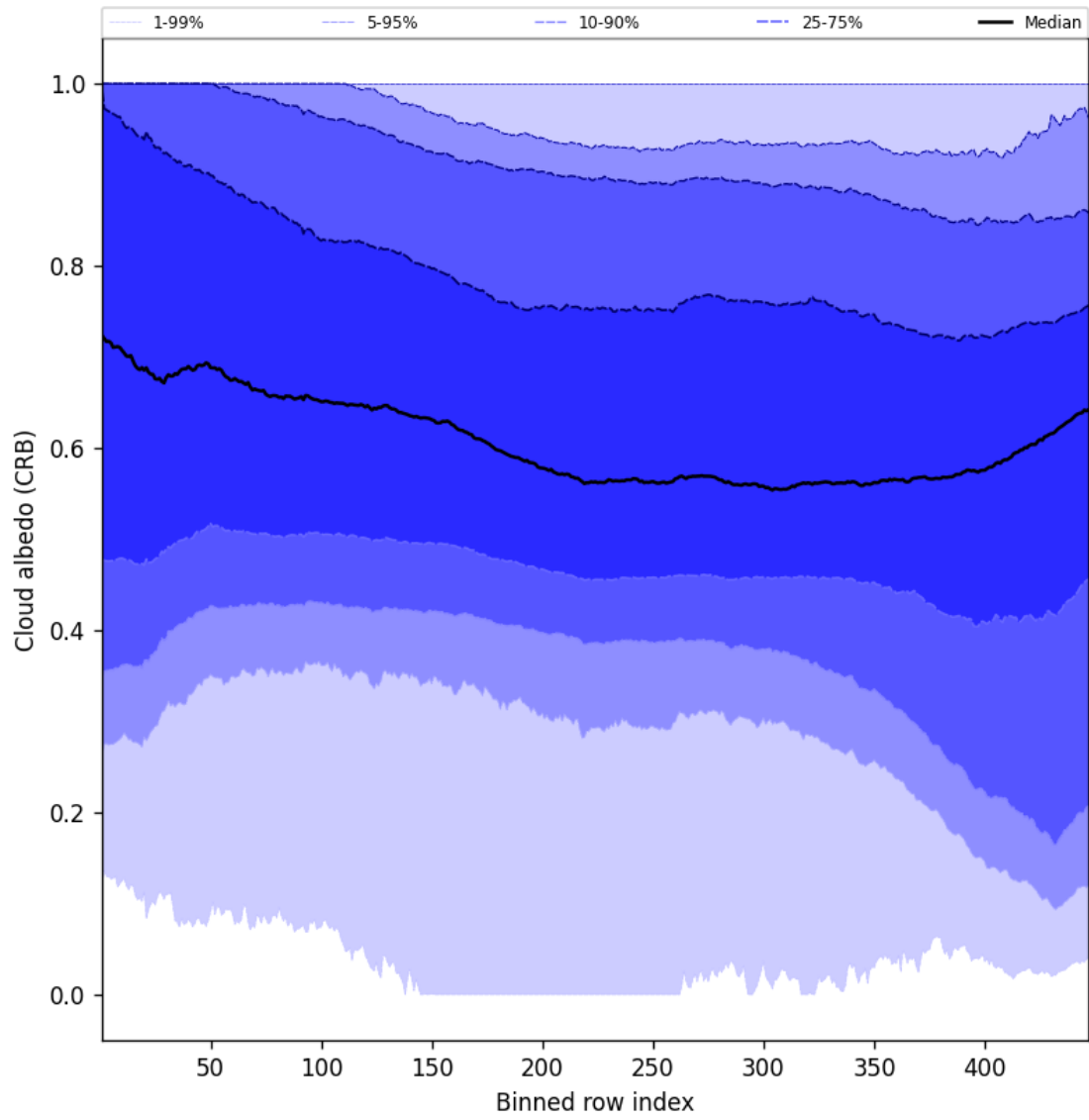


Figure 58: Along track statistics of “Cloud albedo (CRB)” for 2024-12-18 to 2024-12-19

