Pharmacokinetics of Drug Z

Study ID: STUDY-002

Sponsor: Pumas-AI

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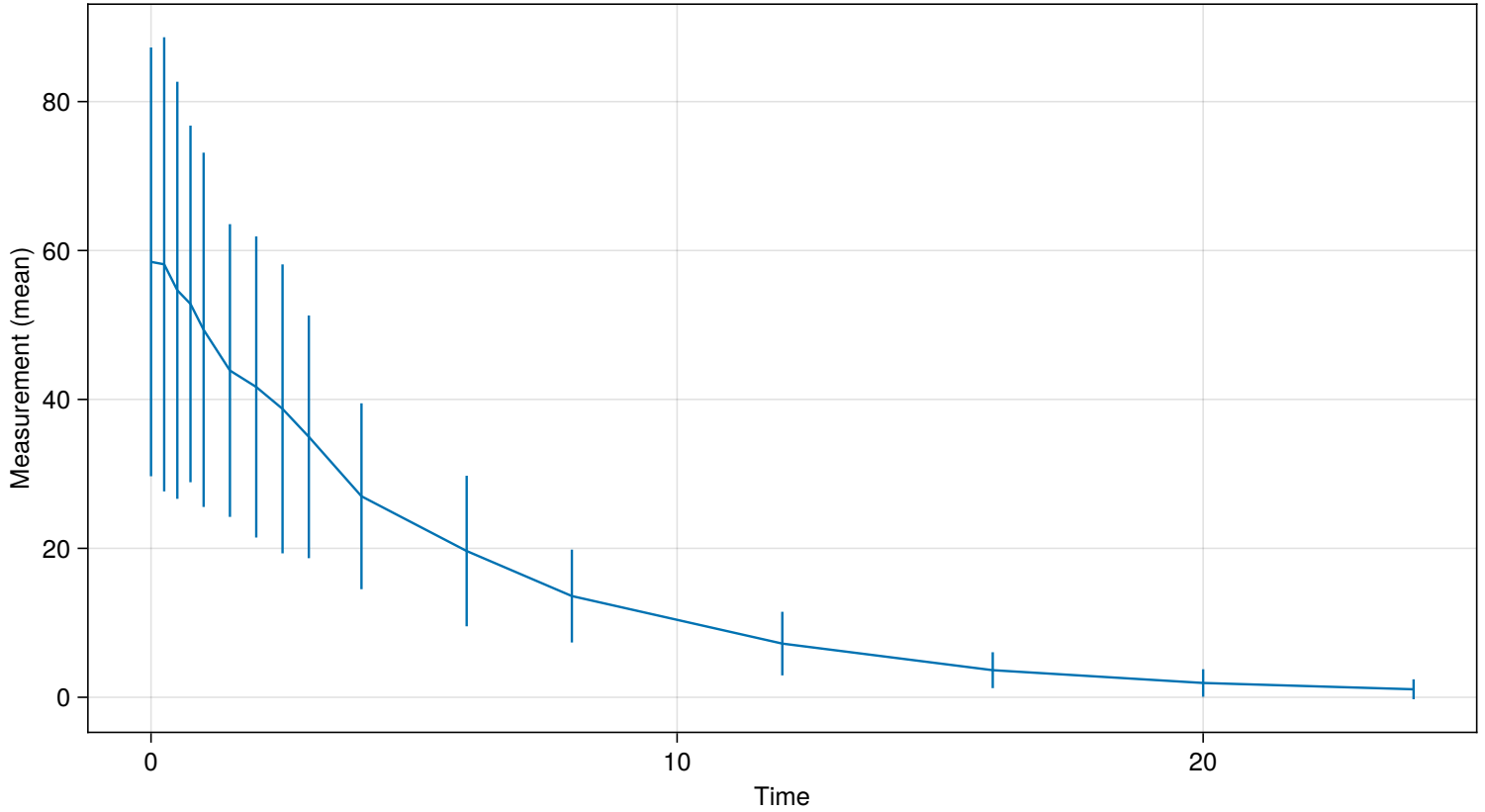

Figure 1: Summary of Observations vs Time

2 NCA Summary

Table 1: NCA Summary.

parameters	numsamples	minimum	maximum	mean	std	geomean	geostd	geomeanCV
tmax	30	0	1	0.258	0.282	0	NaN	NaN
cmax	30	24	140	67.4	31.3	60.3	1.64	52.5
c0	30	17.3	116	58.5	28.8	51	1.74	60.2
tlast	30	24	24	24	0	24	1	4.52e-14
clast	30	0.06	7.51	1.07	1.34	0.709	2.58	120
clast_pred	30	0.0669	6.73	1.02	1.21	0.687	2.52	116
auclast	30	146	605	329	143	299	1.58	47.9
kel	30	0.0924	0.269	0.185	0.0411	0.18	1.28	24.7
half_life	30	2.58	7.5	3.98	1.09	3.86	1.28	24.7
aucinf_obs	30	147	687	337	150	306	1.58	48.2
aucinf_pred	30	147	678	337	149	305	1.58	48.2
tmin	30	24	24	24	0	24	1	4.52e-14
cmin	30	0.06	7.51	1.07	1.34	0.709	2.58	120
cminss	30	0.06	7.51	1.07	1.34	0.709	2.58	120
vz_obs	30	5.7	13.1	8.47	1.94	8.27	1.24	22.1
cl_obs	30	1.09	1.97	1.5	0.209	1.49	1.15	14
vz_pred	30	5.7	13.1	8.49	1.96	8.29	1.25	22.3
cl_pred	30	1.11	1.97	1.5	0.207	1.49	1.15	13.8
vss_obs	30	5.66	13	8.53	1.9	8.34	1.24	21.8
vss_pred	30	5.66	13	8.55	1.92	8.35	1.24	21.9
n_samples	30	16	16	16	0	16	1	0
cmax_dn	30	0.0938	0.186	0.135	0.0236	0.133	1.2	18
auclast_dn	30	0.504	0.807	0.664	0.084	0.658	1.14	12.9
aucinf_dn_obs	30	0.509	0.915	0.679	0.0952	0.673	1.15	14
auc_extrap_obs	30	0.137	11.8	2.09	2.52	1.29	2.7	130
auc_back_extrap_obs	30	0	0	0	0	0	NaN	NaN
aucinf_dn_pred	30	0.508	0.904	0.678	0.0939	0.672	1.15	13.9
auc_extrap_pred	30	0.153	10.7	1.98	2.29	1.25	2.63	125
auc_back_extrap_pred	30	0	0	0	0	0	NaN	NaN
aumclast	30	542	4590	1750	899	1550	1.66	54.2
aumcinf_obs	30	551	7420	2000	1300	1720	1.73	59.2
aumc_extrap_obs	30	1.03	38.1	9.31	8.26	6.84	2.24	95.9
aumcinf_pred	30	551	7120	1980	1260	1710	1.72	58.8
aumc_extrap_pred	30	1.15	35.6	8.94	7.74	6.65	2.19	92.2
mrtlast	30	3.65	7.58	5.26	0.955	5.17	1.2	18.2
mrtinf_obs	30	3.69	10.8	5.79	1.56	5.61	1.28	24.9
mrtinf_pred	30	3.69	10.8	5.79	1.56	5.61	1.28	24.9
n_samples_kel	30	3	16	7.73	4.43	6.57	1.8	64.3
rsq_kel	30	0.965	1	0.99	0.01	0.99	1.01	1.02
rsq_adj_kel	30	0.962	1	0.989	0.0108	0.989	1.01	1.1

3 NCA parameters

Table 2: NCA parameters (dose to aucinf_pred)

id	dose	tmax	cmax	c0	tlast	clast	clast_pred	auclast	kel	half_life	aucinf_obs	aucinf_pred
1	250	0.5	25.6	17.3	24	1.84	1.65	183	0.107	6.48	200	199
2	250	0	43	43	24	0.06	0.0669	163	0.269	2.58	163	163
3	250	0.25	43.9	32.6	24	0.56	0.533	179	0.177	3.92	183	182
4	250	0.5	34.2	29.8	24	0.89	0.78	195	0.155	4.48	201	200
5	250	0.25	31.8	30.3	24	0.64	0.62	193	0.161	4.32	197	197
6	250	0	24	24	24	0.92	0.881	146	0.131	5.29	153	152
7	250	0.25	39.4	30.8	24	0.08	0.0805	147	0.248	2.79	147	147
8	250	0.25	33.6	23	24	0.69	0.693	160	0.141	4.9	164	164
9	250	0.5	30.3	20.1	24	0.38	0.385	186	0.194	3.58	188	188
10	250	0.5	38.5	28.4	24	0.15	0.159	179	0.237	2.93	180	180
11	500	0	75	75	24	0.66	0.607	305	0.2	3.46	308	308
12	500	0	61	61	24	1.23	1.17	325	0.16	4.34	333	333
13	500	0.25	75.1	69.7	24	0.31	0.283	350	0.236	2.94	352	352
14	500	0.25	49.2	28.3	24	0.7	0.564	284	0.186	3.73	288	287
15	500	0.25	71.6	49.3	24	1.1	1.03	374	0.184	3.78	380	380
16	500	0.75	65.8	49.5	24	1.02	0.84	357	0.182	3.81	362	361
17	500	0	66.6	66.6	24	0.85	0.843	343	0.197	3.52	348	348
18	500	0	60.2	60.2	24	0.42	0.373	252	0.186	3.73	254	254
19	500	0	70.4	70.4	24	0.52	0.598	305	0.186	3.73	308	308
20	500	0.75	46.9	36.6	24	1.72	1.73	286	0.128	5.42	299	299
21	750	0.25	140	90.9	24	1.09	1.06	581	0.195	3.55	586	586
22	750	0.25	106	73.4	24	0.78	0.792	401	0.221	3.14	405	405
23	750	0	98.6	98.6	24	2.7	2.65	560	0.143	4.85	579	579
24	750	0	104	104	24	0.52	0.508	427	0.202	3.43	430	430
25	750	0	80	80	24	7.51	6.73	605	0.0924	7.5	687	678
26	750	0	116	116	24	0.72	0.668	505	0.214	3.23	508	508
27	750	0.75	99.7	92.4	24	0.5	0.508	433	0.217	3.19	435	435
28	750	0.25	120	85.8	24	1.63	1.77	558	0.165	4.2	568	569
29	750	0	91.6	91.6	24	1.08	1.13	430	0.203	3.42	435	435
30	750	1	80.7	75.4	24	0.89	0.896	469	0.219	3.17	473	473

Table 3: NCA parameters (tmin to cmax_dn)

id	tmin	cmin	cminss	vz_obs	cl_obs	vz_pred	cl_pred	vss_obs	vss_pred	n_samples	cmax_dn
1	24	1.84	1.84	11.7	1.25	11.8	1.26	11.8	11.9	16	0.102
2	24	0.06	0.06	5.7	1.53	5.7	1.53	5.66	5.66	16	0.172
3	24	0.56	0.56	7.75	1.37	7.75	1.37	7.85	7.85	16	0.176
4	24	0.89	0.89	8.05	1.25	8.08	1.25	8.05	8.08	16	0.137
5	24	0.64	0.64	7.89	1.27	7.9	1.27	7.82	7.82	16	0.127
6	24	0.92	0.92	12.5	1.64	12.5	1.64	13	13	16	0.096
7	24	0.08	0.08	6.84	1.7	6.84	1.7	6.36	6.36	16	0.158
8	24	0.69	0.69	10.7	1.52	10.7	1.52	9.68	9.68	16	0.134
9	24	0.38	0.38	6.87	1.33	6.87	1.33	6.97	6.97	16	0.121
10	24	0.15	0.15	5.87	1.39	5.87	1.39	6.19	6.18	16	0.154
11	24	0.66	0.66	8.11	1.62	8.12	1.62	8.87	8.87	16	0.15
12	24	1.23	1.23	9.39	1.5	9.4	1.5	9.12	9.13	16	0.122
13	24	0.31	0.31	6.02	1.42	6.03	1.42	5.96	5.96	16	0.15
14	24	0.7	0.7	9.34	1.73	9.36	1.74	9.49	9.51	16	0.0983
15	24	1.1	1.1	7.17	1.32	7.18	1.32	8.15	8.16	16	0.143
16	24	1.02	1.02	7.6	1.38	7.62	1.38	7.43	7.45	16	0.132
17	24	0.85	0.85	7.31	1.44	7.32	1.44	8.28	8.28	16	0.133
18	24	0.42	0.42	10.6	1.97	10.6	1.97	8.56	8.57	16	0.12
19	24	0.52	0.52	8.73	1.63	8.72	1.62	8.09	8.08	16	0.141
20	24	1.72	1.72	13.1	1.67	13.1	1.67	12.6	12.6	16	0.0938
21	24	1.09	1.09	6.55	1.28	6.55	1.28	6.19	6.19	16	0.186
22	24	0.78	0.78	8.38	1.85	8.38	1.85	9.35	9.35	16	0.142
23	24	2.7	2.7	9.06	1.29	9.07	1.3	8.99	8.99	16	0.131
24	24	0.52	0.52	8.64	1.75	8.64	1.75	7.66	7.66	16	0.139
25	24	7.51	7.51	11.8	1.09	12	1.11	11.8	12	16	0.107
26	24	0.72	0.72	6.88	1.48	6.89	1.48	7.39	7.39	16	0.155
27	24	0.5	0.5	7.93	1.72	7.93	1.72	7.72	7.72	16	0.133
28	24	1.63	1.63	8	1.32	7.99	1.32	7.74	7.73	16	0.16
29	24	1.08	1.08	8.5	1.72	8.5	1.72	10.6	10.6	16	0.122
30	24	0.89	0.89	7.24	1.58	7.24	1.58	8.62	8.62	16	0.108

Table 4: NCA parameters (auclast_dn to auc_extrap_pred)

id	auclast_dn	aucinf_dn_obs	auc_extrap_obs	auc_back_extrap_obs	aucinf_dn_pred	auc_extrap_pred
1	0.733	0.802	8.58	0	0.795	7.75
2	0.651	0.652	0.137	0	0.652	0.153
3	0.718	0.731	1.74	0	0.73	1.65
4	0.779	0.802	2.87	0	0.799	2.52
5	0.773	0.789	2.02	0	0.789	1.96
6	0.582	0.61	4.6	0	0.609	4.41
7	0.587	0.589	0.219	0	0.589	0.22
8	0.638	0.658	2.97	0	0.658	2.98
9	0.743	0.751	1.04	0	0.751	1.06
10	0.716	0.719	0.352	0	0.719	0.374
11	0.609	0.616	1.07	0	0.615	0.986
12	0.651	0.666	2.31	0	0.665	2.21
13	0.701	0.703	0.374	0	0.703	0.341
14	0.569	0.576	1.31	0	0.575	1.06
15	0.748	0.76	1.58	0	0.759	1.47
16	0.713	0.724	1.55	0	0.722	1.28
17	0.686	0.695	1.24	0	0.695	1.23
18	0.504	0.509	0.889	0	0.508	0.79
19	0.61	0.615	0.908	0	0.616	1.04
20	0.571	0.598	4.5	0	0.598	4.52
21	0.774	0.782	0.952	0	0.781	0.928
22	0.535	0.54	0.872	0	0.54	0.886
23	0.747	0.772	3.26	0	0.772	3.2
24	0.569	0.573	0.599	0	0.573	0.585
25	0.807	0.915	11.8	0	0.904	10.7
26	0.673	0.678	0.661	0	0.678	0.614
27	0.577	0.58	0.528	0	0.58	0.536
28	0.744	0.757	1.74	0	0.758	1.89
29	0.573	0.58	1.22	0	0.58	1.28
30	0.626	0.631	0.859	0	0.631	0.865

Table 5: NCA parameters (auc_back_extrap_pred to aumc_extrap_pred)

id	auc_back_extrap_pred	aumclast	aumcinf_obs	aumc_extrap_obs	aumcinf_pred	aumc_extrap_pred
1	0	1320	1900	30.3	1830	28
2	0	595	601	1.03	601	1.15
3	0	953	1050	8.98	1040	8.58
4	0	1120	1300	13.5	1270	12
5	0	1100	1220	9.9	1210	9.62
6	0	986	1210	18.4	1200	17.7
7	0	542	551	1.64	551	1.65
8	0	895	1050	14.5	1050	14.5
9	0	926	983	5.82	984	5.89
10	0	781	799	2.24	800	2.37
11	0	1590	1680	5.68	1670	5.25
12	0	1790	2020	11.5	2010	11
13	0	1440	1480	2.52	1470	2.3
14	0	1470	1580	7.02	1550	5.74
15	0	2180	2350	7.49	2340	7.03
16	0	1780	1950	8.49	1920	7.1
17	0	1870	2000	6.28	2000	6.23
18	0	1040	1110	6	1100	5.36
19	0	1450	1530	5.36	1540	6.12
20	0	1830	2260	19	2260	19
21	0	2670	2840	5.73	2830	5.59
22	0	1940	2040	4.93	2040	5
23	0	3440	4020	14.6	4010	14.3
24	0	1810	1880	3.95	1880	3.87
25	0	4590	7420	38.1	7120	35.6
26	0	2450	2550	3.78	2540	3.52
27	0	1880	1950	3.38	1950	3.43
28	0	3030	3330	8.92	3350	9.63
29	0	2530	2680	5.75	2690	6.01
30	0	2460	2570	4.51	2570	4.54

Table 6: NCA parameters (mrtlast to intercept_kel)

id	mrtlast	mrtinf_obs	mrtinf_pred	n_samples_kel	rsq_kel	rsq_adj_kel	corr_kel	intercept_kel
1	7.21	9.45	9.45	13	0.983	0.981	0.991	3.06
2	3.65	3.69	3.69	7	0.997	0.997	0.999	3.75
3	5.31	5.73	5.73	4	0.996	0.995	0.998	3.61
4	5.75	6.46	6.46	14	0.967	0.964	0.983	3.47
5	5.67	6.17	6.17	4	0.996	0.994	0.998	3.37
6	6.77	7.91	7.91	9	0.986	0.984	0.993	3.02
7	3.69	3.75	3.75	8	0.997	0.997	0.999	3.44
8	5.61	6.36	6.36	3	1	1	1	3.03
9	4.98	5.24	5.24	3	0.999	0.998	1	3.7
10	4.36	4.45	4.45	5	0.998	0.997	0.999	3.85
11	5.21	5.46	5.46	6	0.988	0.985	0.994	4.31
12	5.5	6.07	6.07	16	0.987	0.986	0.994	4
13	4.1	4.19	4.19	15	0.992	0.991	0.996	4.4
14	5.15	5.47	5.47	15	0.965	0.962	0.982	3.89
15	5.82	6.2	6.2	6	0.994	0.993	0.997	4.43
16	5	5.38	5.38	13	0.98	0.978	0.99	4.19
17	5.46	5.76	5.76	3	1	0.999	1	4.55
18	4.13	4.36	4.36	5	0.991	0.988	0.995	3.47
19	4.76	4.98	4.98	7	0.993	0.991	0.996	3.95
20	6.41	7.55	7.55	6	0.997	0.996	0.998	3.62
21	4.61	4.84	4.84	4	0.999	0.998	0.999	4.75
22	4.84	5.05	5.05	3	0.999	0.998	1	5.07
23	6.13	6.94	6.94	15	0.981	0.98	0.991	4.4
24	4.24	4.39	4.39	3	0.998	0.995	0.999	4.17
25	7.58	10.8	10.8	11	0.968	0.964	0.984	4.12
26	4.85	5.01	5.01	10	0.985	0.983	0.992	4.74
27	4.35	4.48	4.48	6	0.998	0.998	0.999	4.54
28	5.43	5.86	5.86	11	0.988	0.987	0.994	4.54
29	5.88	6.16	6.16	4	0.992	0.989	0.996	4.99
30	5.24	5.44	5.44	3	1	1	1	5.15

Table 7: NCA parameters (kel_t_low to route)

id	kel_t_low	kel_t_high	span	route
1	0.75	24	3.59	IVBolus
2	4	24	7.76	IVBolus
3	12	24	3.06	IVBolus
4	0.5	24	5.25	IVBolus
5	12	24	2.78	IVBolus
6	2.5	24	4.07	IVBolus
7	3	24	7.53	IVBolus
8	16	24	1.63	IVBolus
9	16	24	2.24	IVBolus
10	8	24	5.47	IVBolus
11	6	24	5.2	IVBolus
12	0	24	5.54	IVBolus
13	0.25	24	8.08	IVBolus
14	0.25	24	6.37	IVBolus
15	6	24	4.77	IVBolus
16	0.75	24	6.1	IVBolus
17	16	24	2.27	IVBolus
18	8	24	4.29	IVBolus
19	4	24	5.37	IVBolus
20	6	24	3.32	IVBolus
21	12	24	3.38	IVBolus
22	16	24	2.55	IVBolus
23	0.25	24	4.89	IVBolus
24	16	24	2.33	IVBolus
25	1.5	24	3	IVBolus
26	2	24	6.8	IVBolus
27	6	24	5.65	IVBolus
28	1.5	24	5.36	IVBolus
29	12	24	3.51	IVBolus
30	16	24	2.53	IVBolus