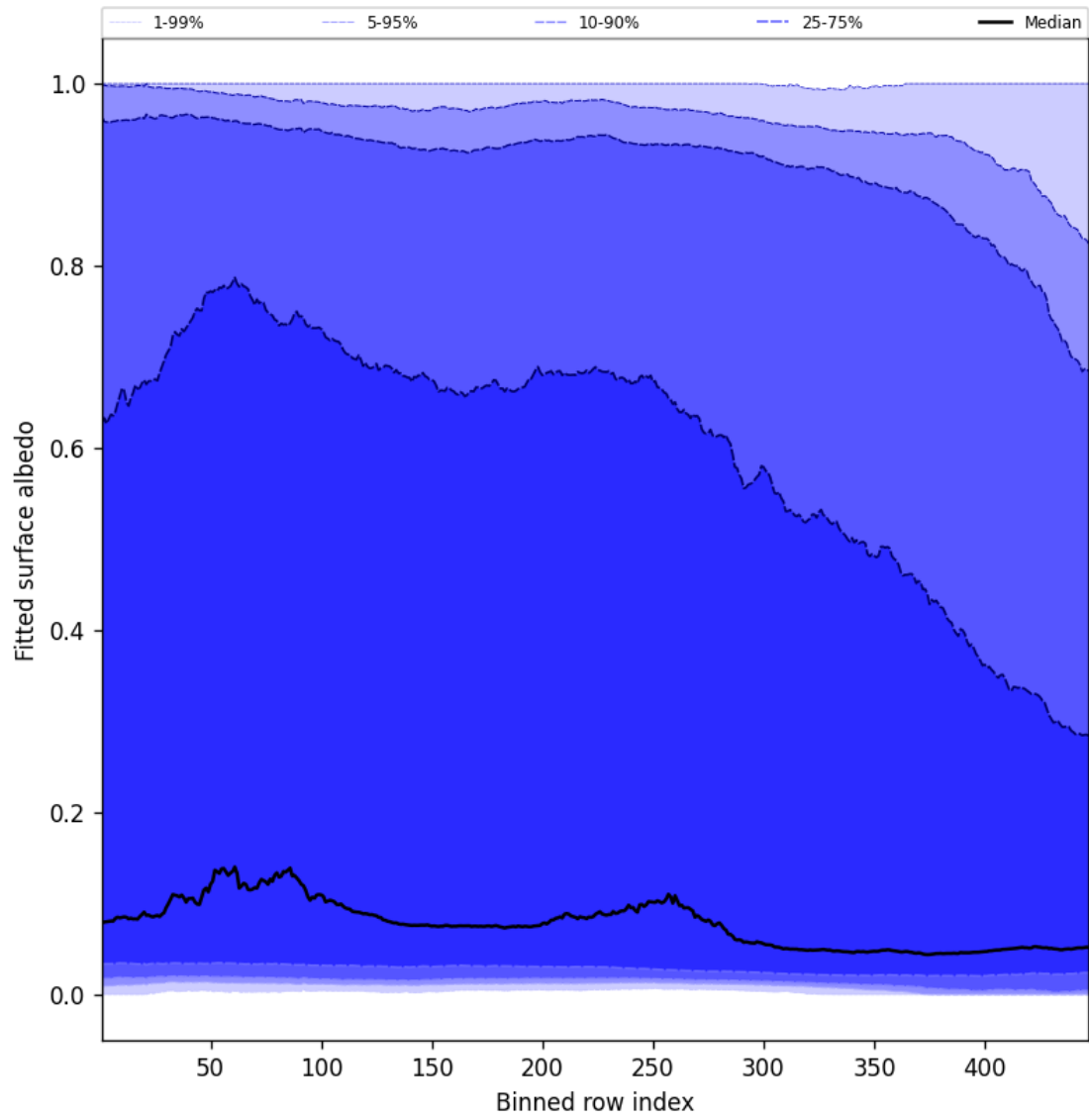


Figure 59: Along track statistics of “Fitted surface albedo” for 2024-12-18 to 2024-12-19