4 Parameter Distribution

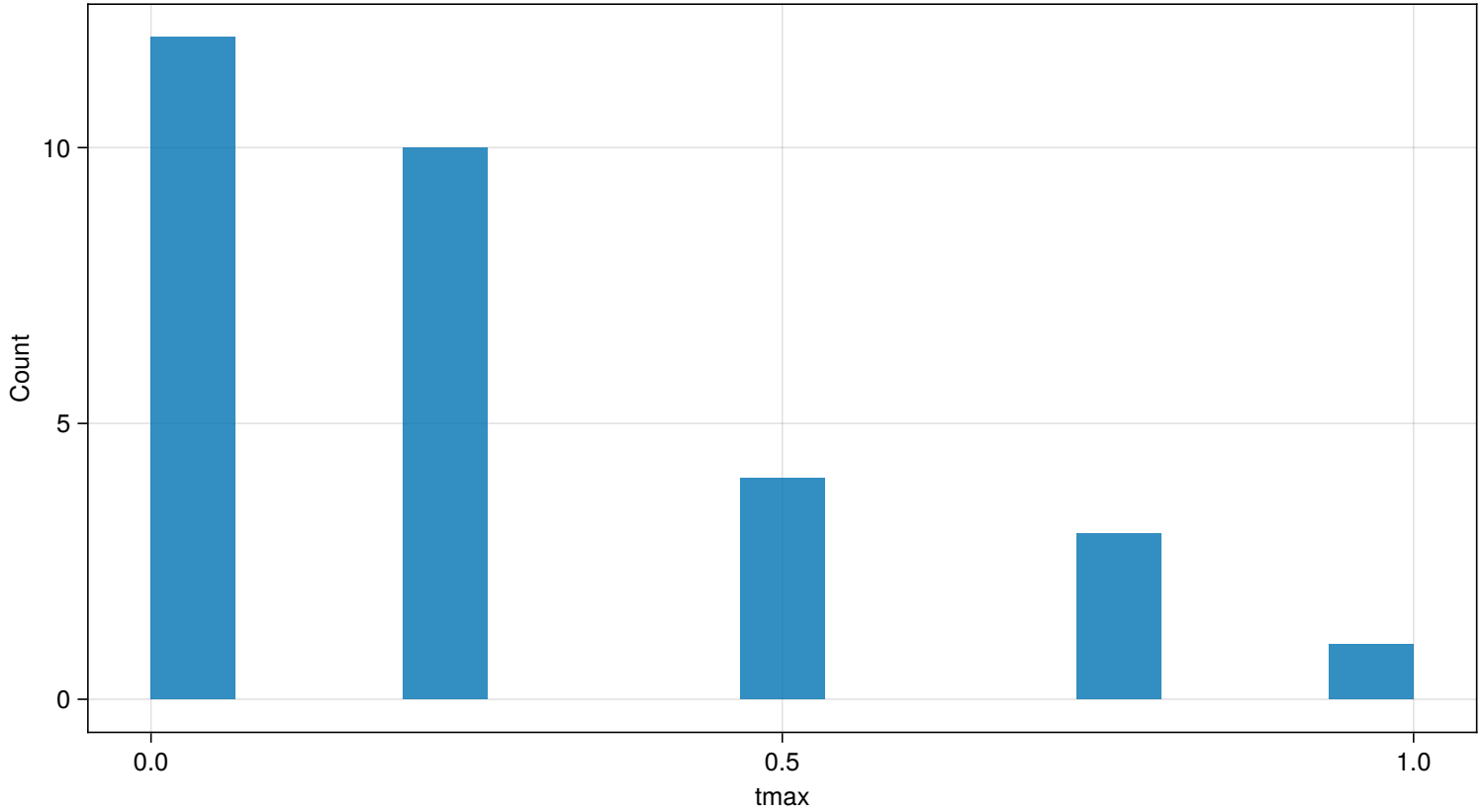

Figure 2: Parameter (tmax) Distribution

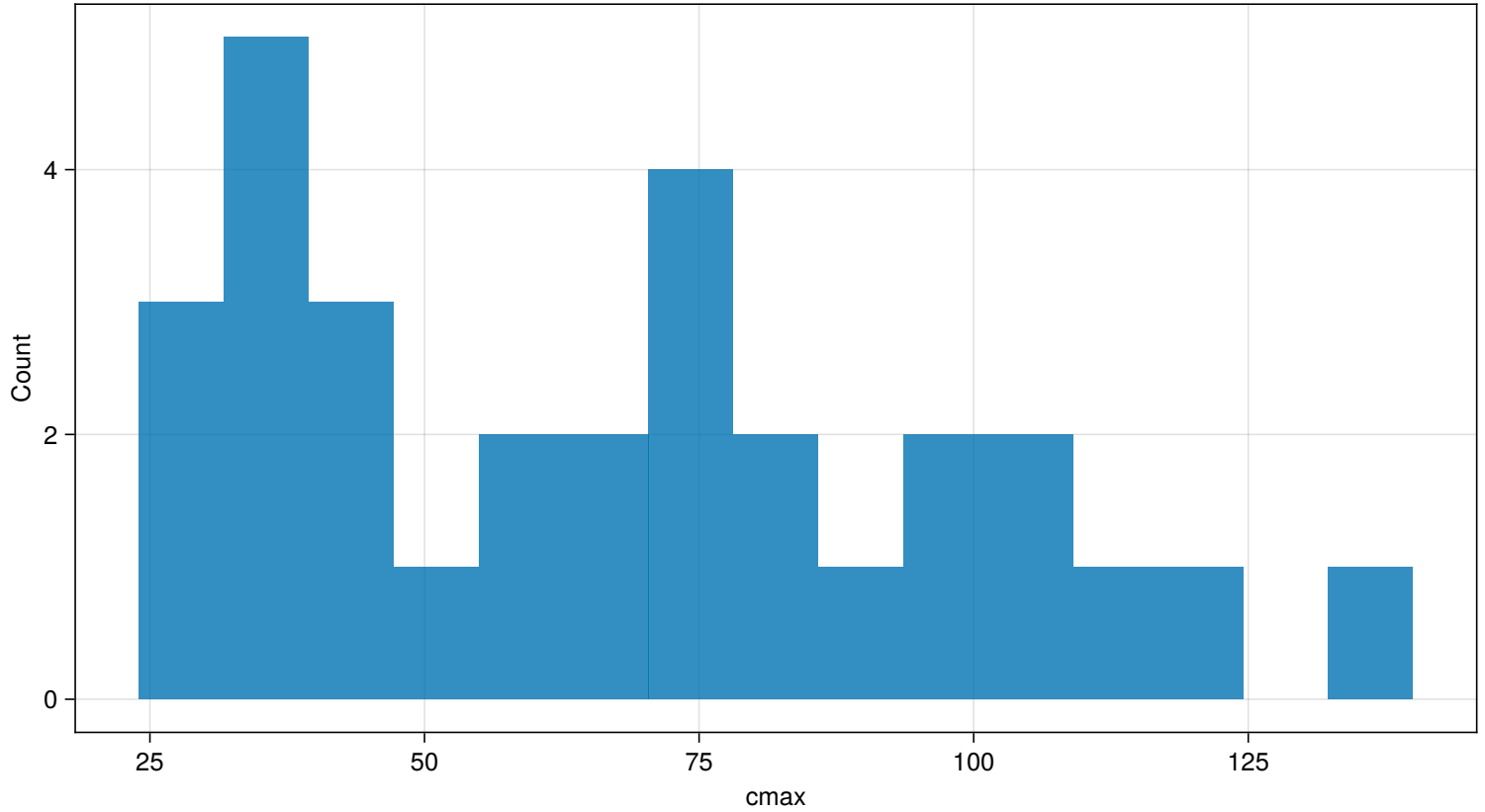

Figure 3: Parameter (cmax) Distribution

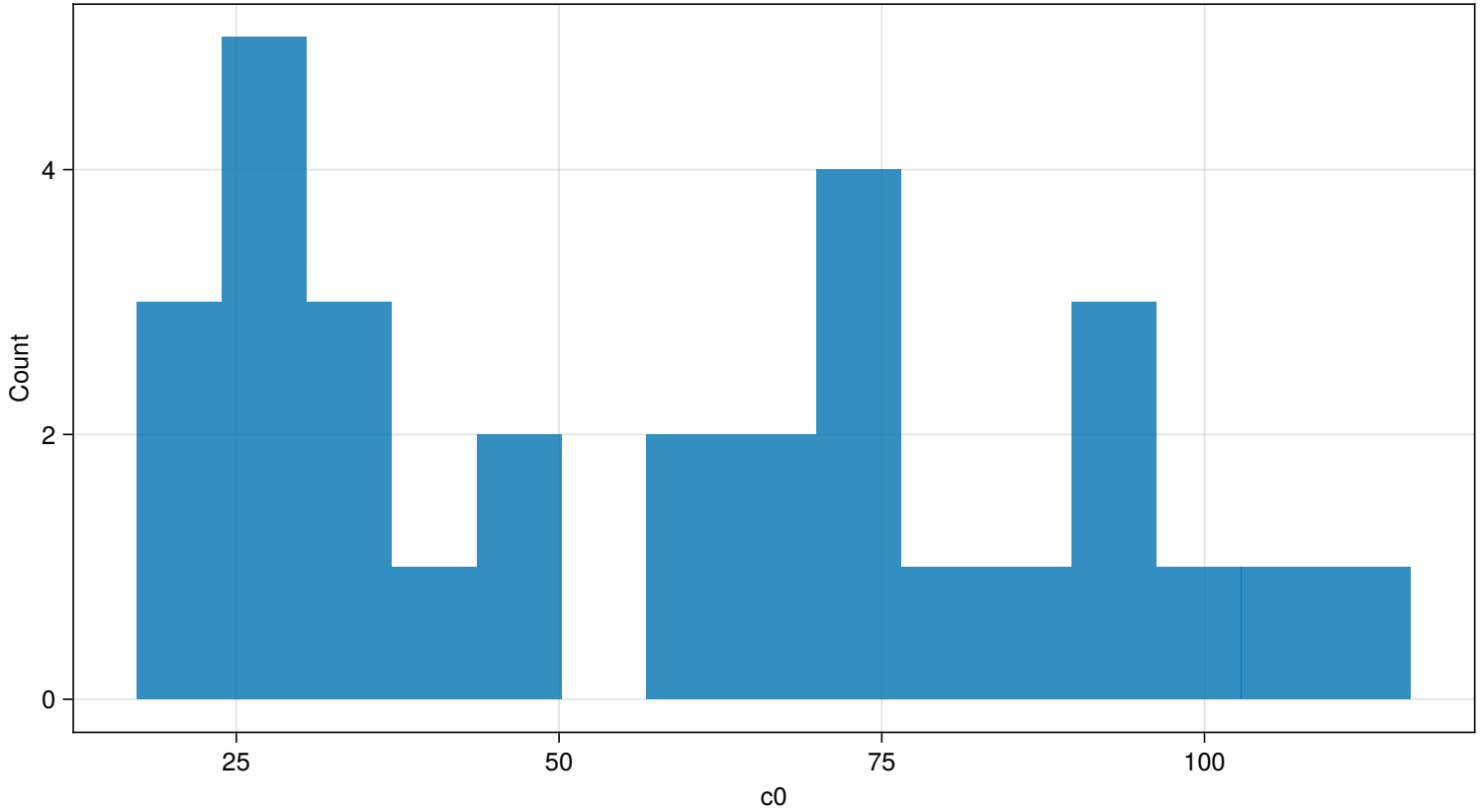

Figure 4: Parameter (c0) Distribution

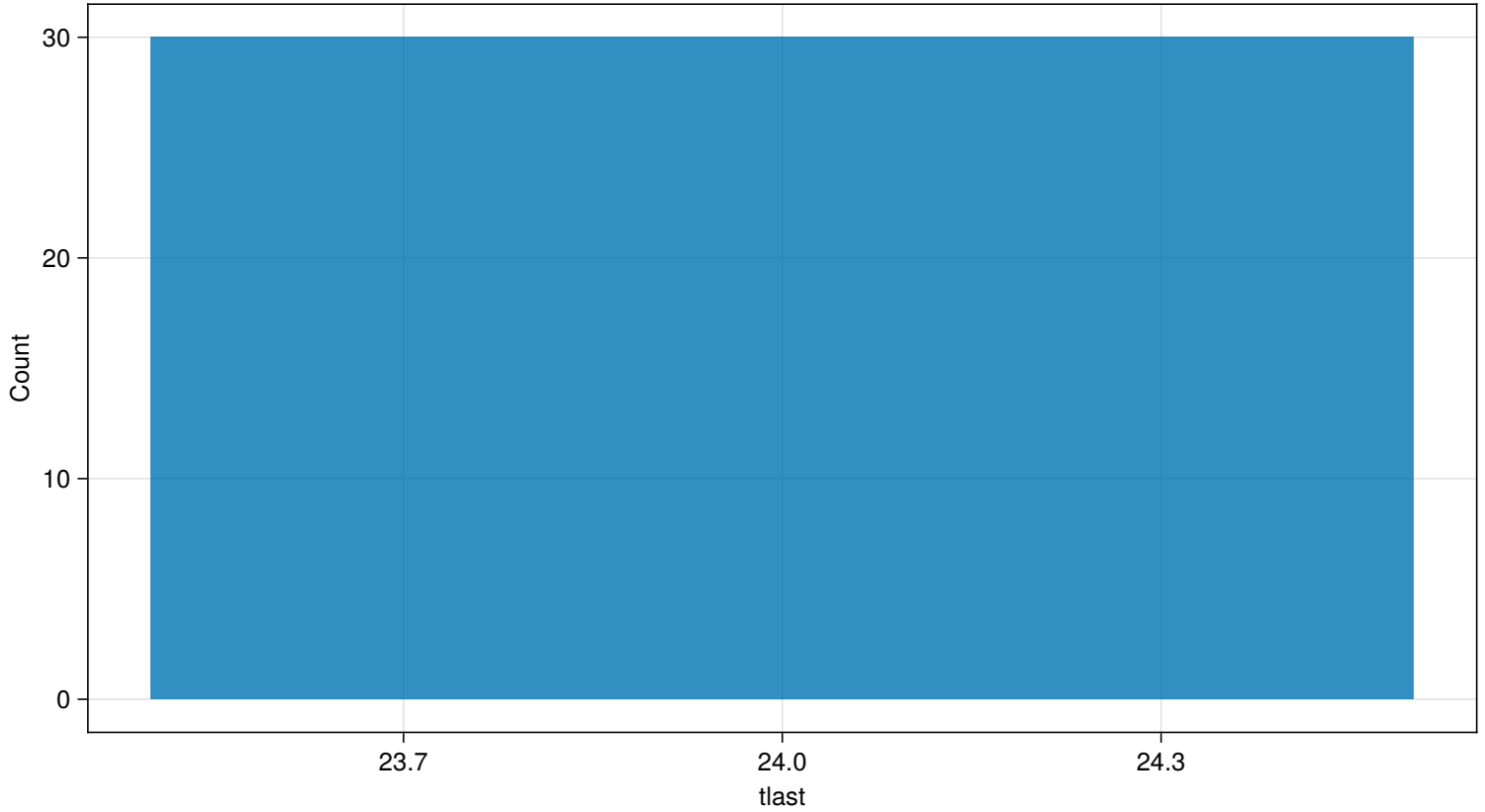

Figure 5: Parameter (tlast) Distribution

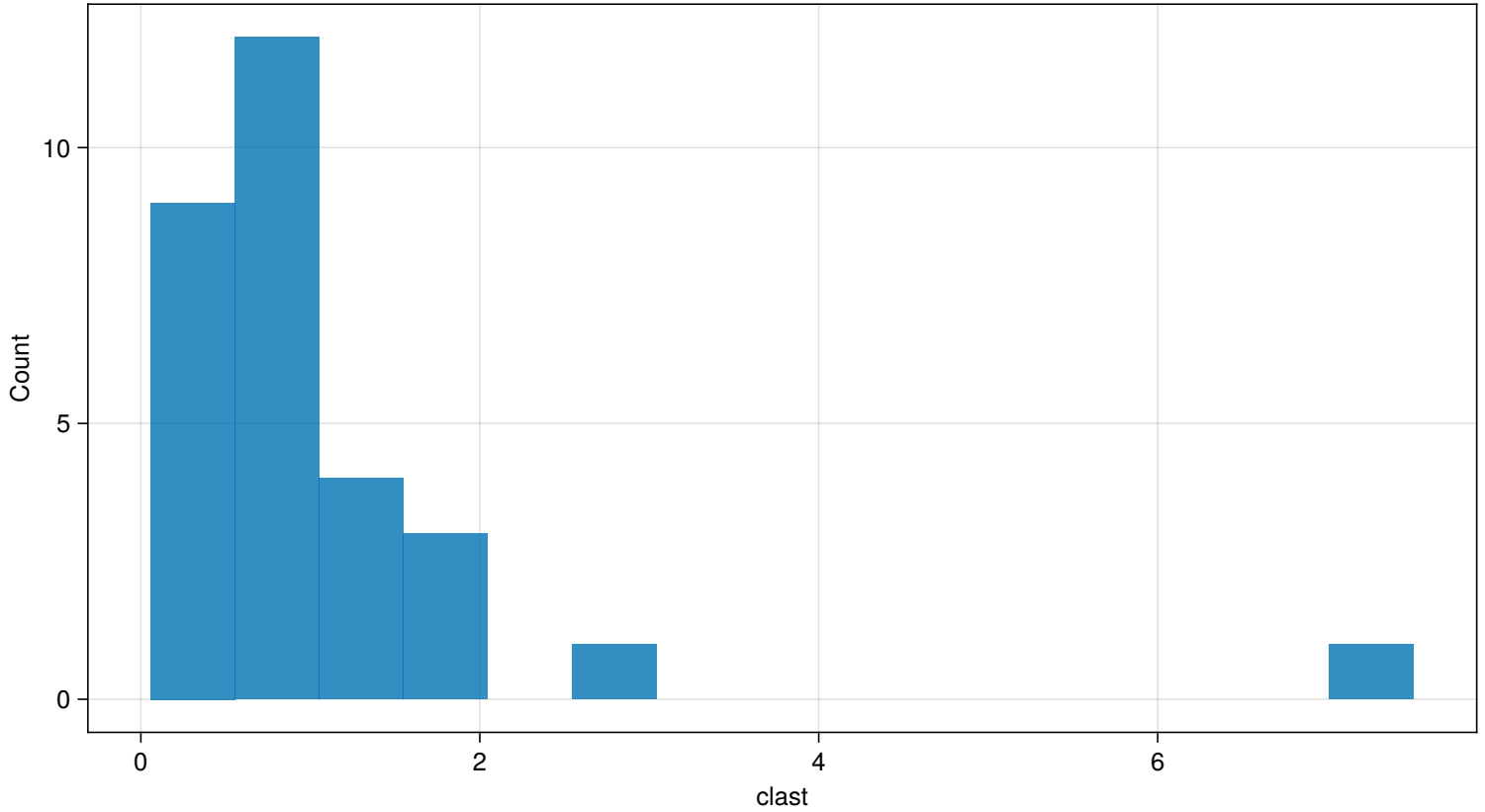

Figure 6: Parameter (clast) Distribution

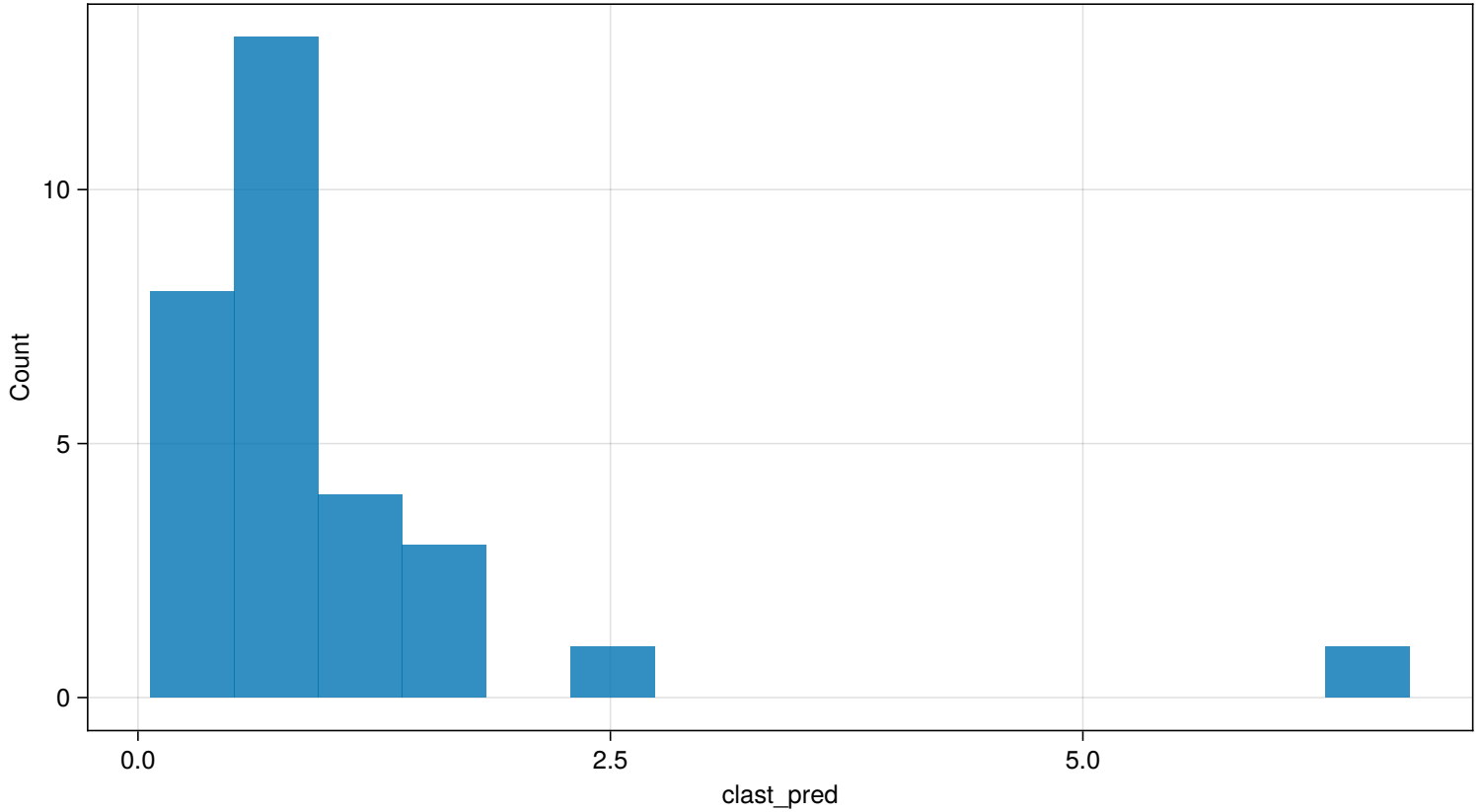

Figure 7: Parameter (clast_pred) Distribution

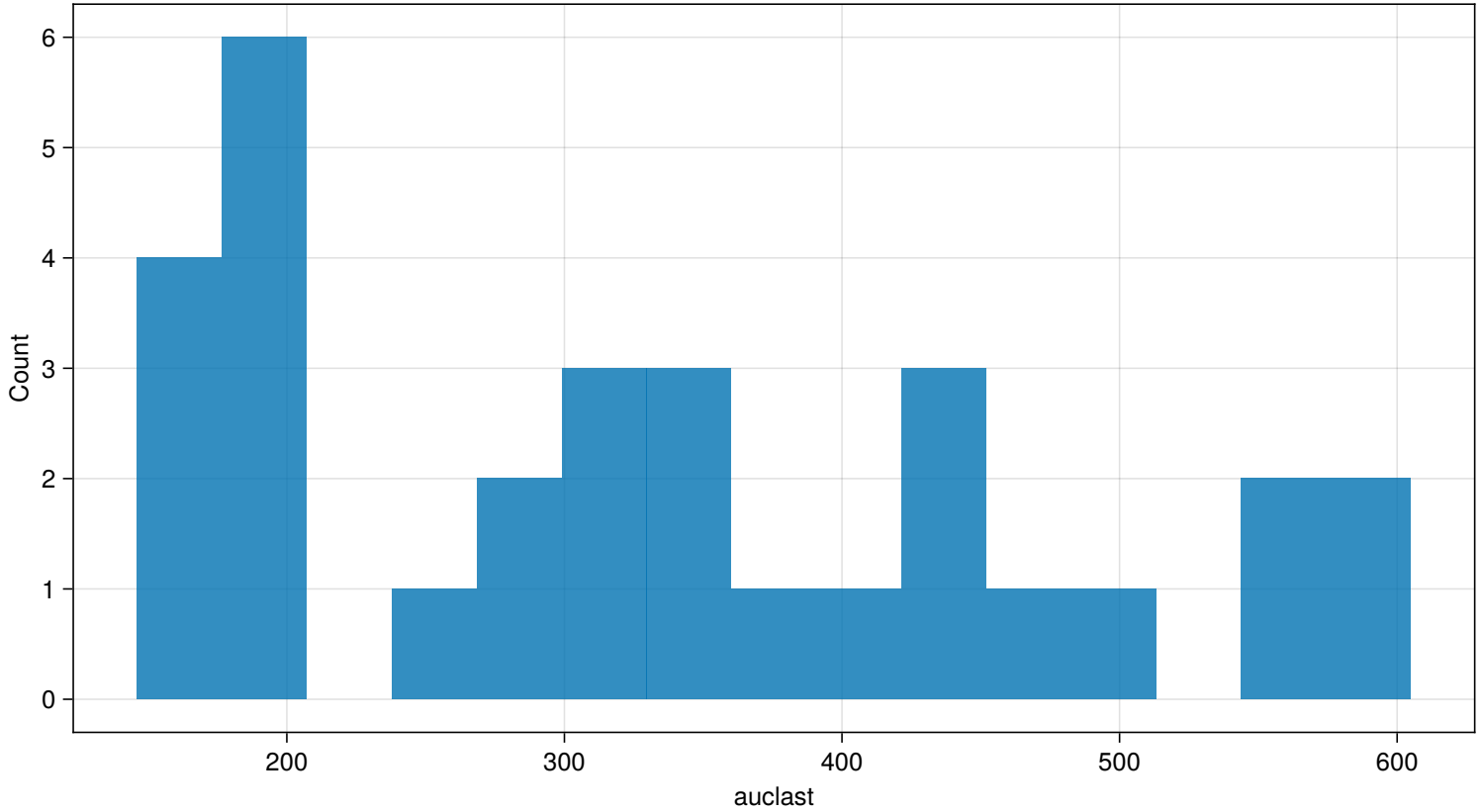

Figure 8: Parameter (auclast) Distribution

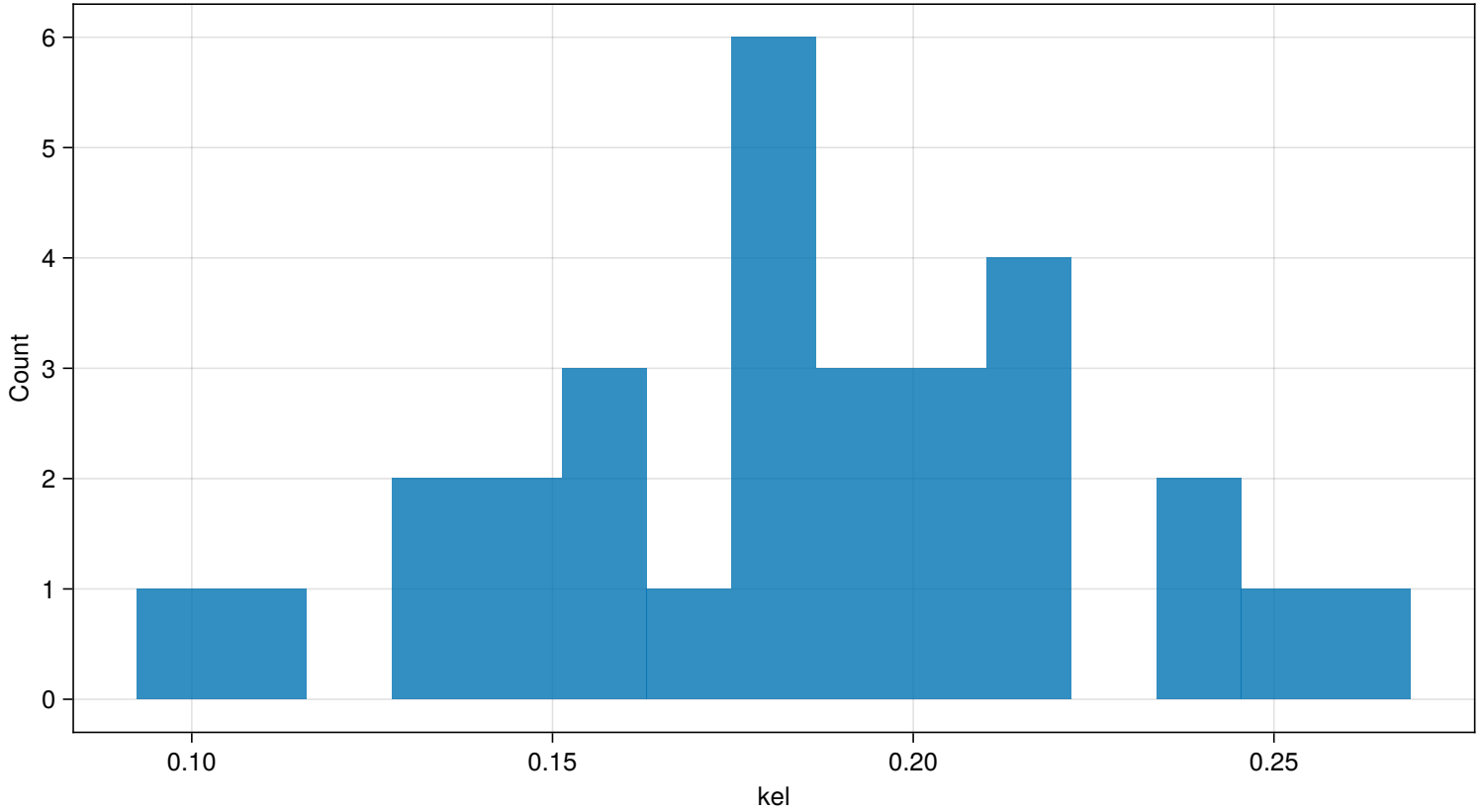

Figure 9: Parameter (kel) Distribution

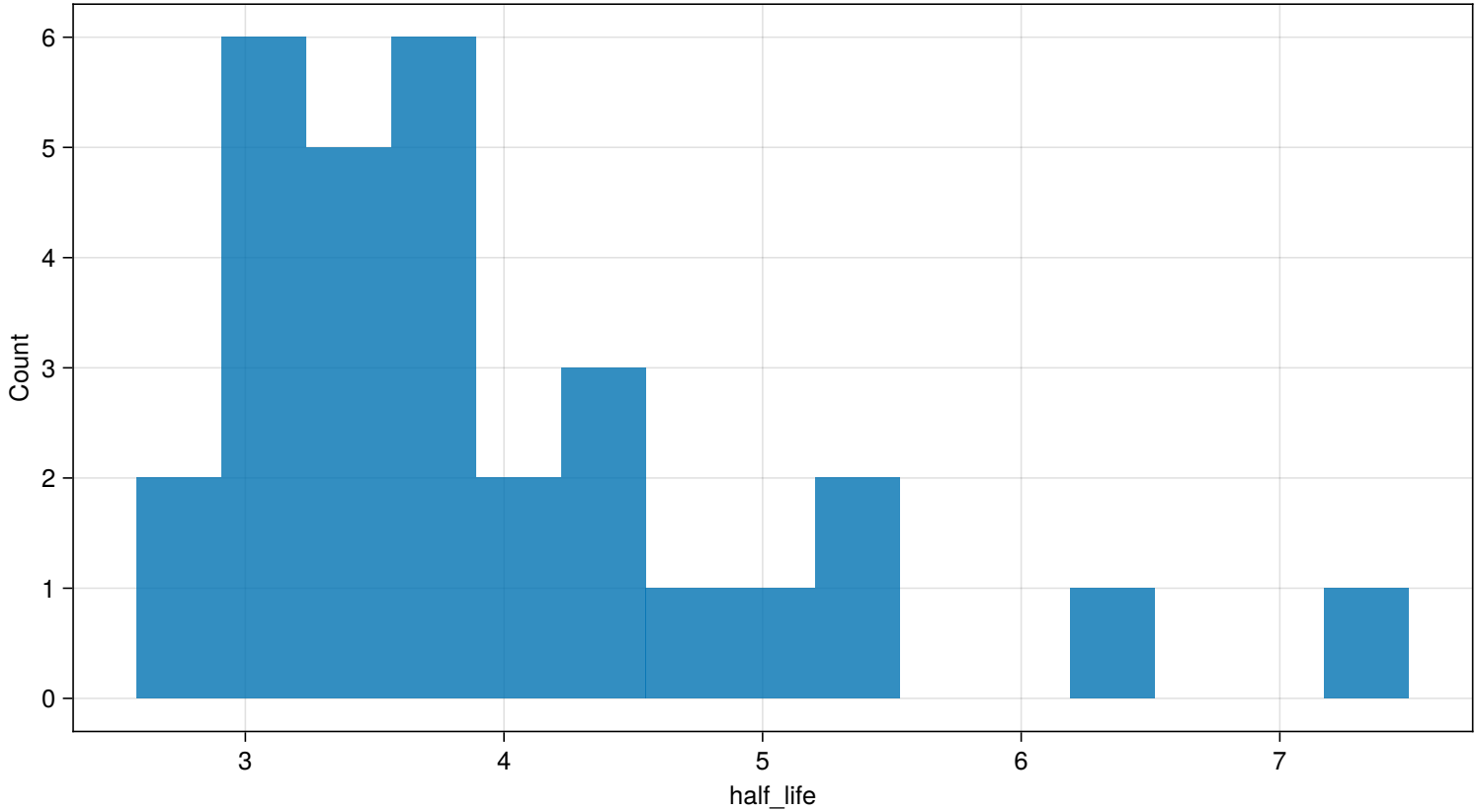

Figure 10: Parameter (half_life) Distribution

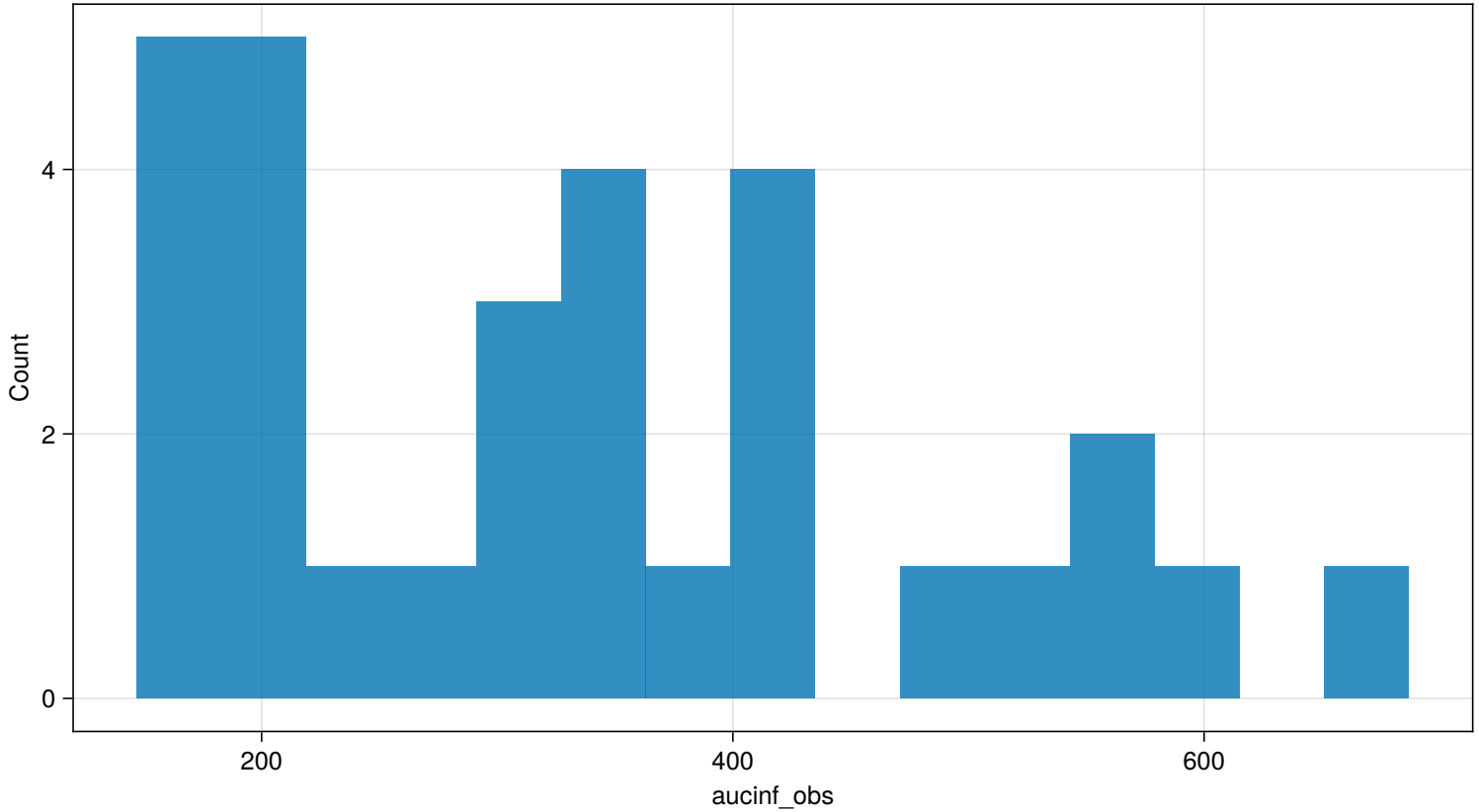

Figure 11: Parameter (aucinf_obs) Distribution

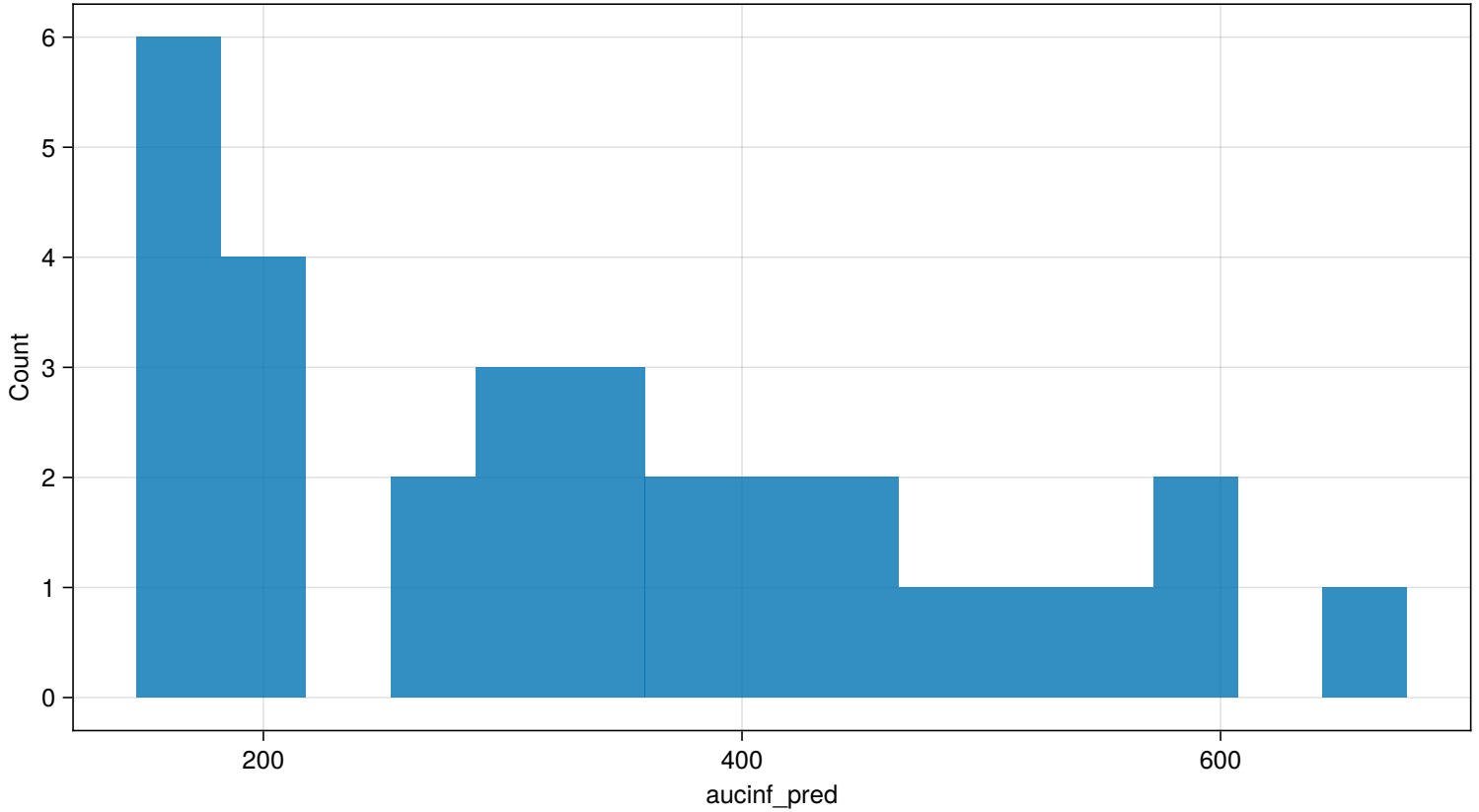

Figure 12: Parameter (aucinf_pred) Distribution

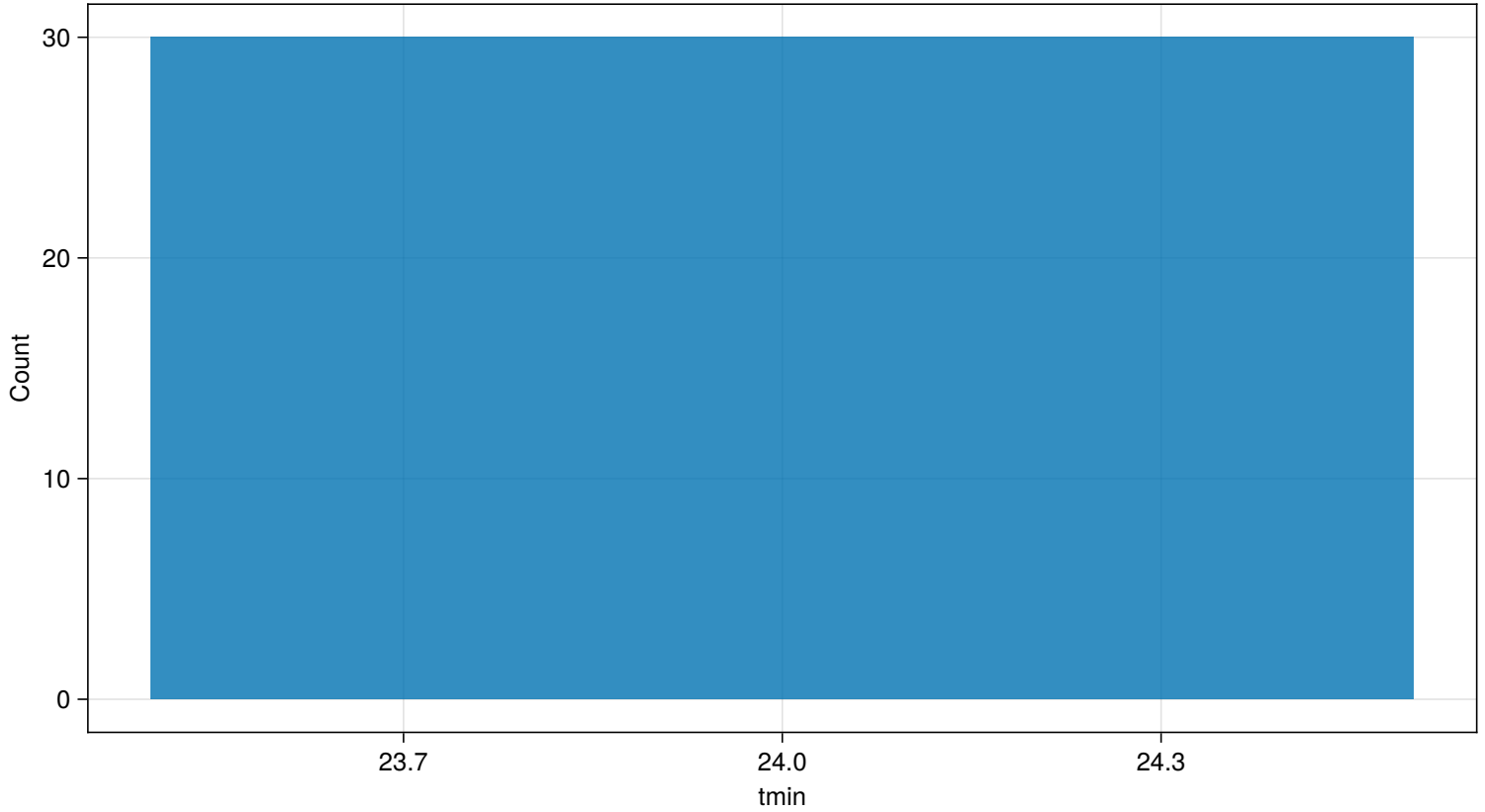

Figure 13: Parameter (tmin) Distribution

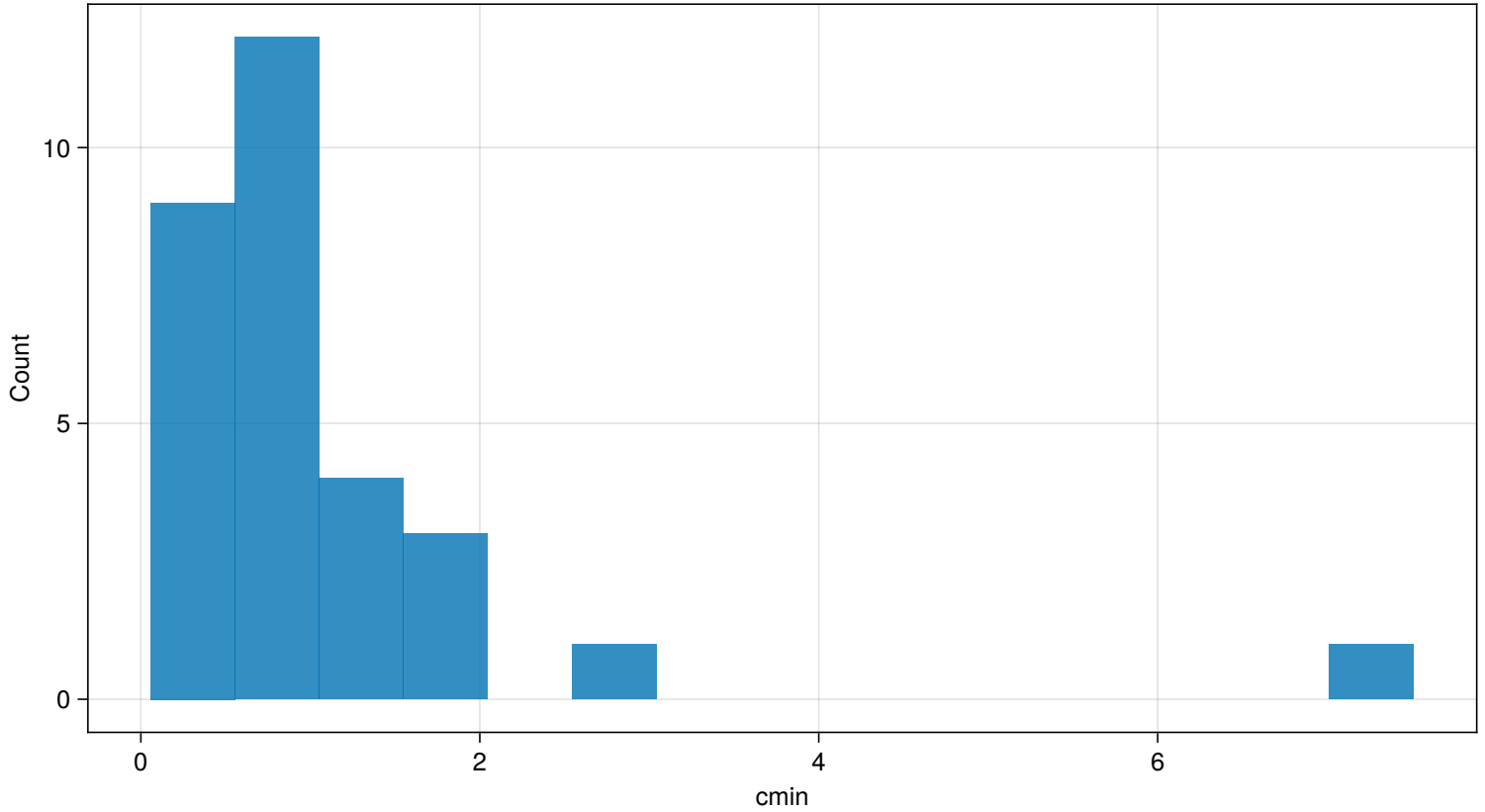

Figure 14: Parameter (cmin) Distribution