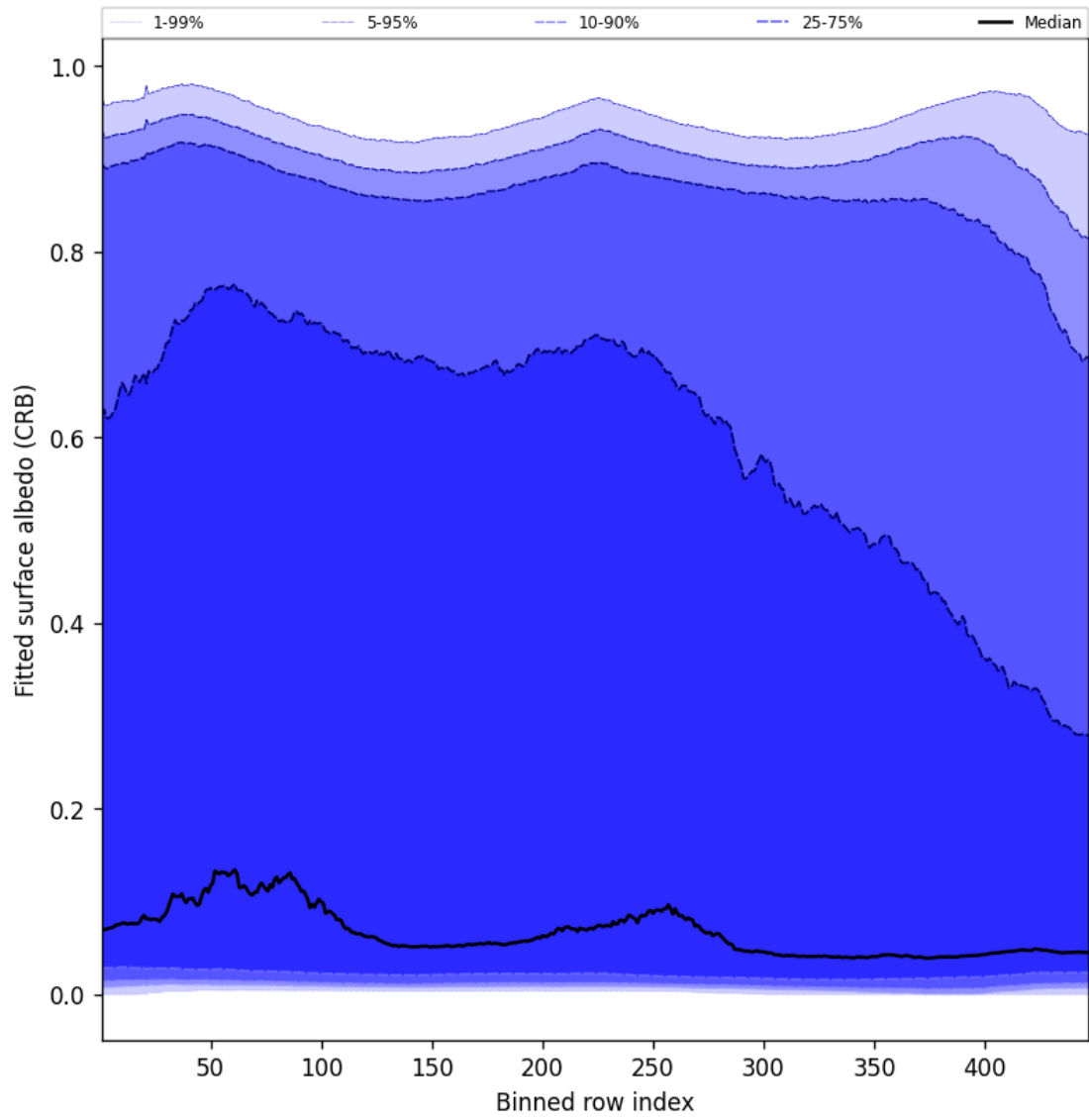


Figure 60: Along track statistics of “Fitted surface albedo (CRB)” for 2024-12-18 to 2024-12-19

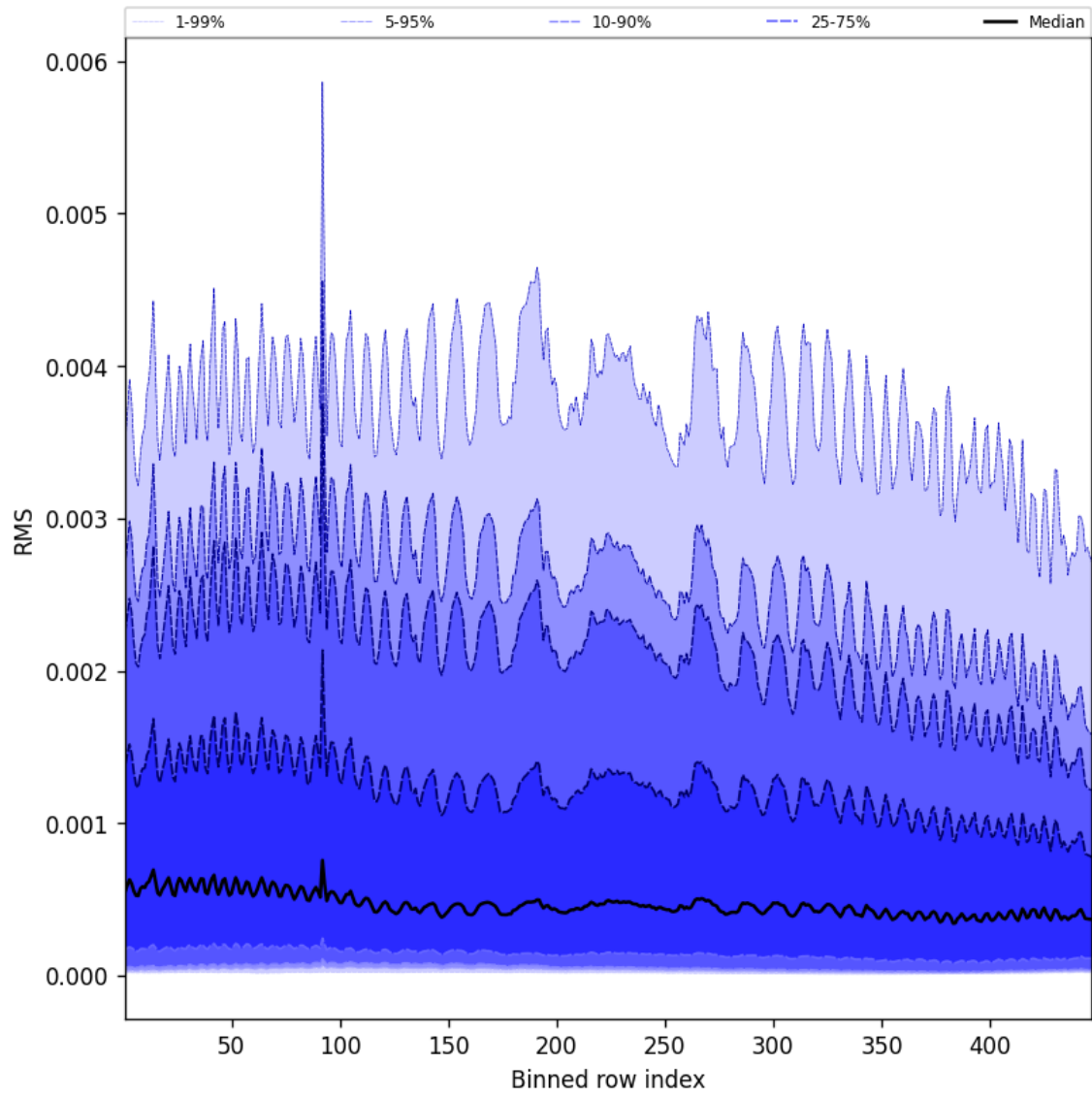


Figure 61: Along track statistics of “RMS” for 2024-12-18 to 2024-12-19

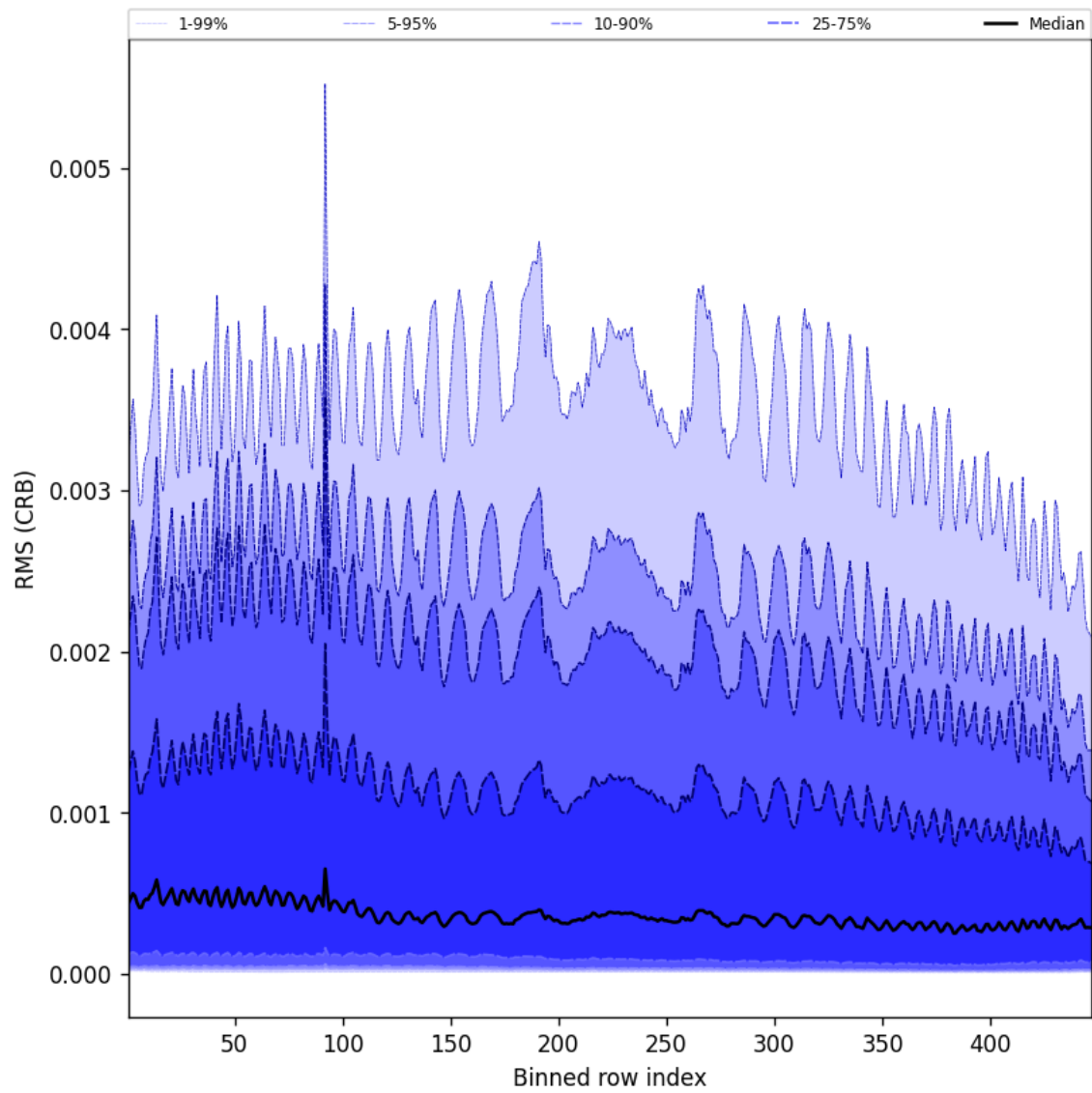


Figure 62: Along track