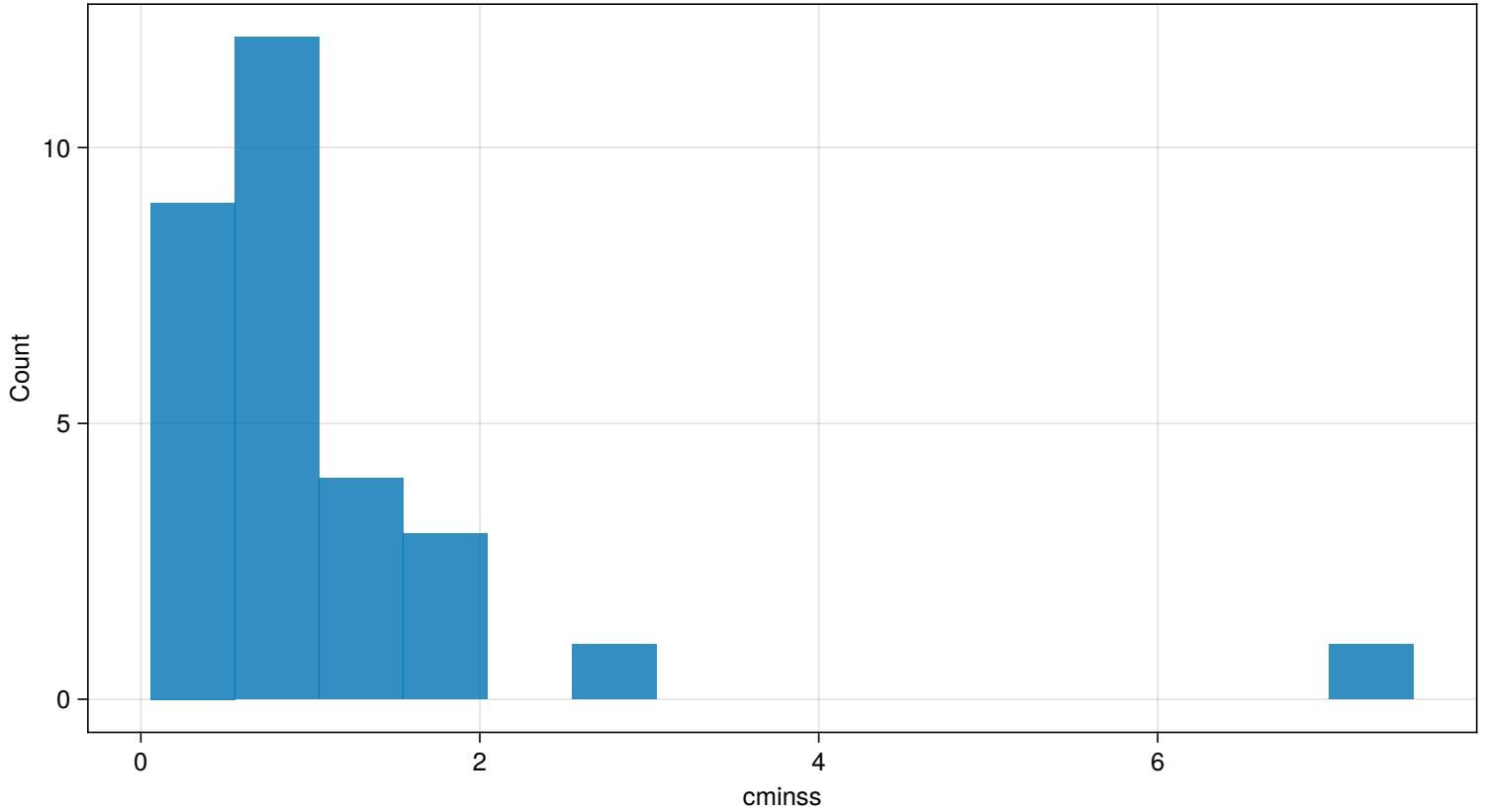

Figure 15: Parameter (cminss) Distribution

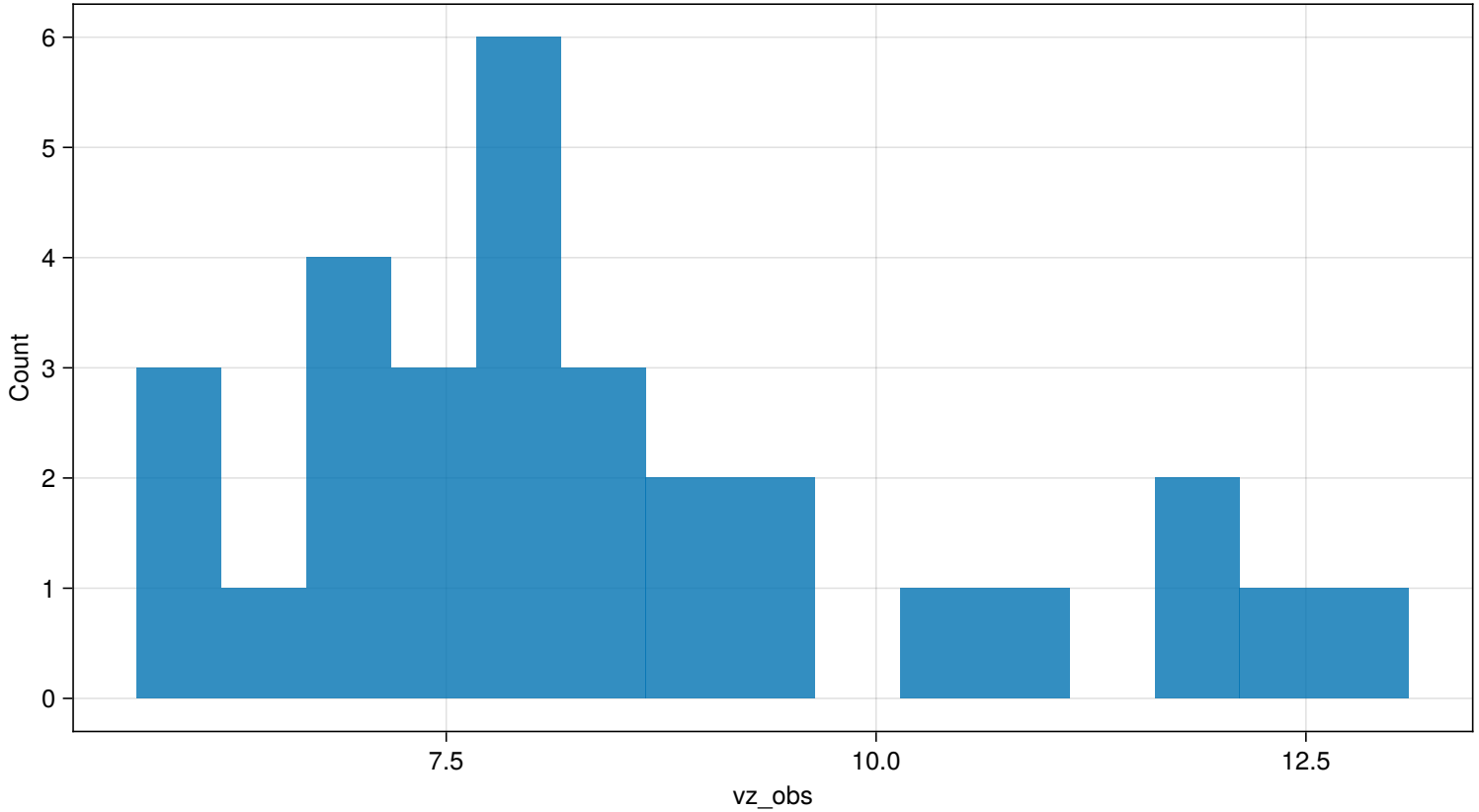

Figure 16: Parameter (vz_obs) Distribution

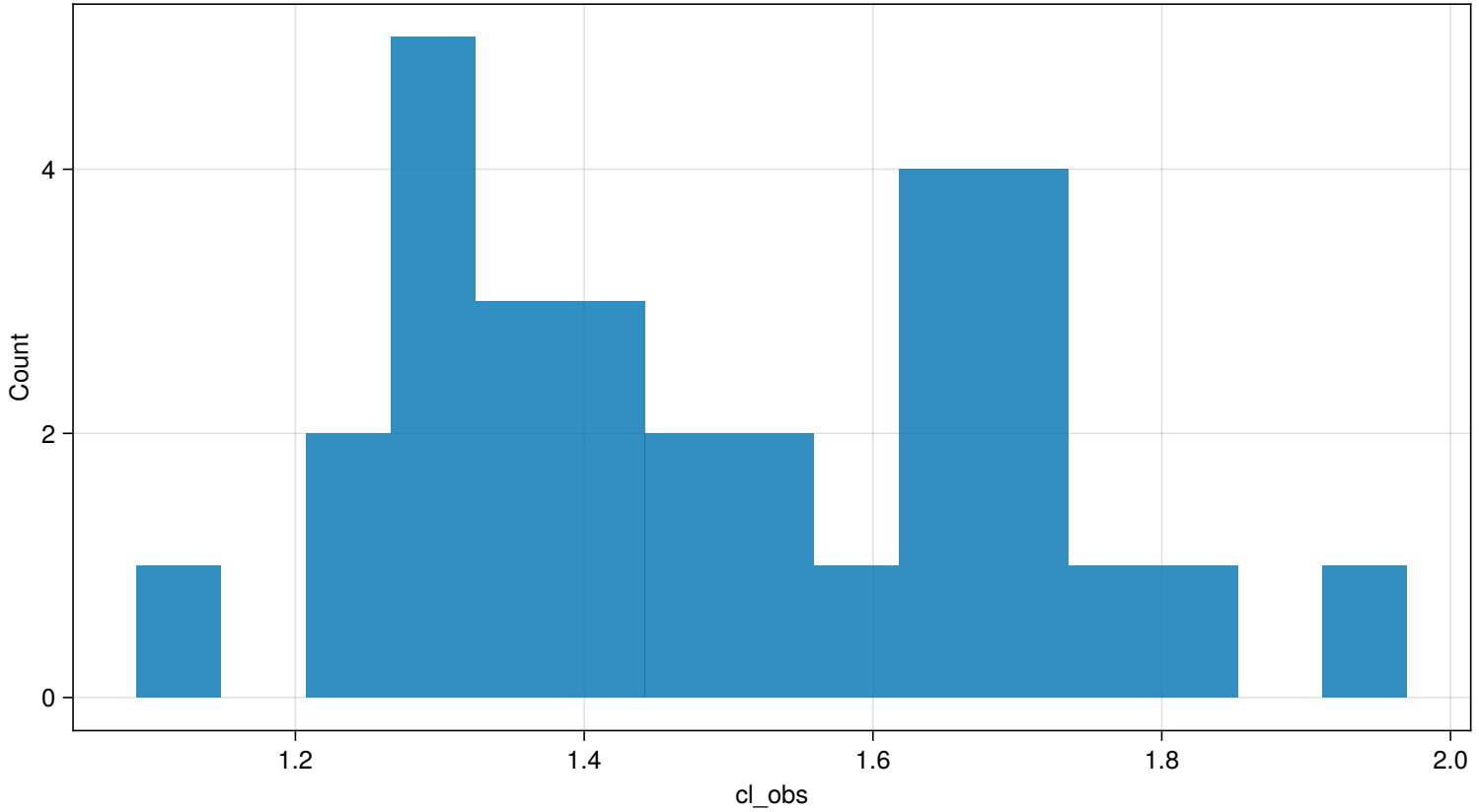

Figure 17: Parameter (cl_obs) Distribution

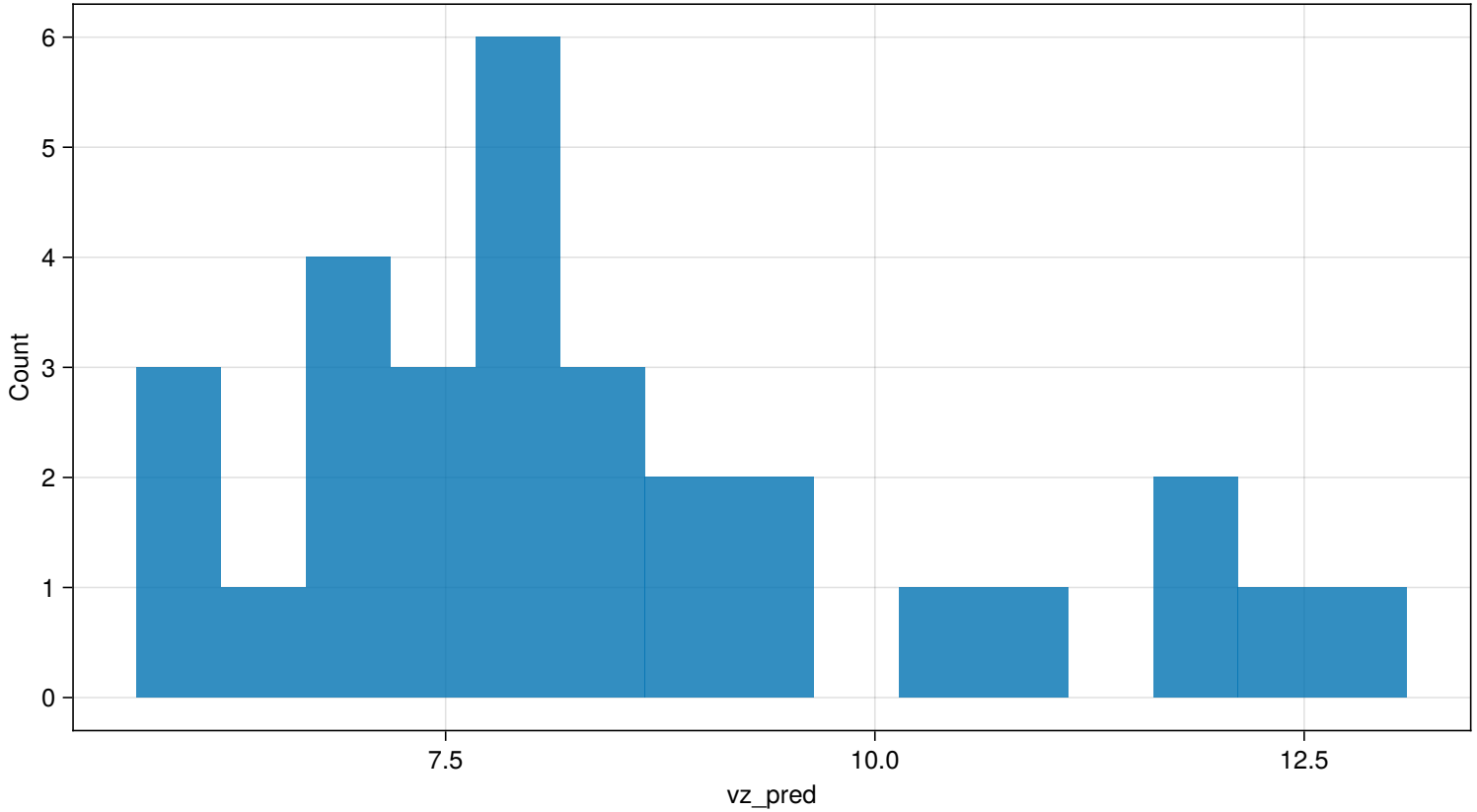

Figure 18: Parameter (vz_pred) Distribution

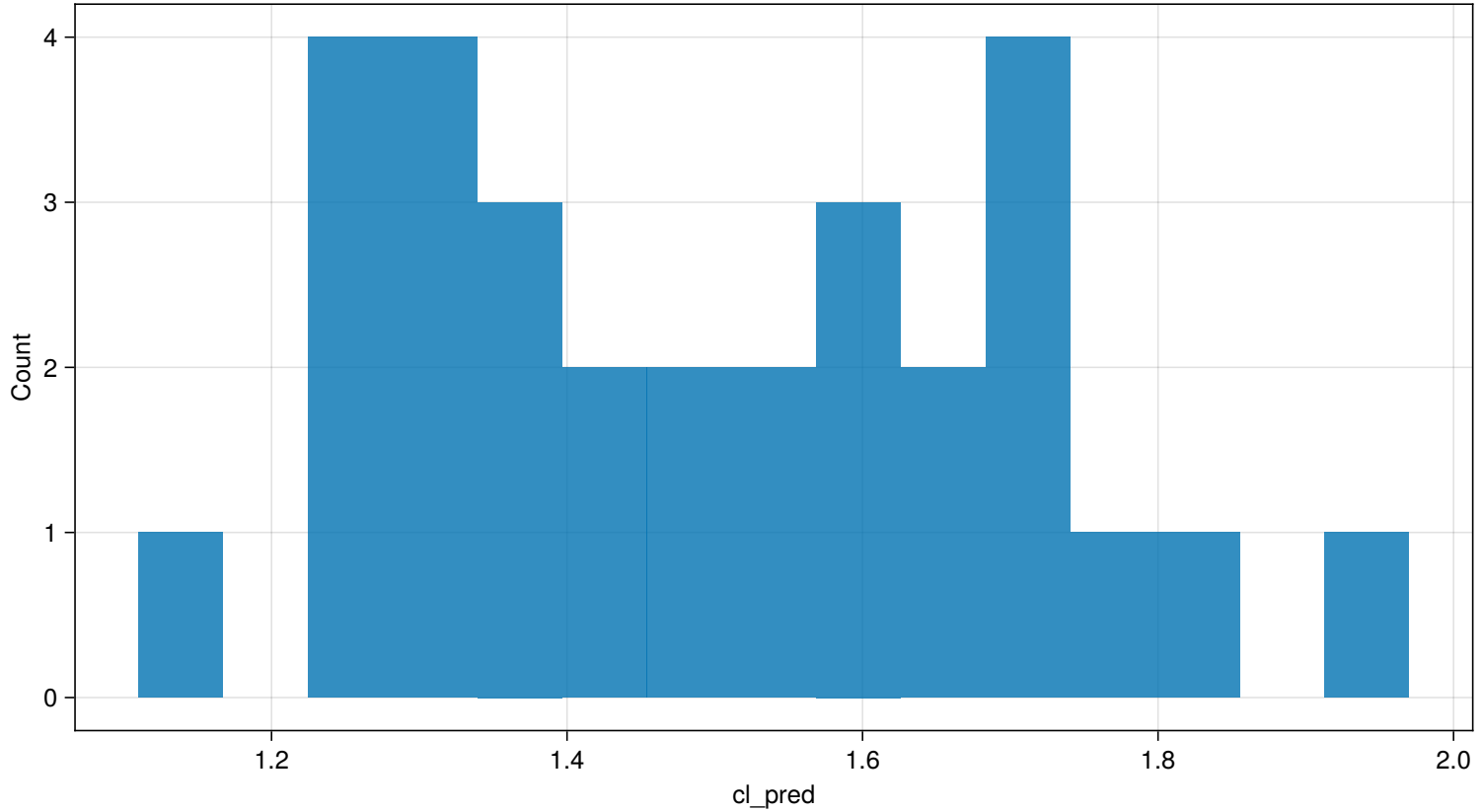

Figure 19: Parameter (cl_pred) Distribution

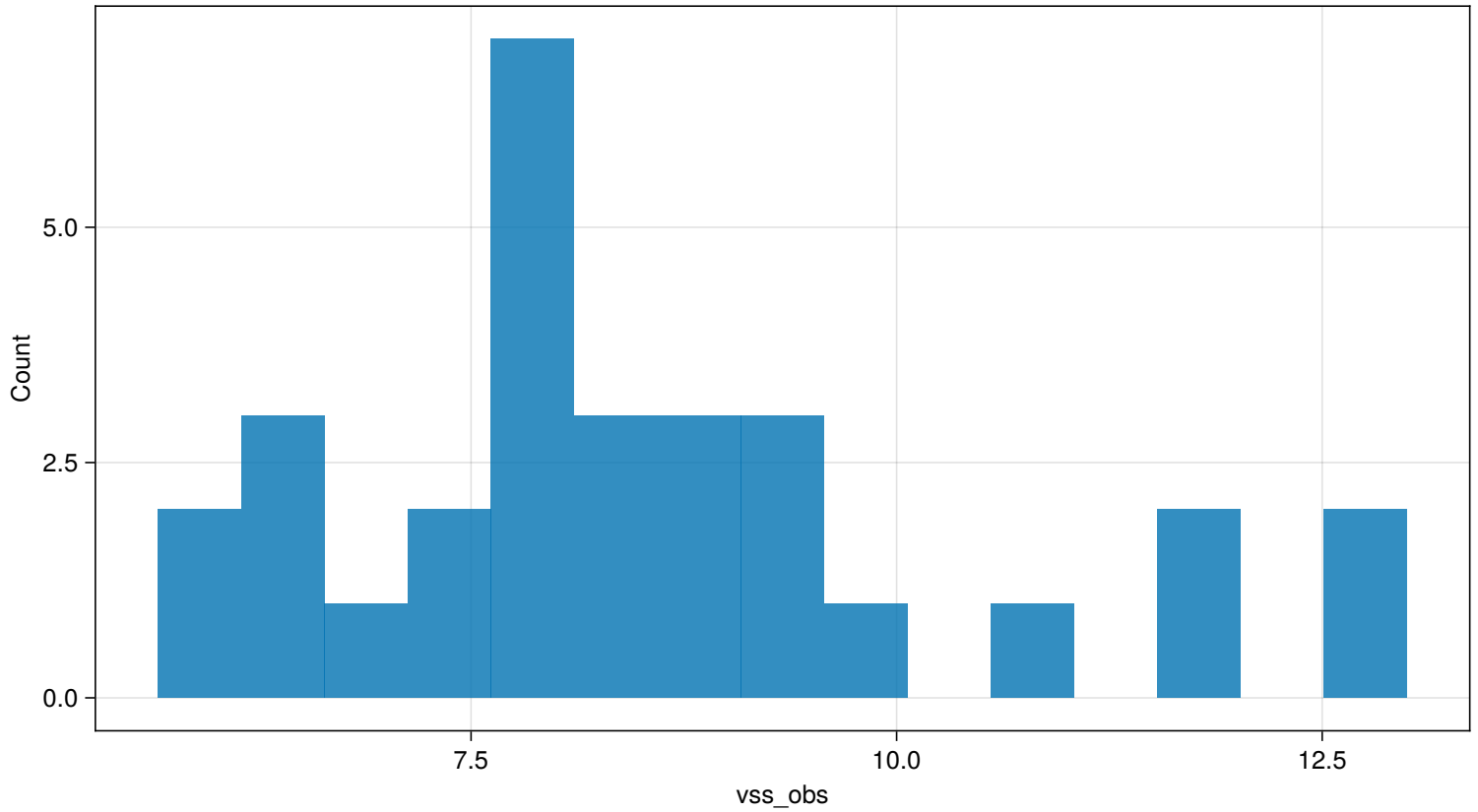

Figure 20: Parameter (vss_obs) Distribution

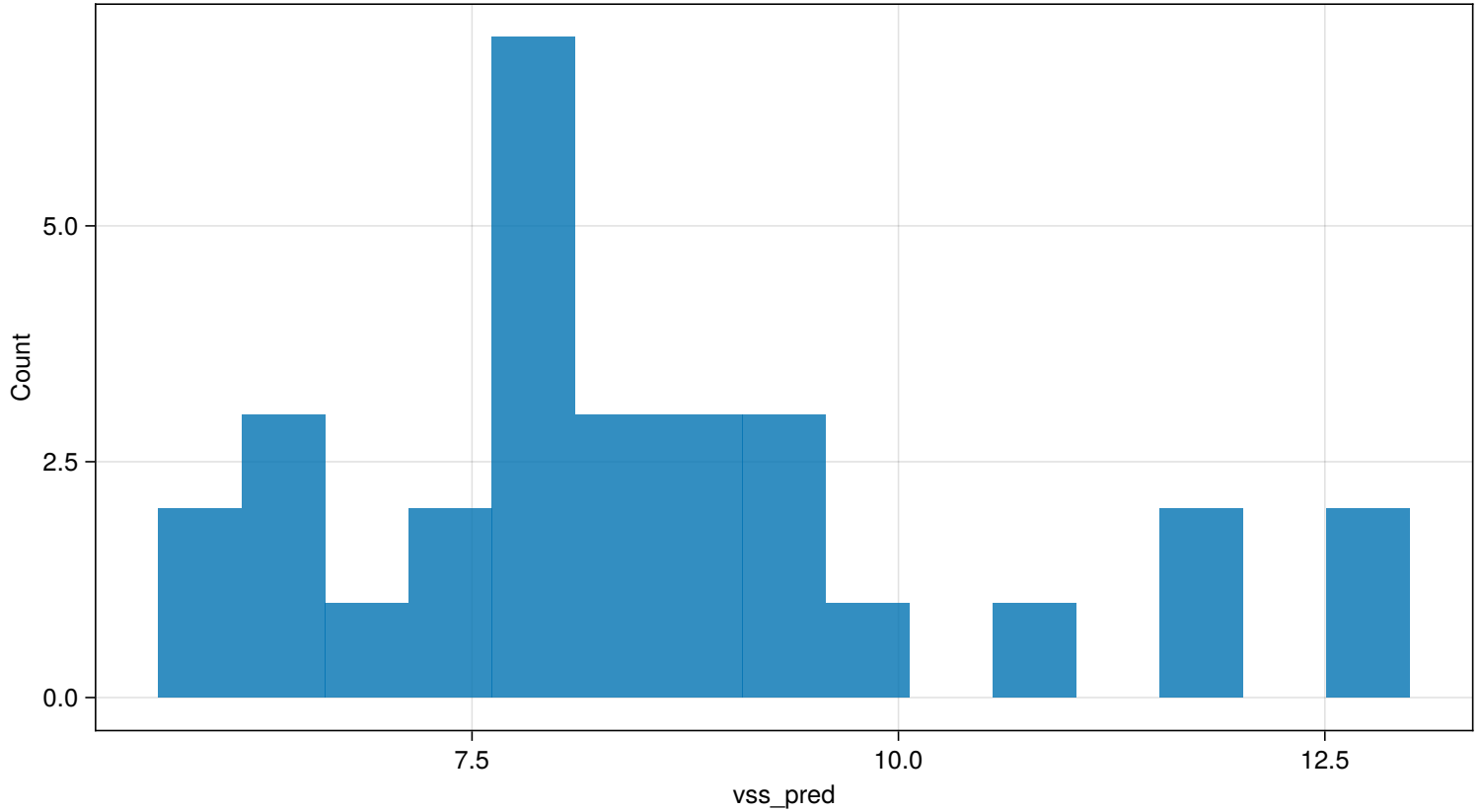