statistics of “RMS (CRB)” for 2024-12-18 to 2024-12-19

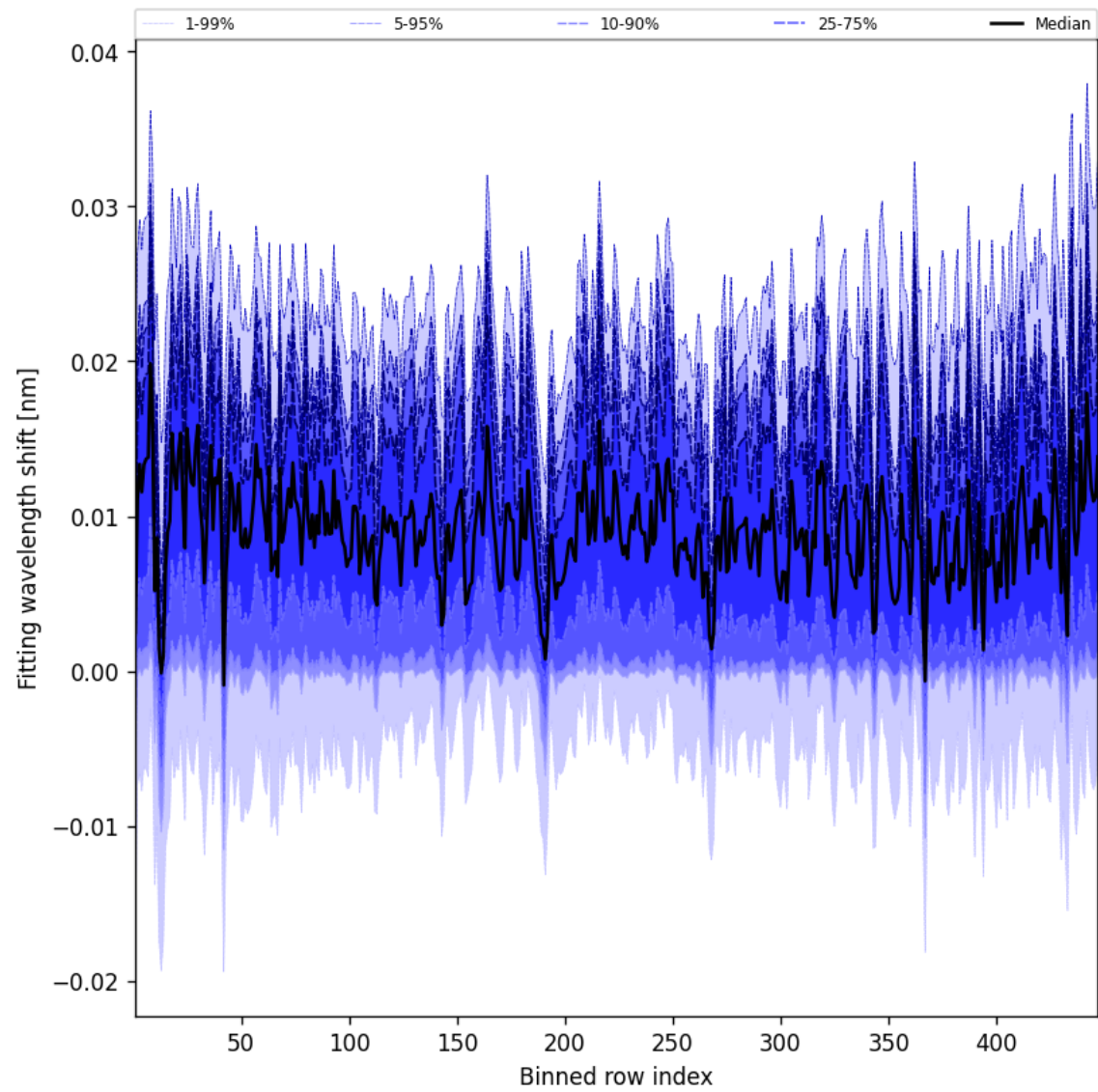


Figure 63: Along track statistics of “Fitting wavelength shift” for 2024-12-18 to 2024-12-19

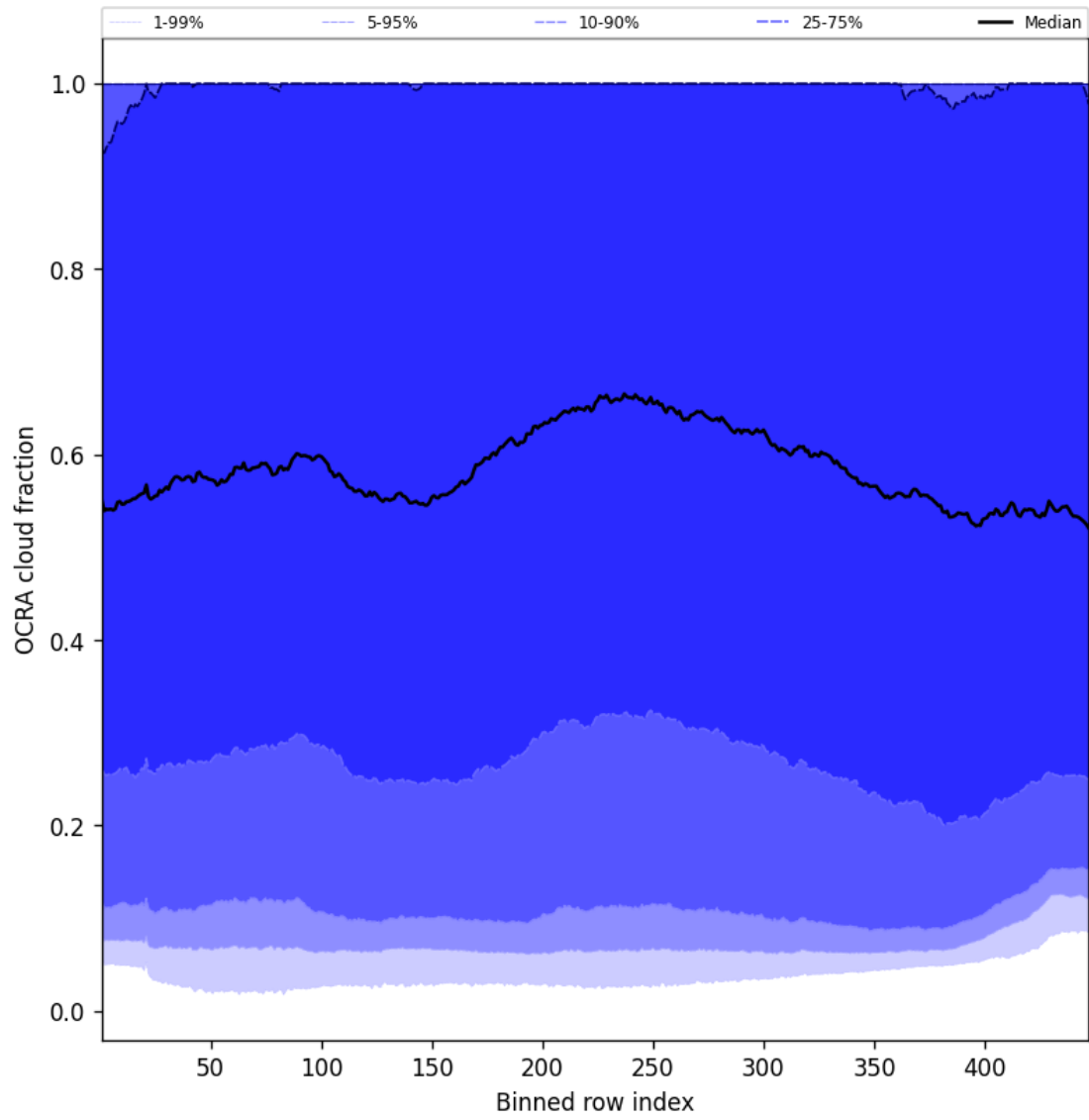


Figure 64: Along track statistics of “OCRA cloud fraction” for 2024-12-18 to 2024-12-19