Figure 21: Parameter (vss_pred) Distribution

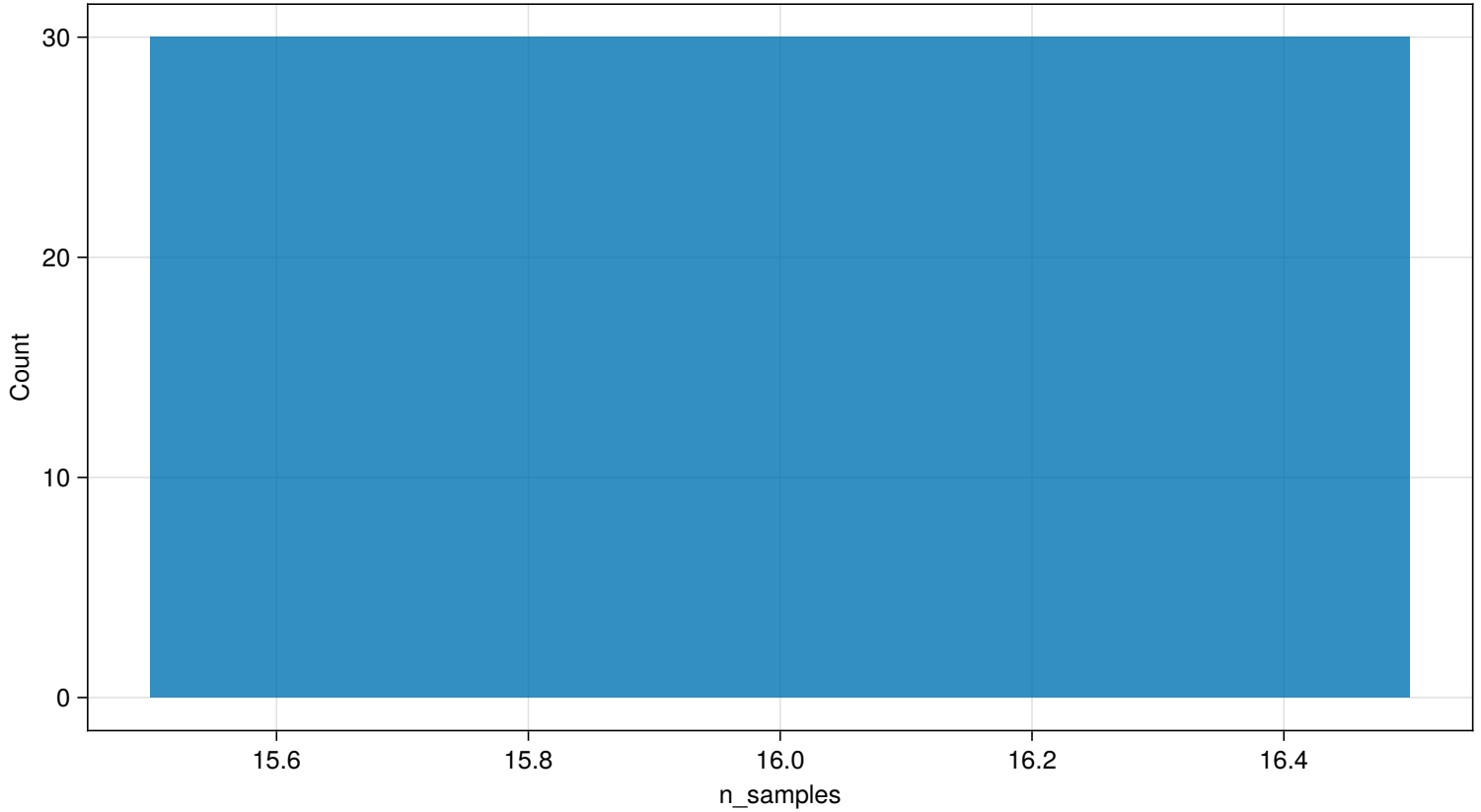

Figure 22: Parameter (n_samples) Distribution

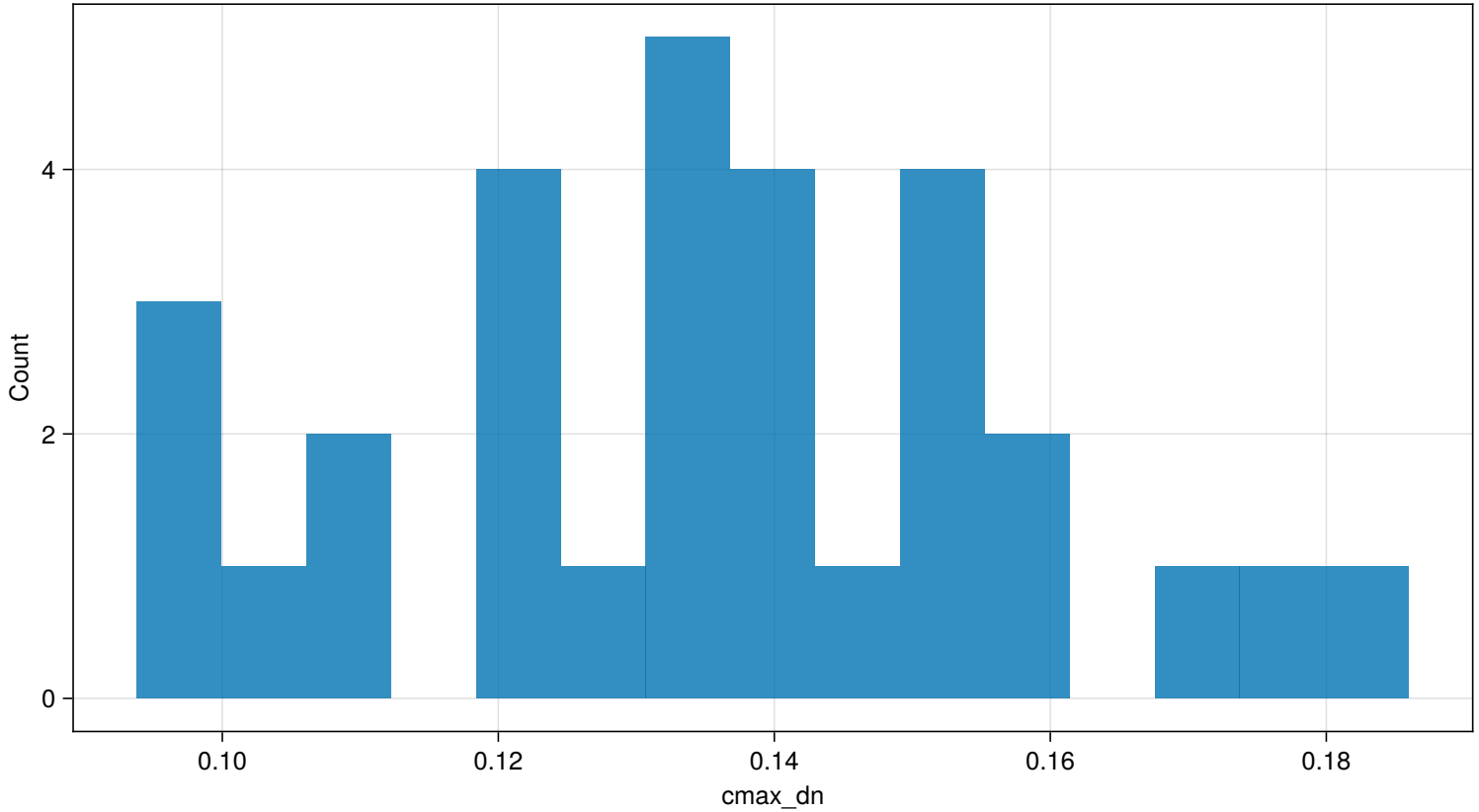

Figure 23: Parameter (cmax_dn) Distribution

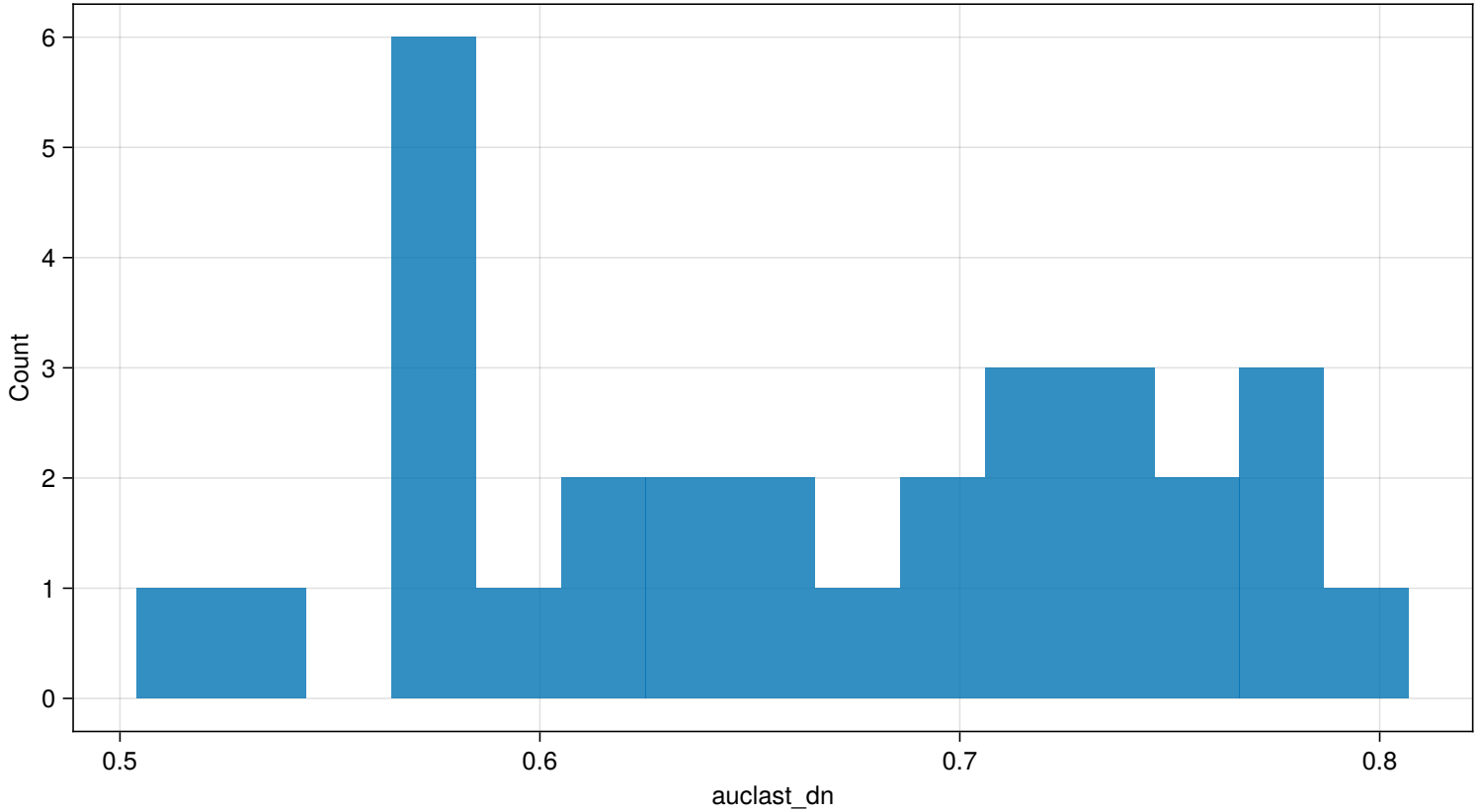

Figure 24: Parameter (auclast_dn) Distribution

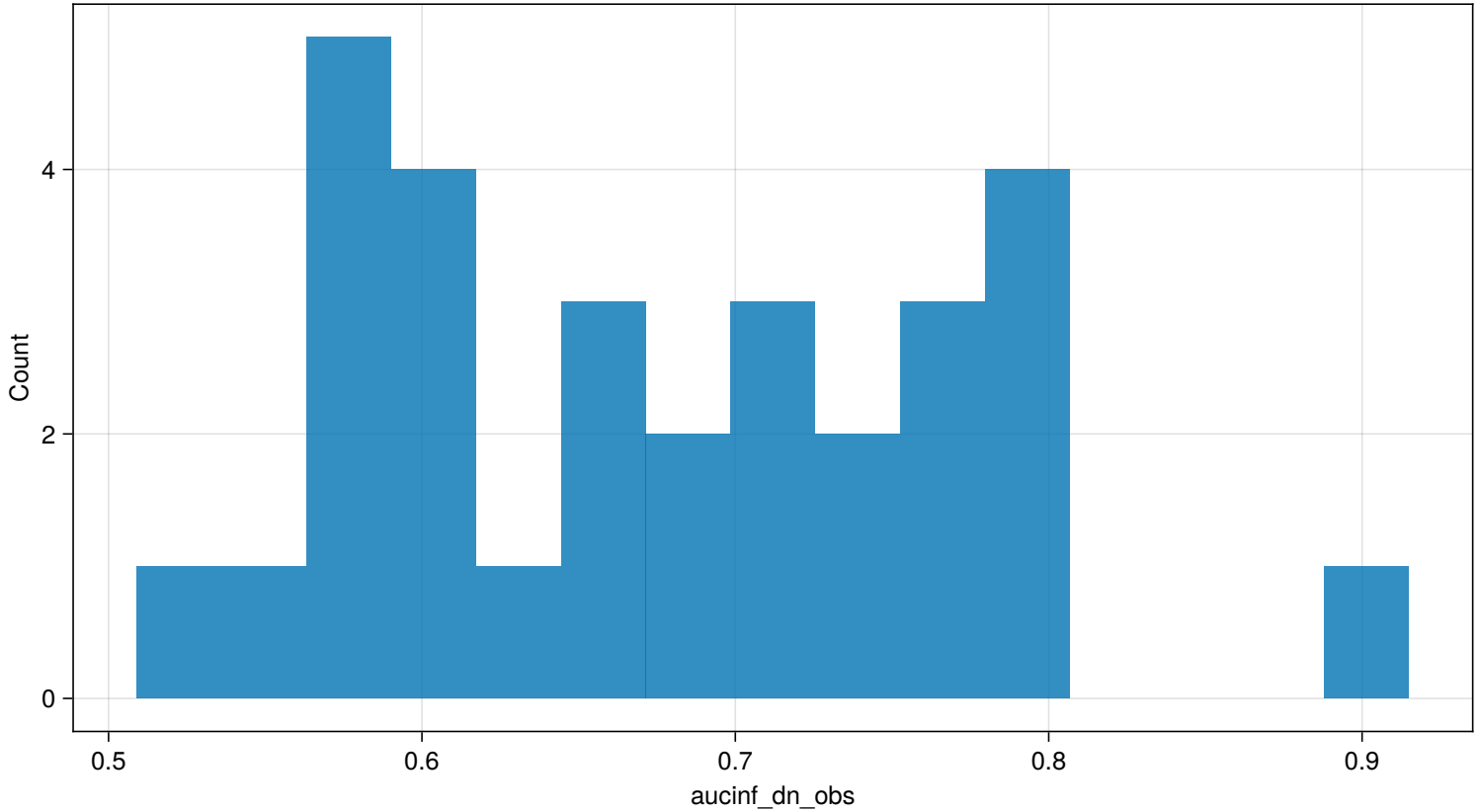

Figure 25: Parameter (aucinf_dn_obs) Distribution

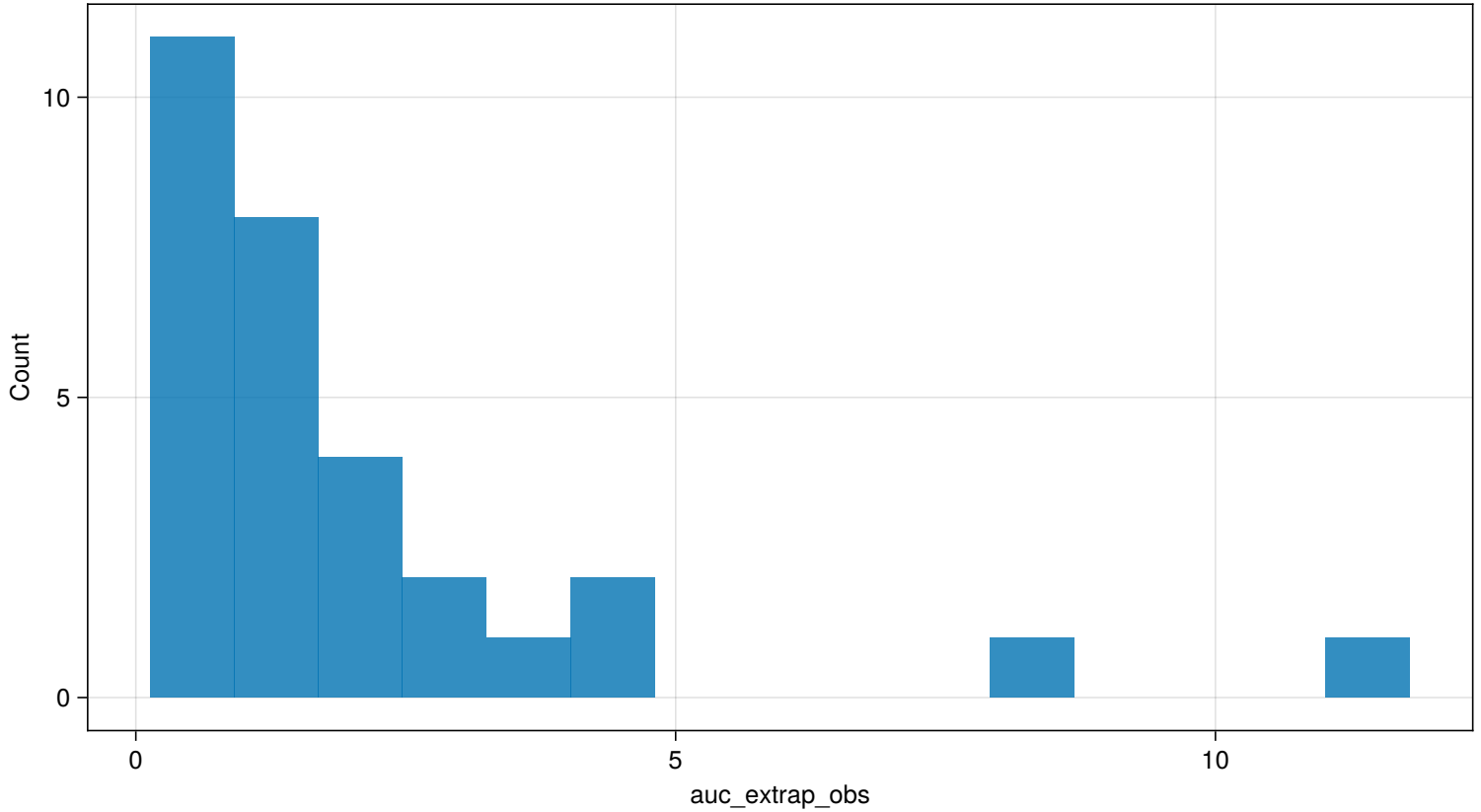

Figure 26: Parameter (auc_extrap_obs) Distribution

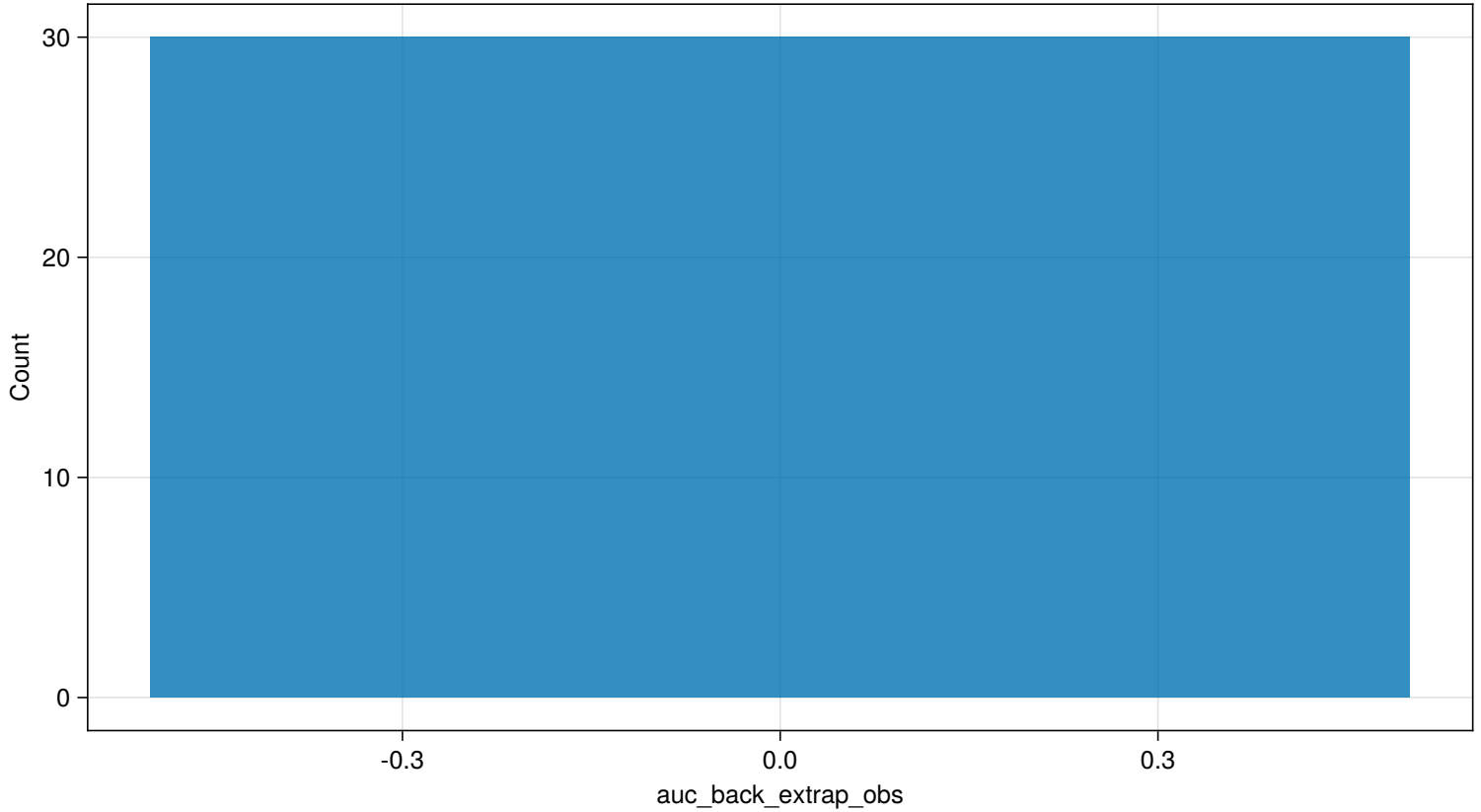