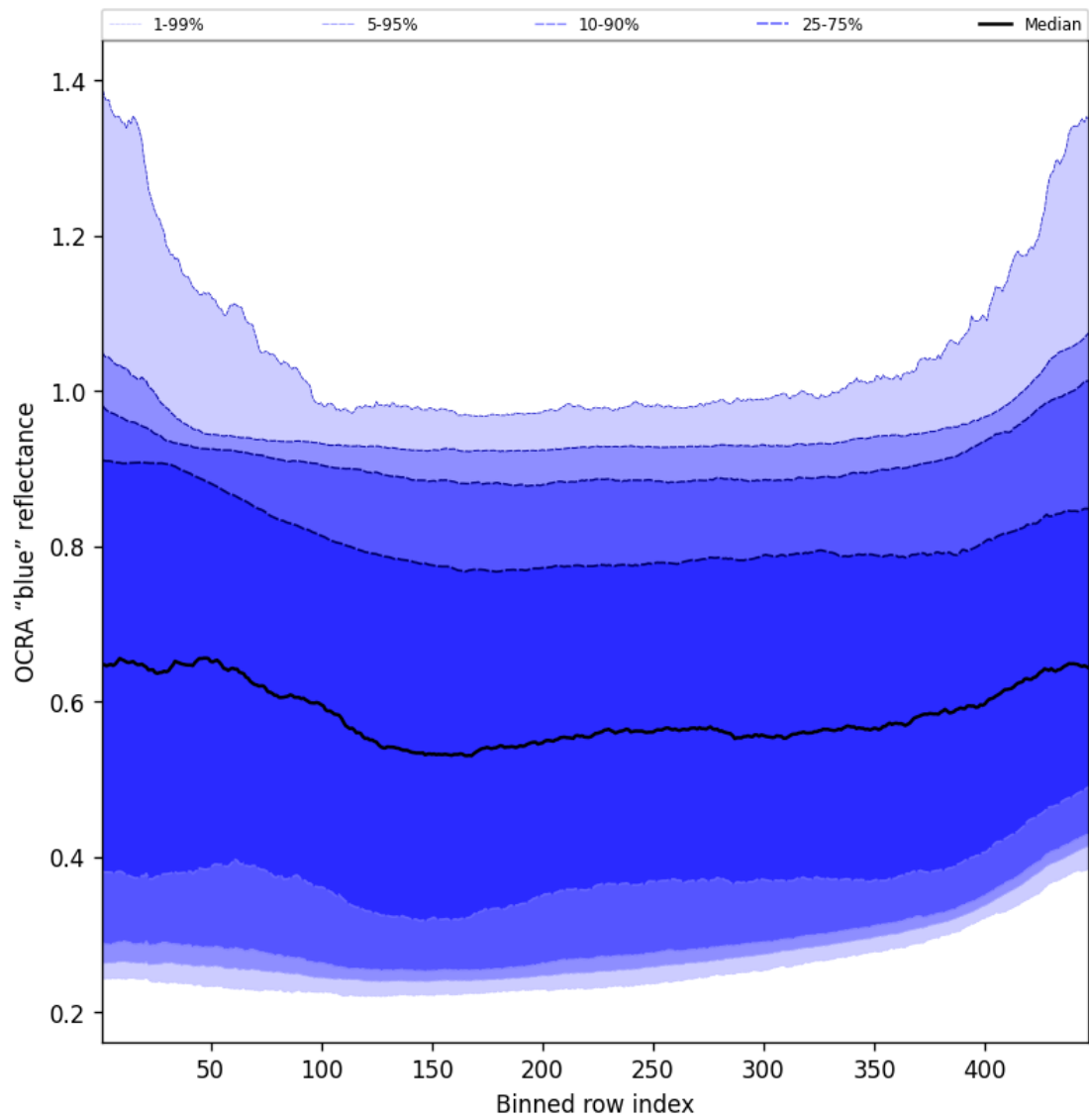


Figure 65: Along track statistics of “OCRA “blue” reflectance” for 2024-12-18 to 2024-12-19