Figure 27: Parameter (auc_back_extrap_obs) Distribution

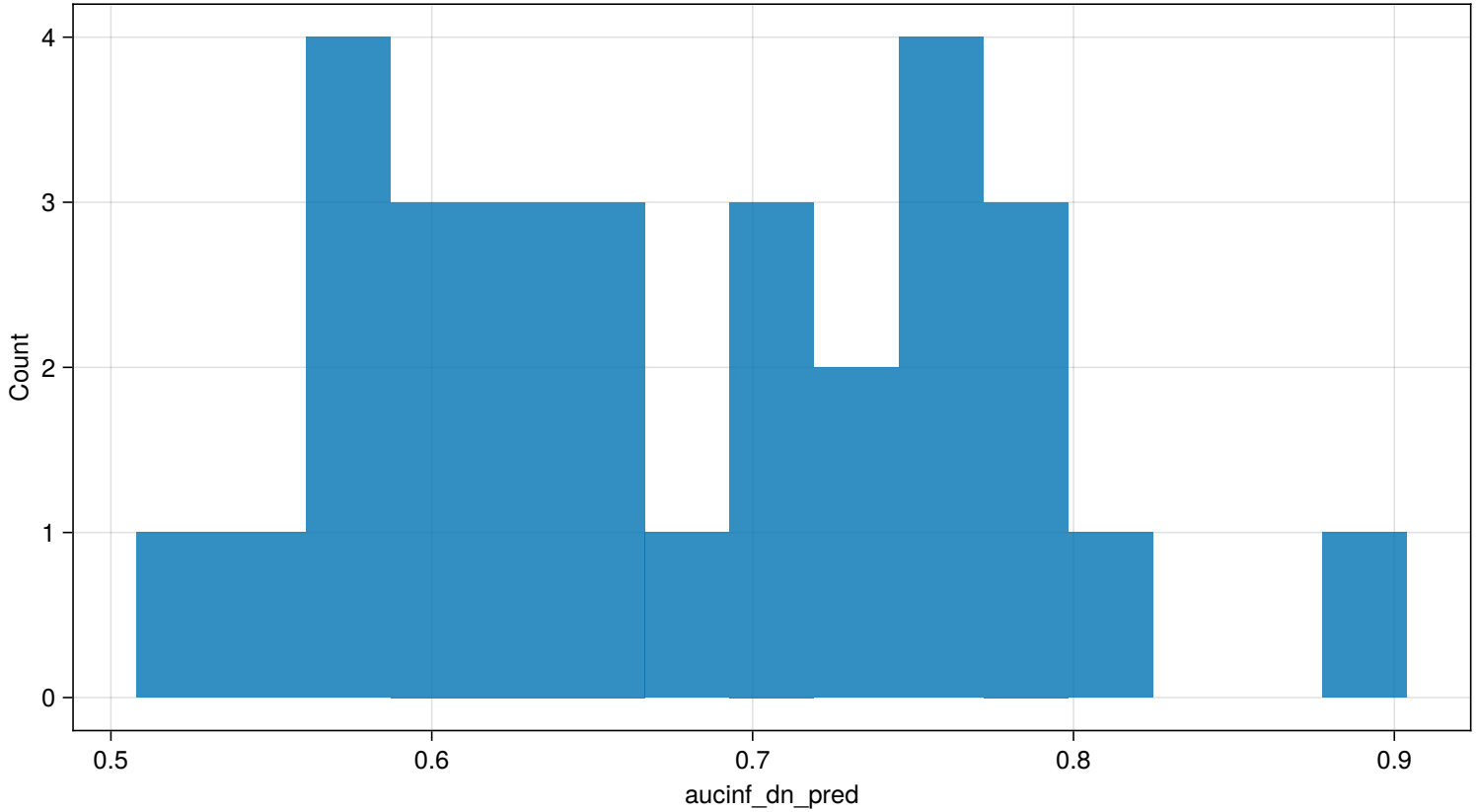

Figure 28: Parameter (aucinf_dn_pred) Distribution

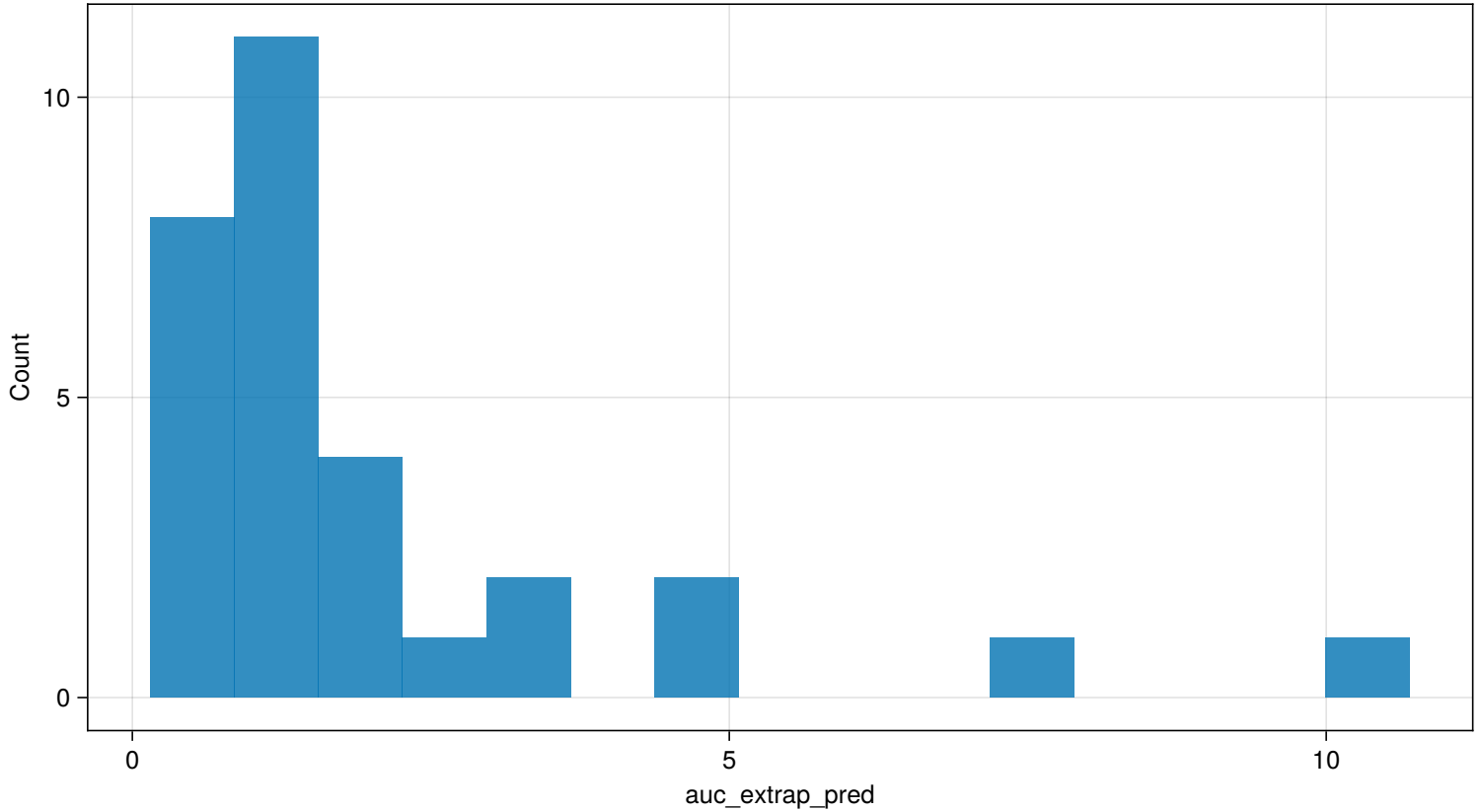

Figure 29: Parameter (auc_extrap_pred) Distribution

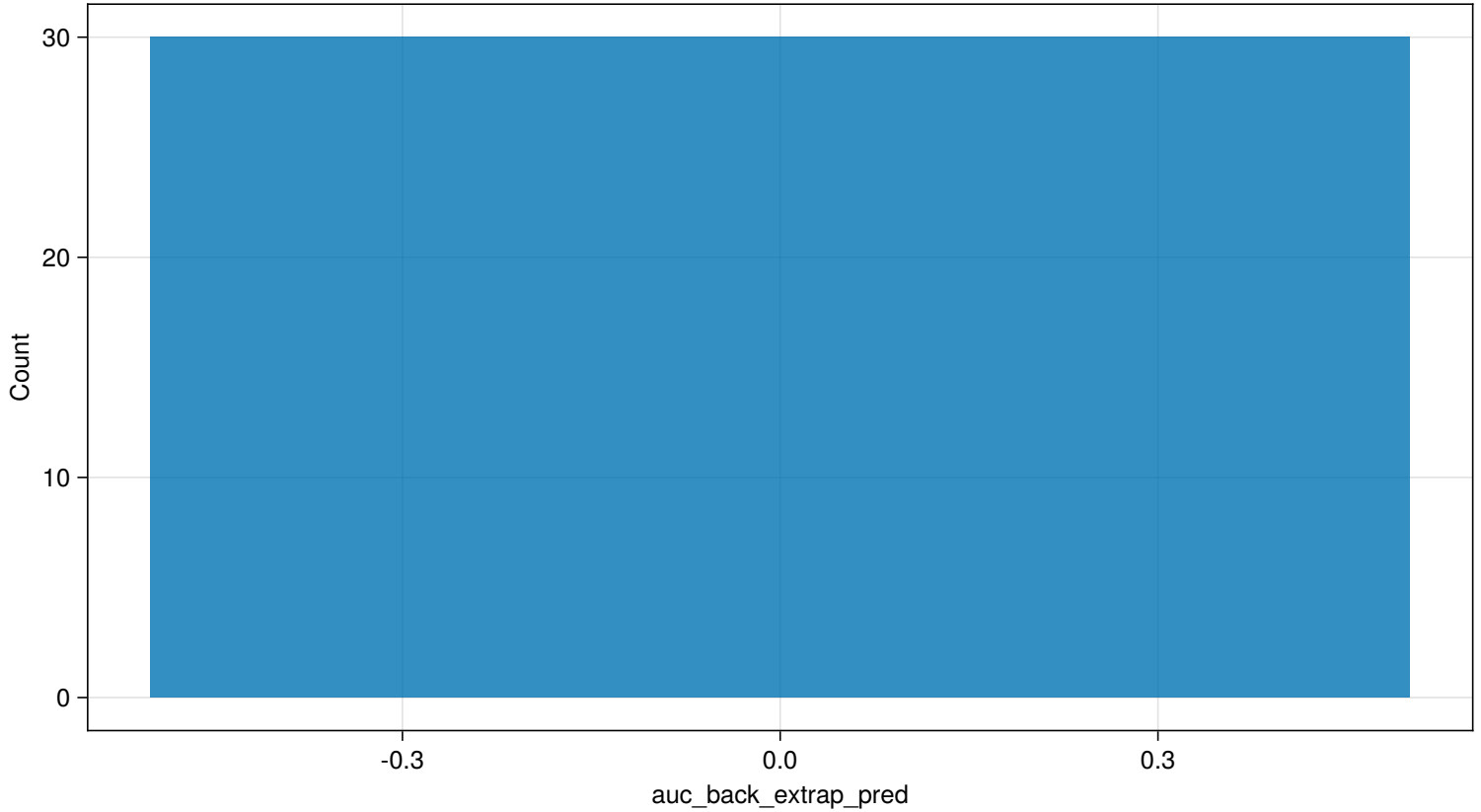

Figure 30: Parameter (auc_back_extrap_pred) Distribution

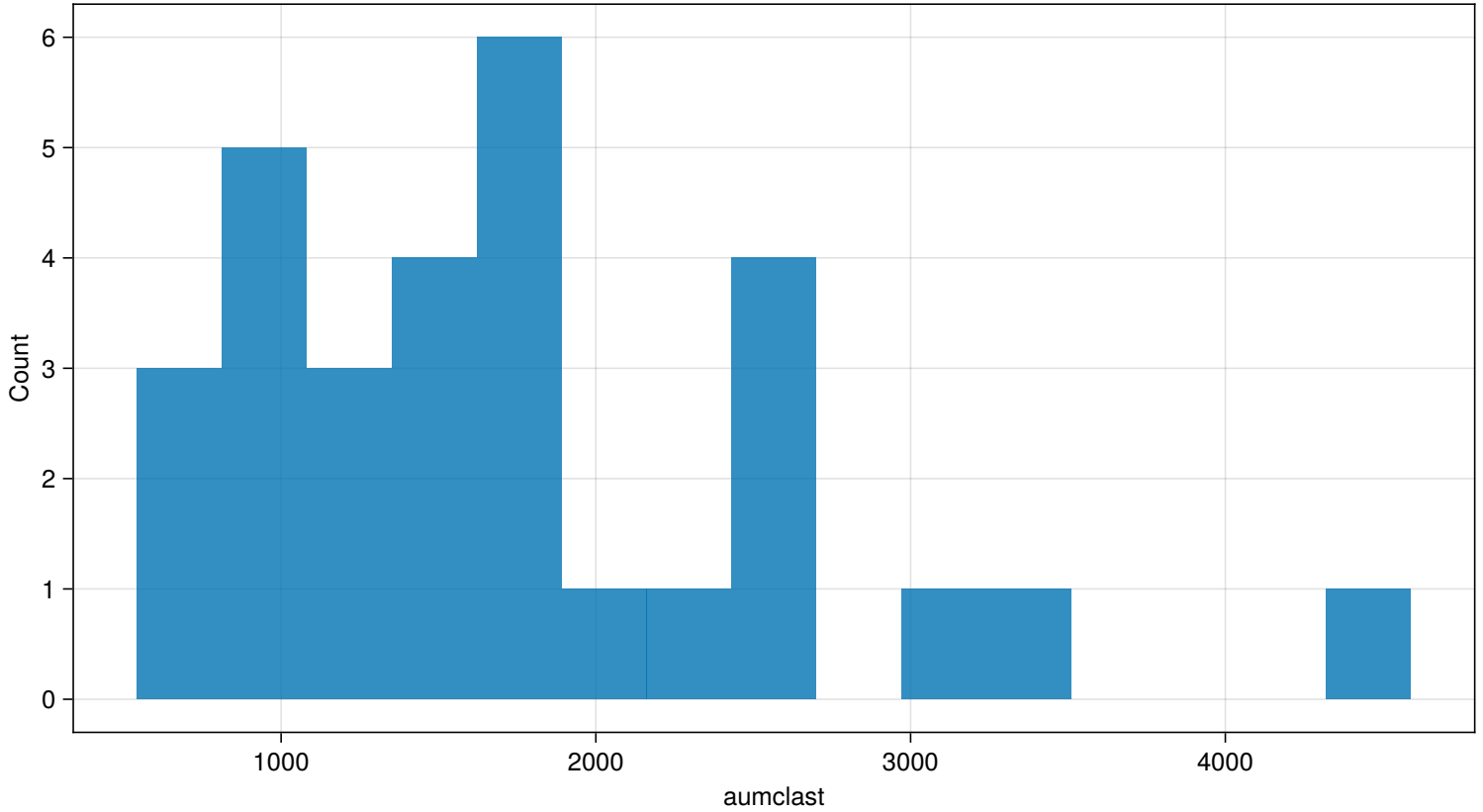

Figure 31: Parameter (aumclast) Distribution

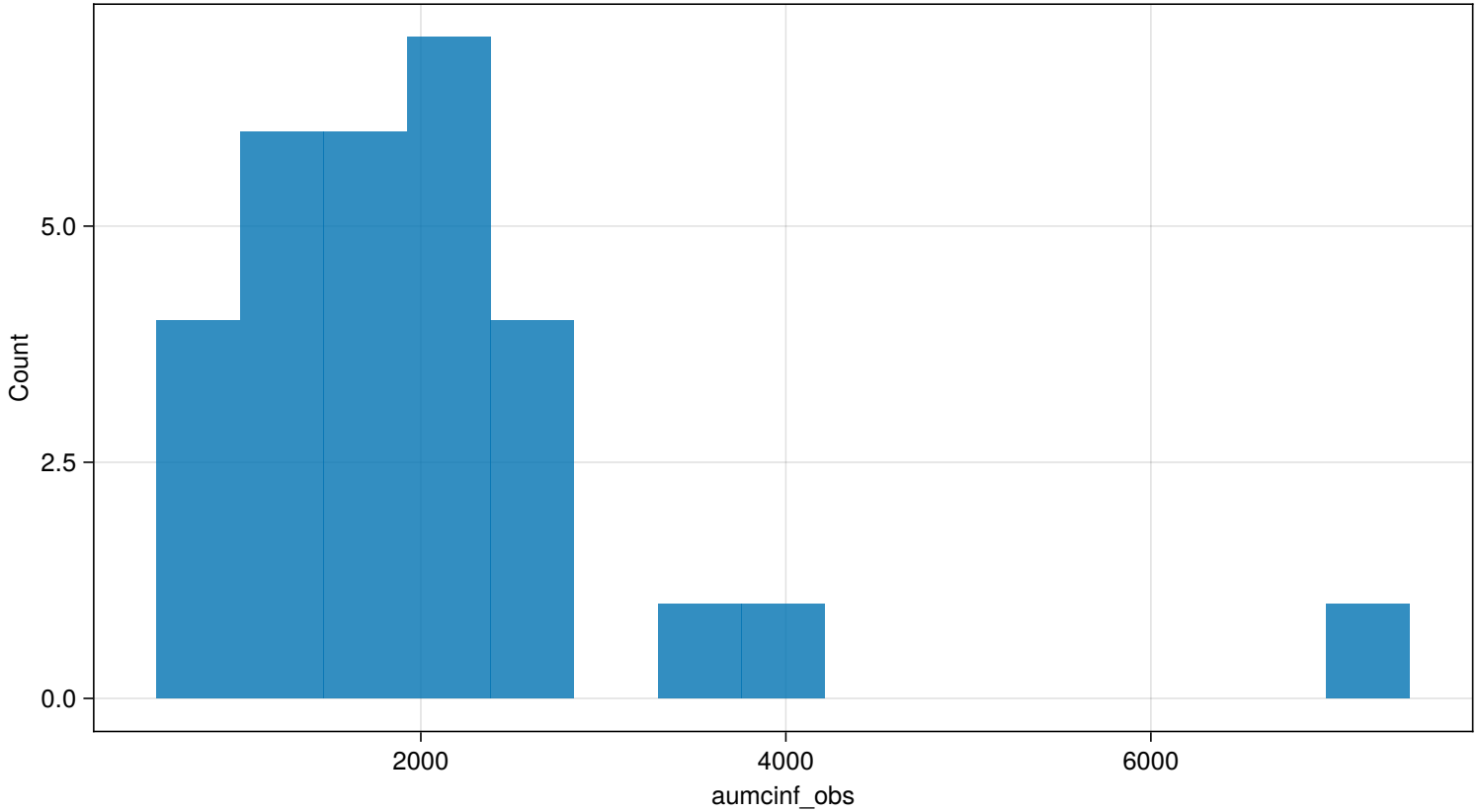

Figure 32: Parameter (aumcinf_obs) Distribution

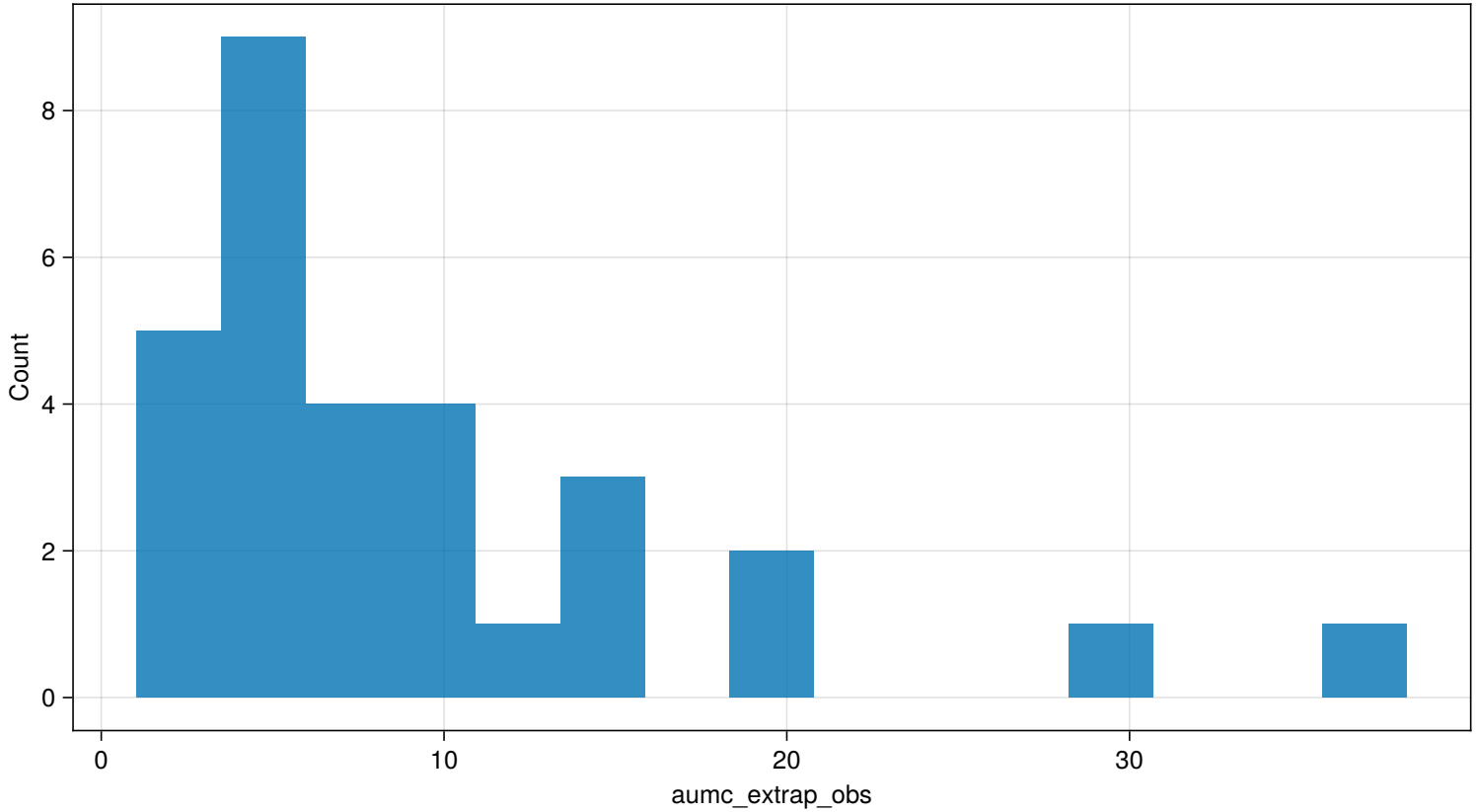

Figure 33: Parameter (aumc_extrap_obs) Distribution

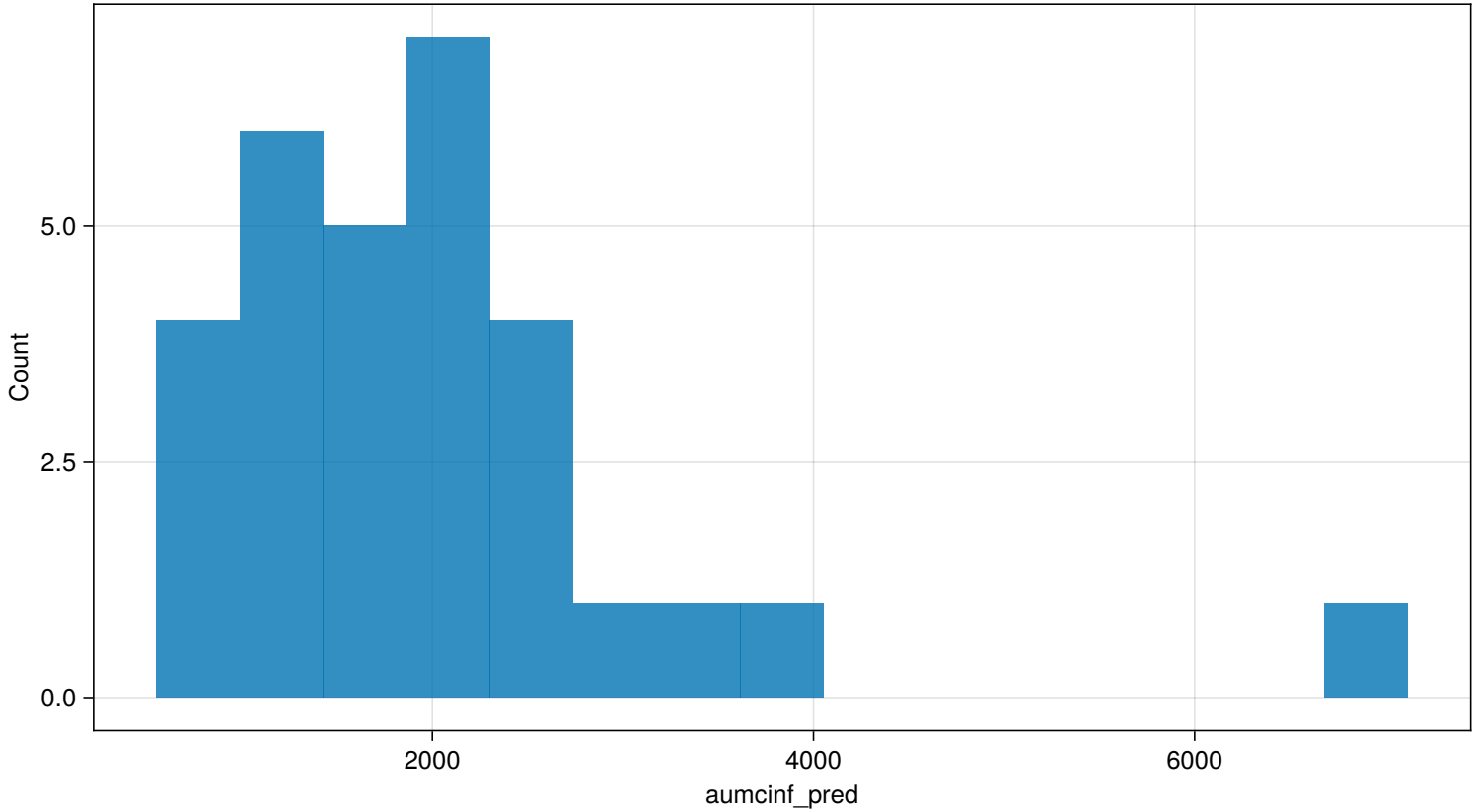

Figure 34: Parameter (aumcinf_pred) Distribution

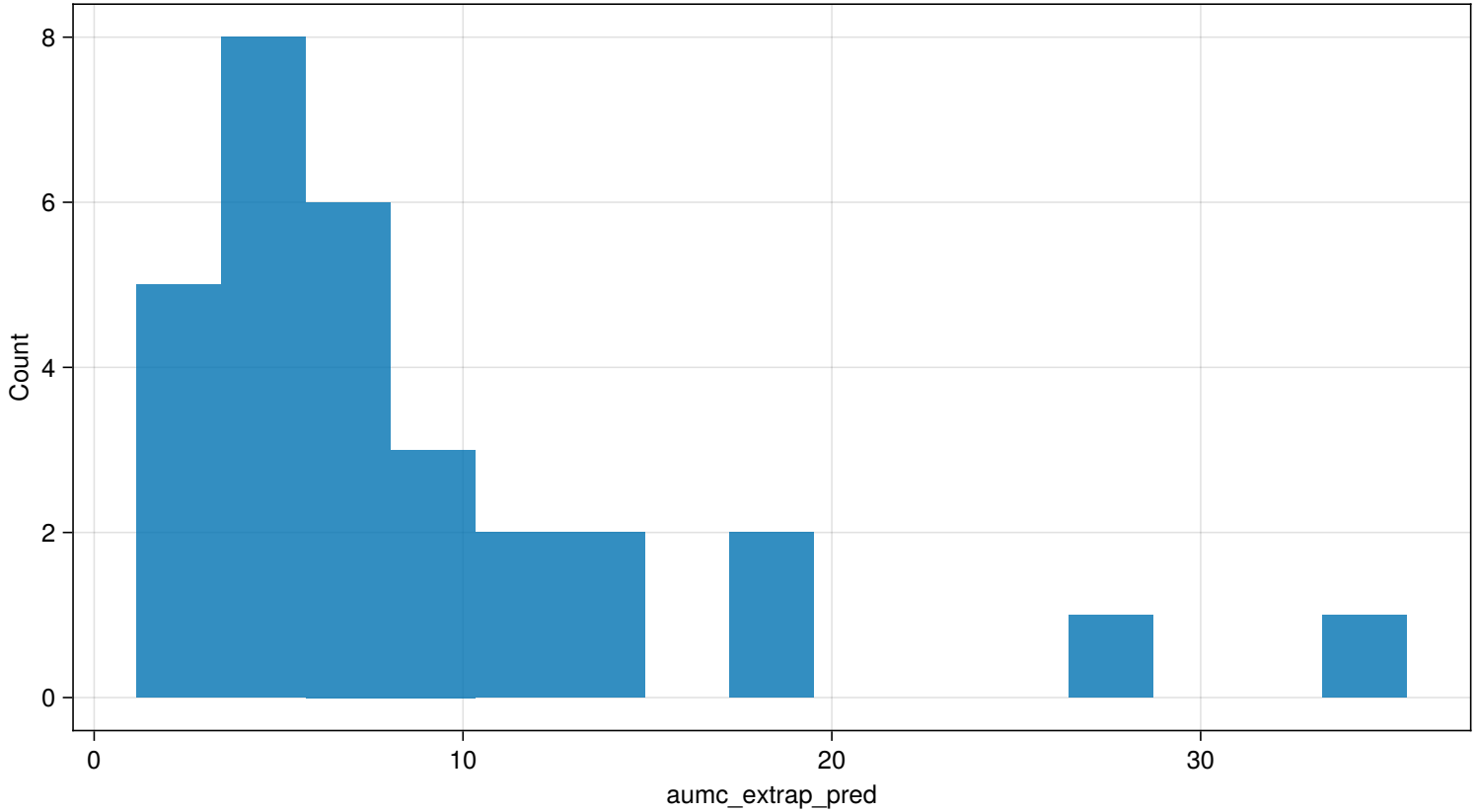

Figure 35: Parameter (aumc_extrap_pred) Distribution

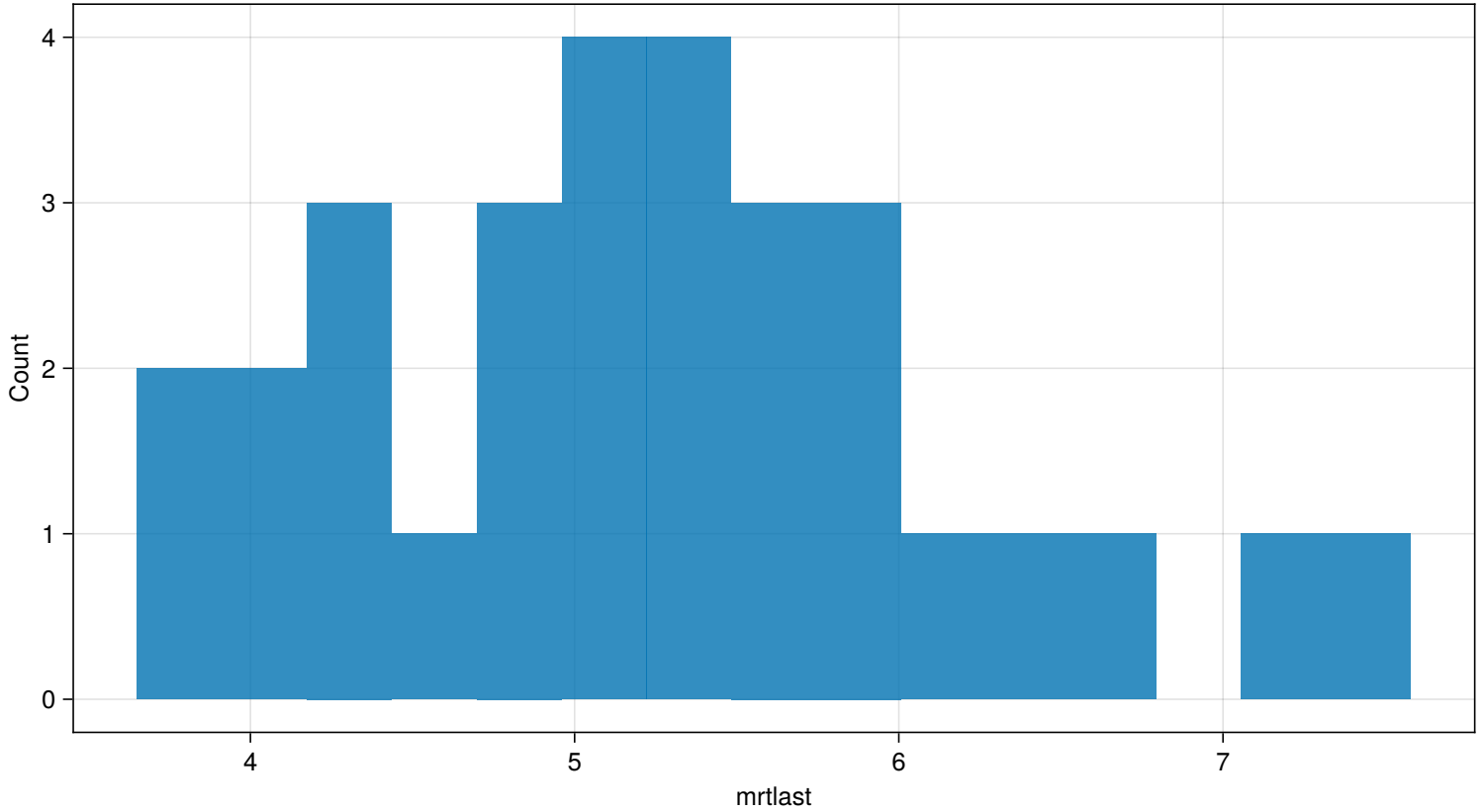

Figure 36: Parameter (mrtlast) Distribution

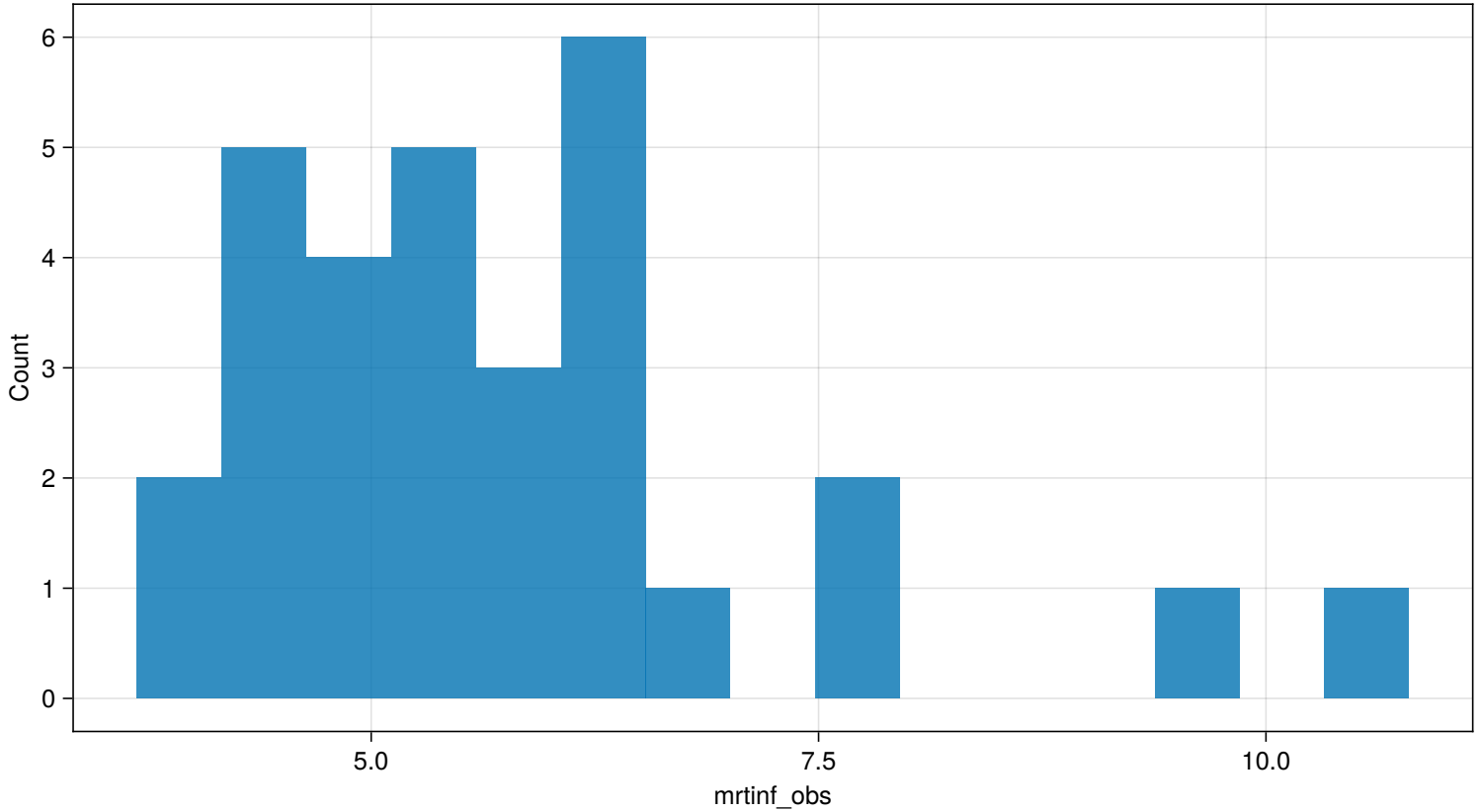

Figure 37: Parameter (mrtinf_obs) Distribution

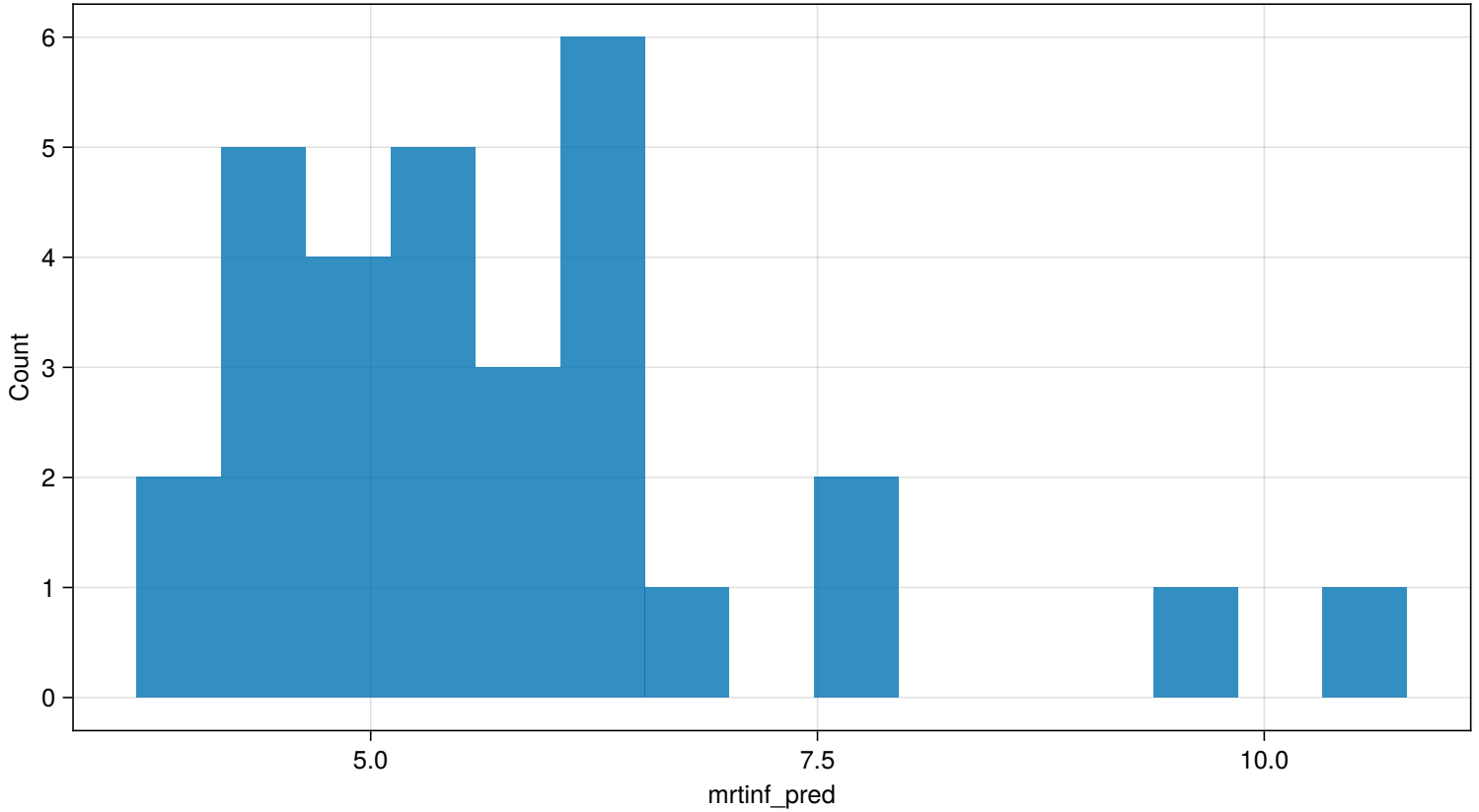

Figure 38: Parameter (mrtinf_pred) Distribution

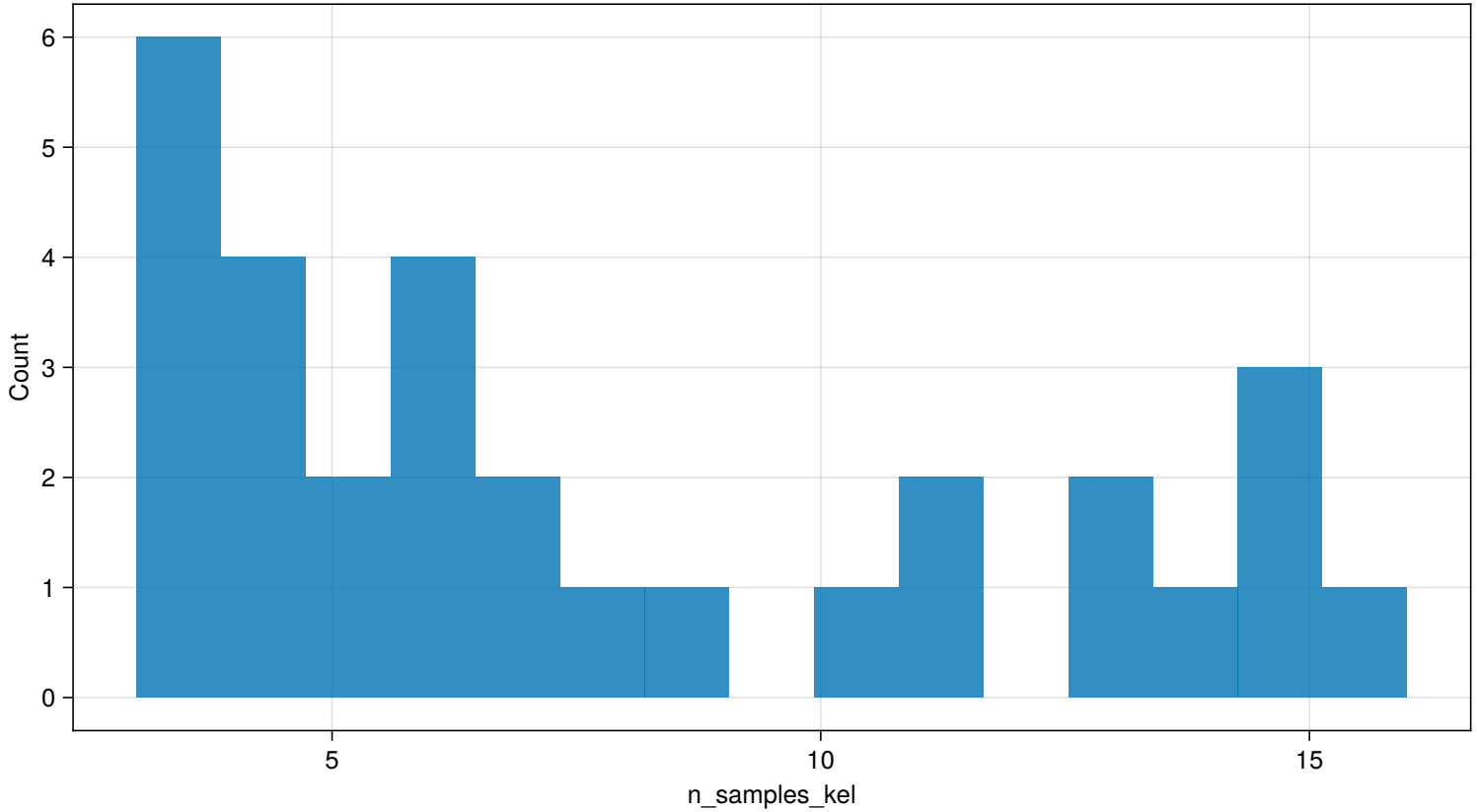