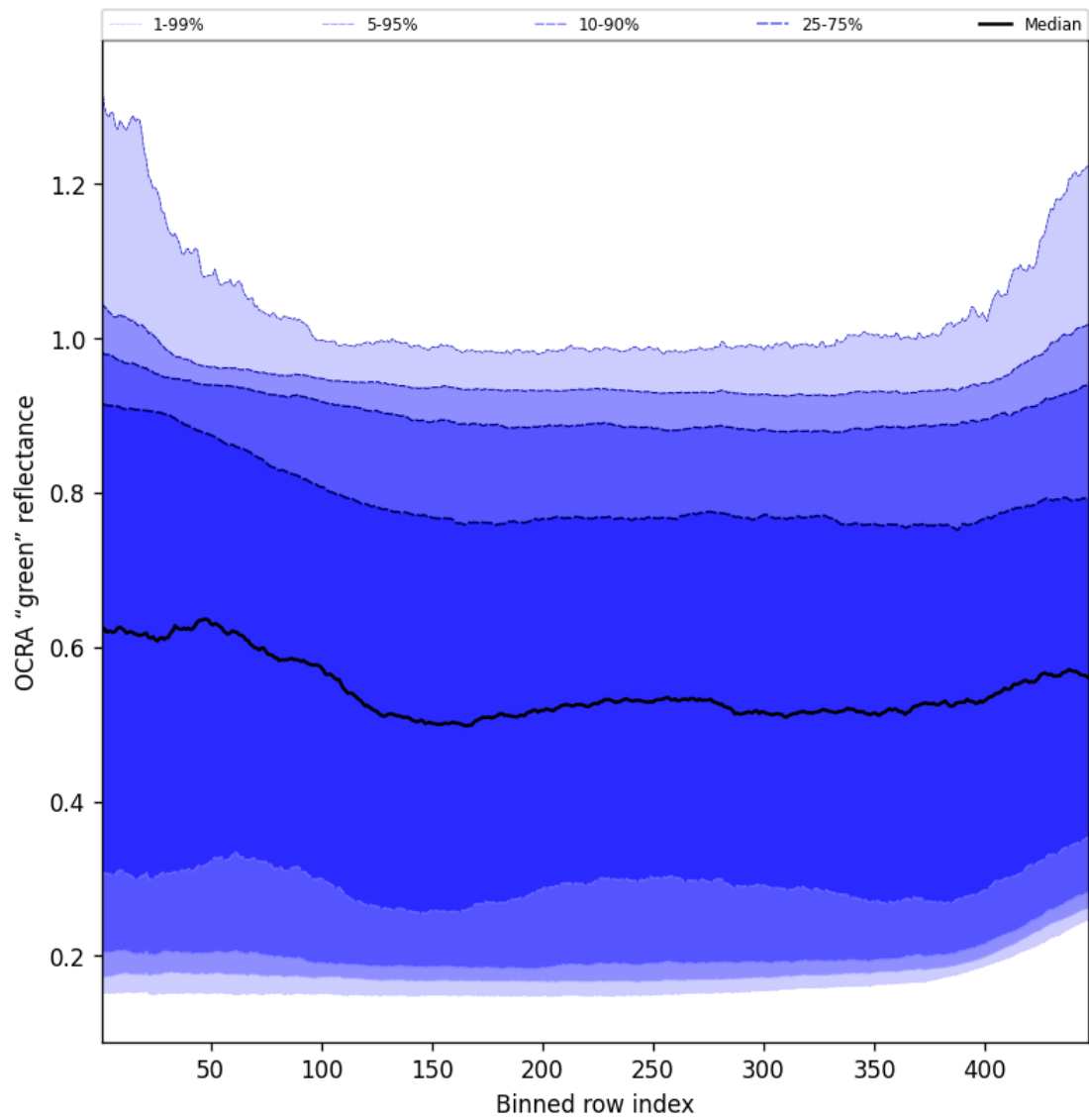


Figure 66: Along track statistics of "OCRA "green" reflectance" for 2024-12-18 to 2024-12-19

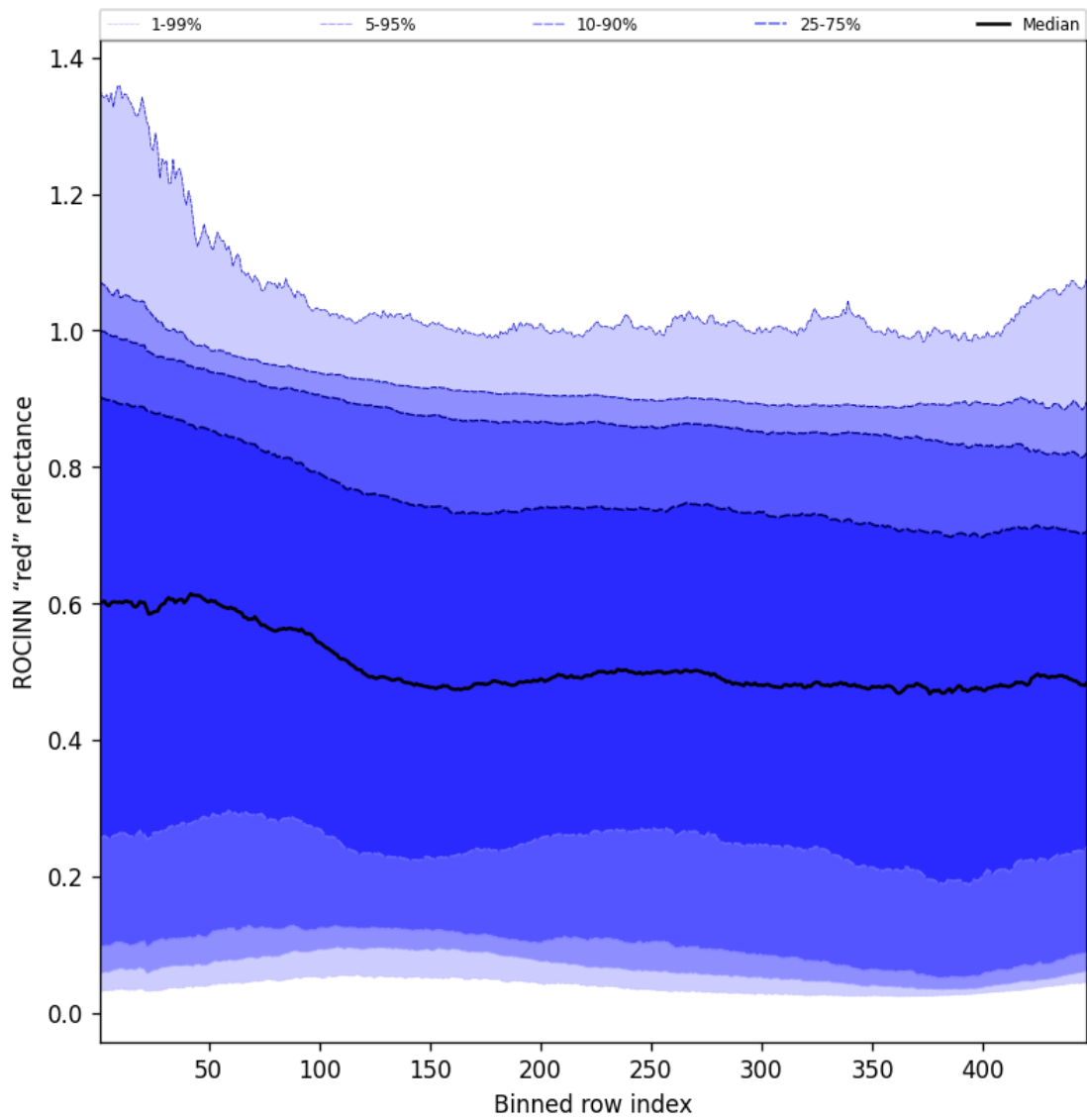


Figure 67: Along track statistics of "ROCINN "red" reflectance" for 2024-12-18 to 2024-12-19

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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