Figure 39: Parameter (n_samples_kel) Distribution

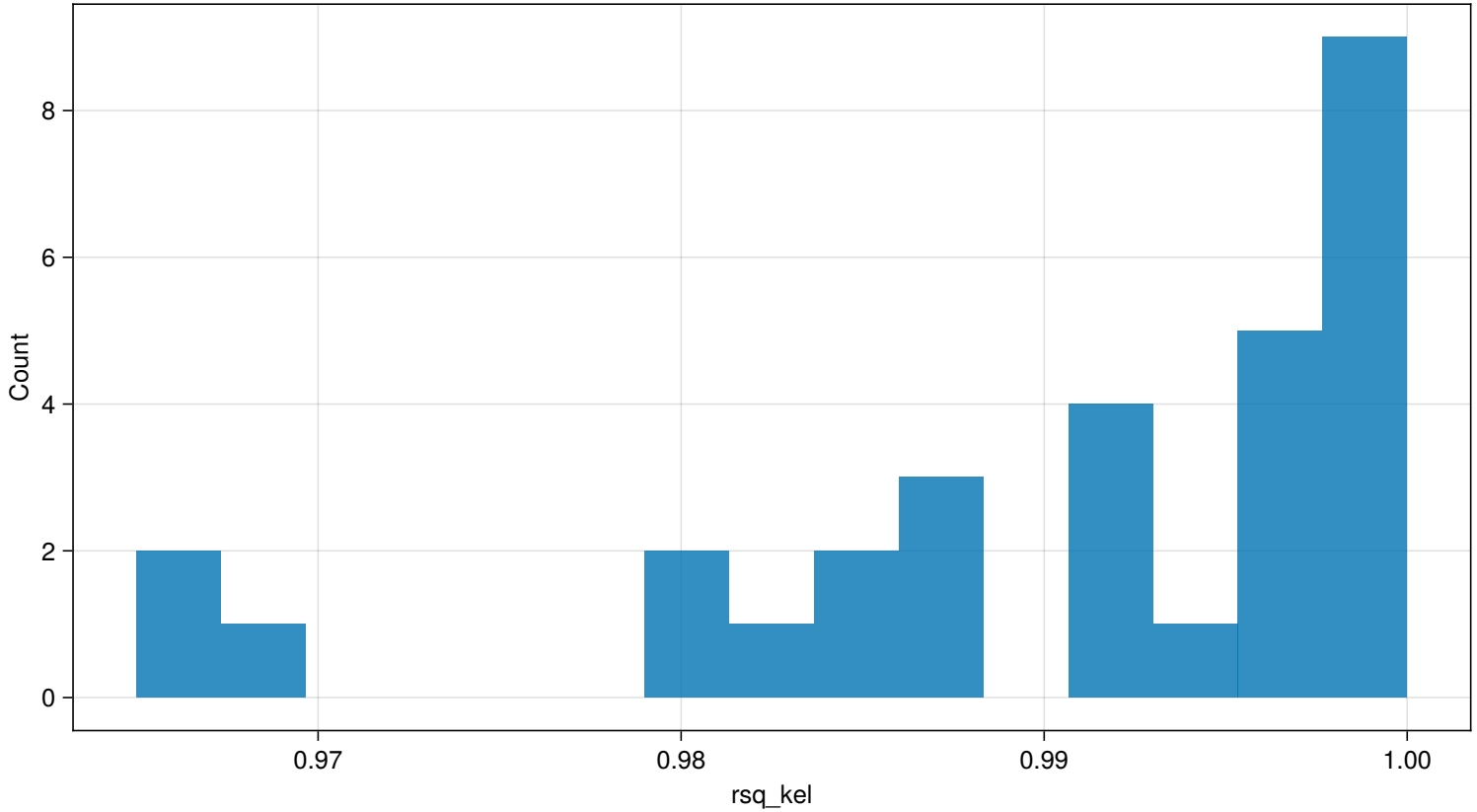

Figure 40: Parameter (rsq_kel) Distribution

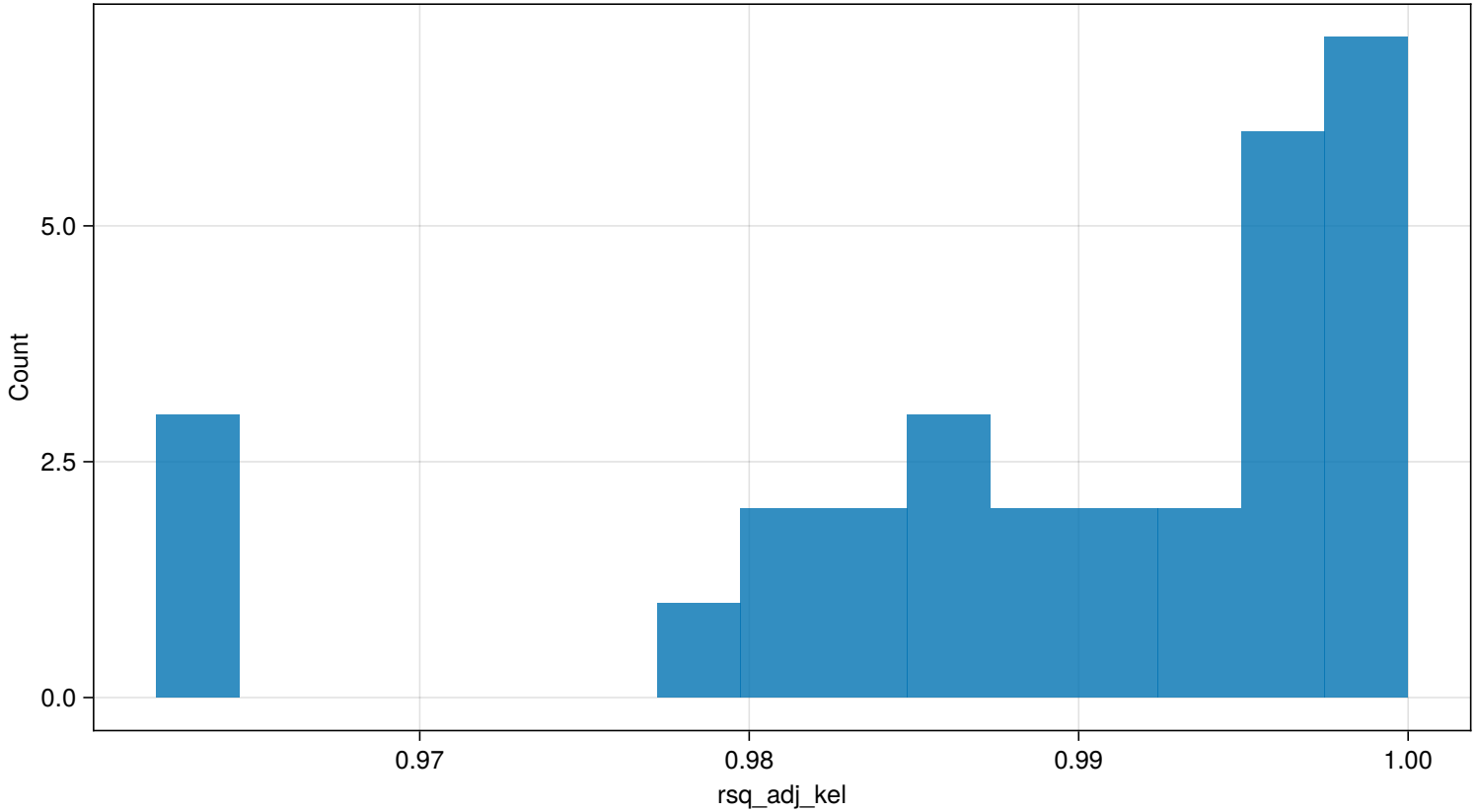

Figure 41: Parameter (rsq_adj_kel) Distribution

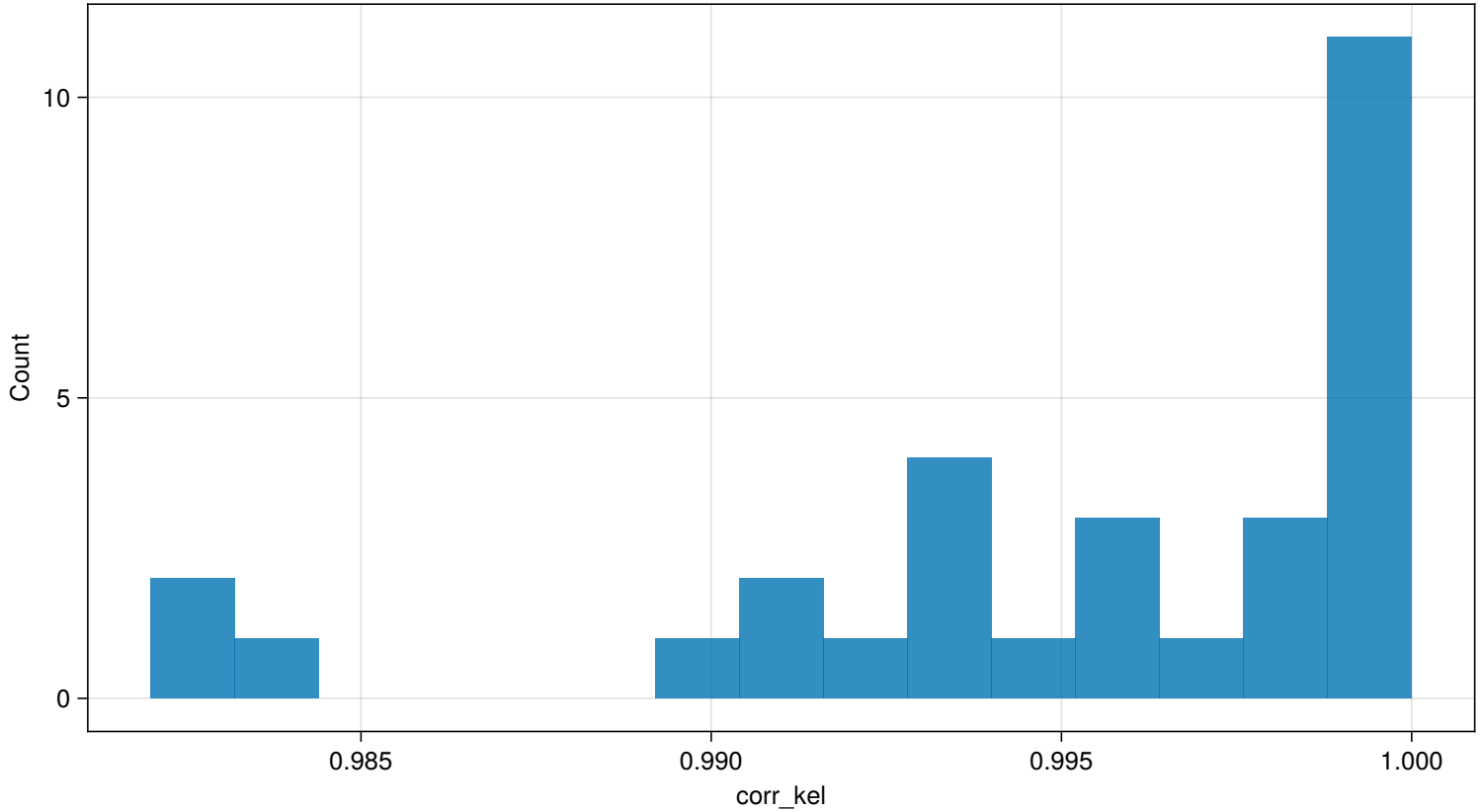

Figure 42: Parameter (corr_kel) Distribution

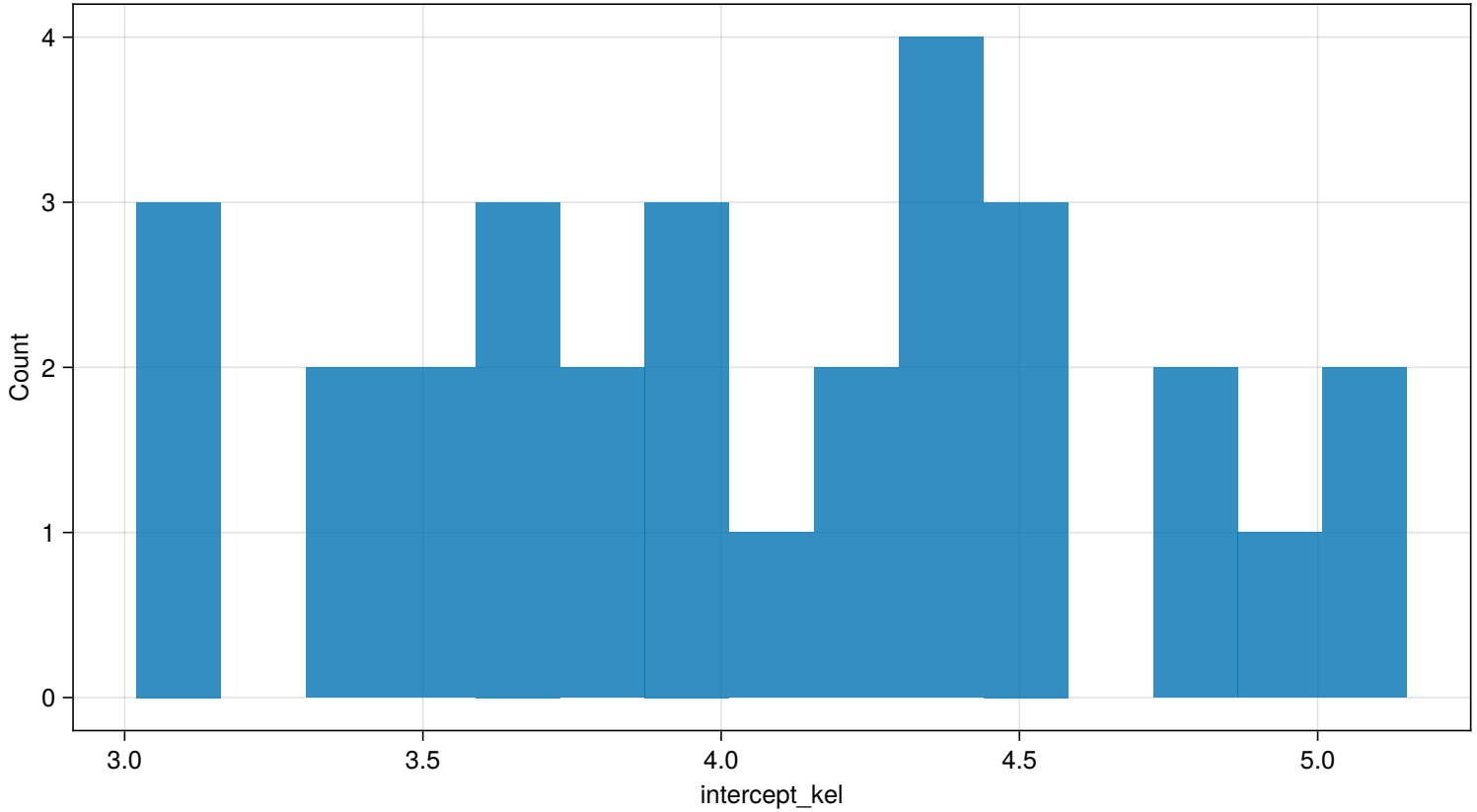

Figure 43: Parameter (intercept_kel) Distribution

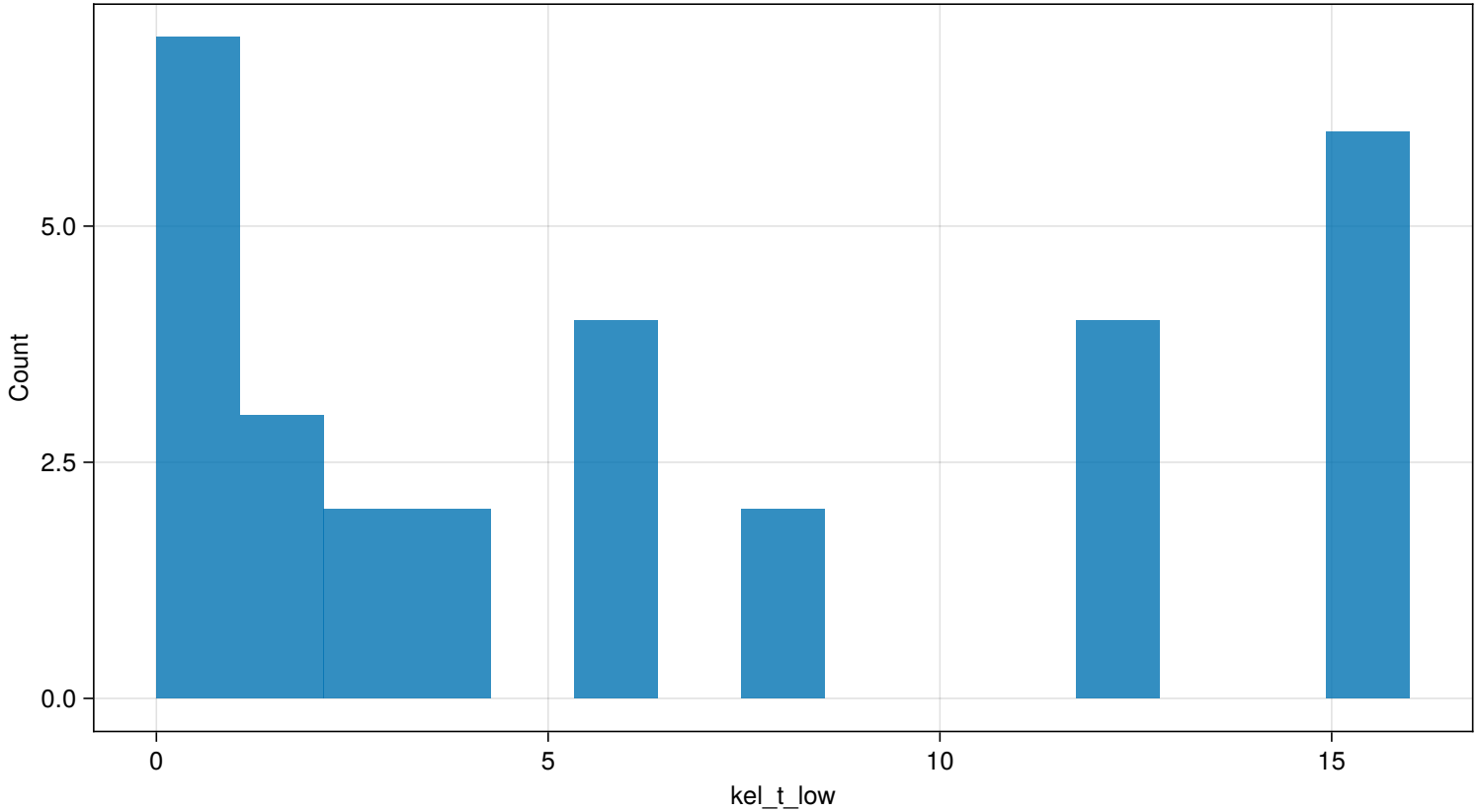

Figure 44: Parameter (kel_t_low) Distribution

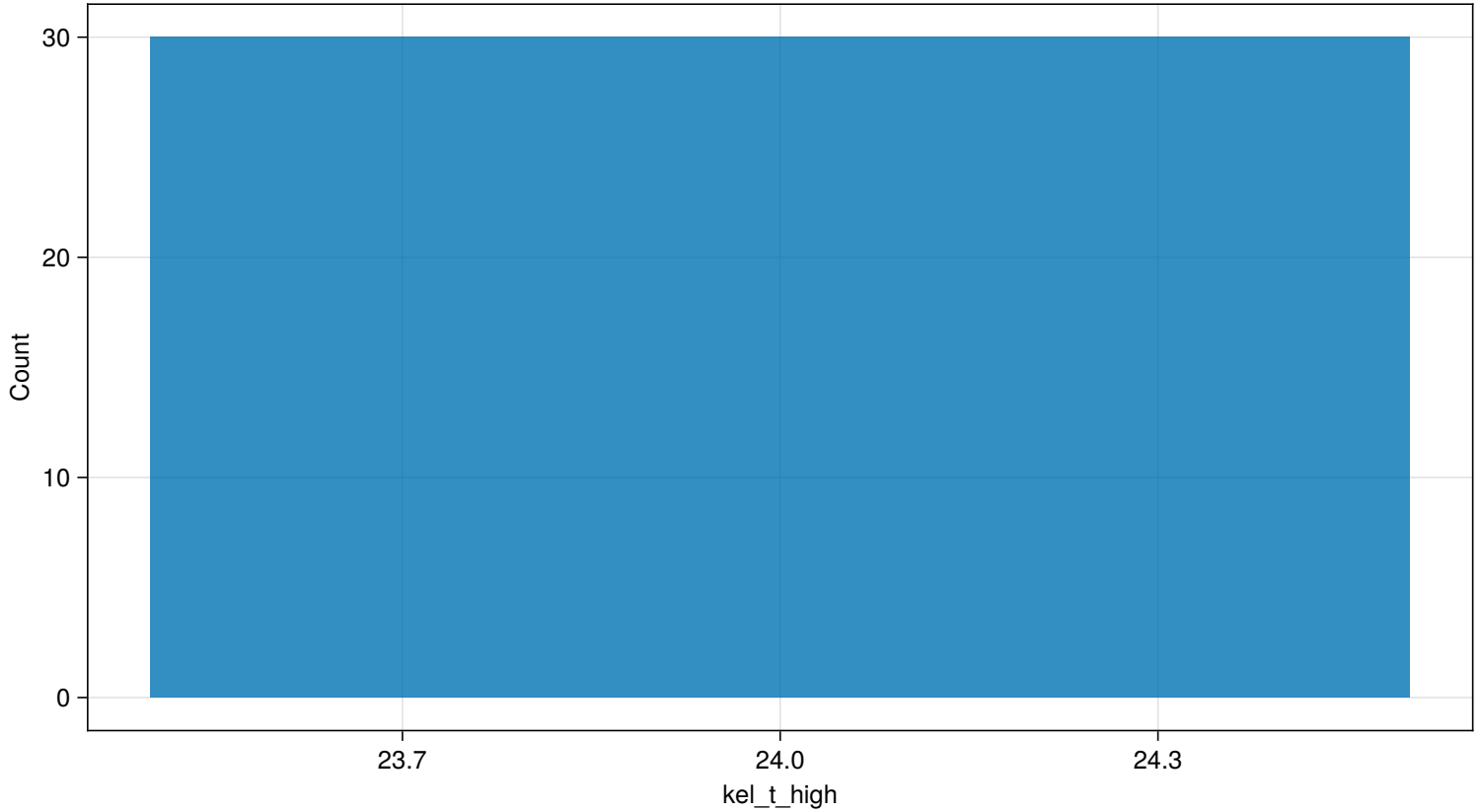

Figure 45: Parameter (kel_t_high) Distribution

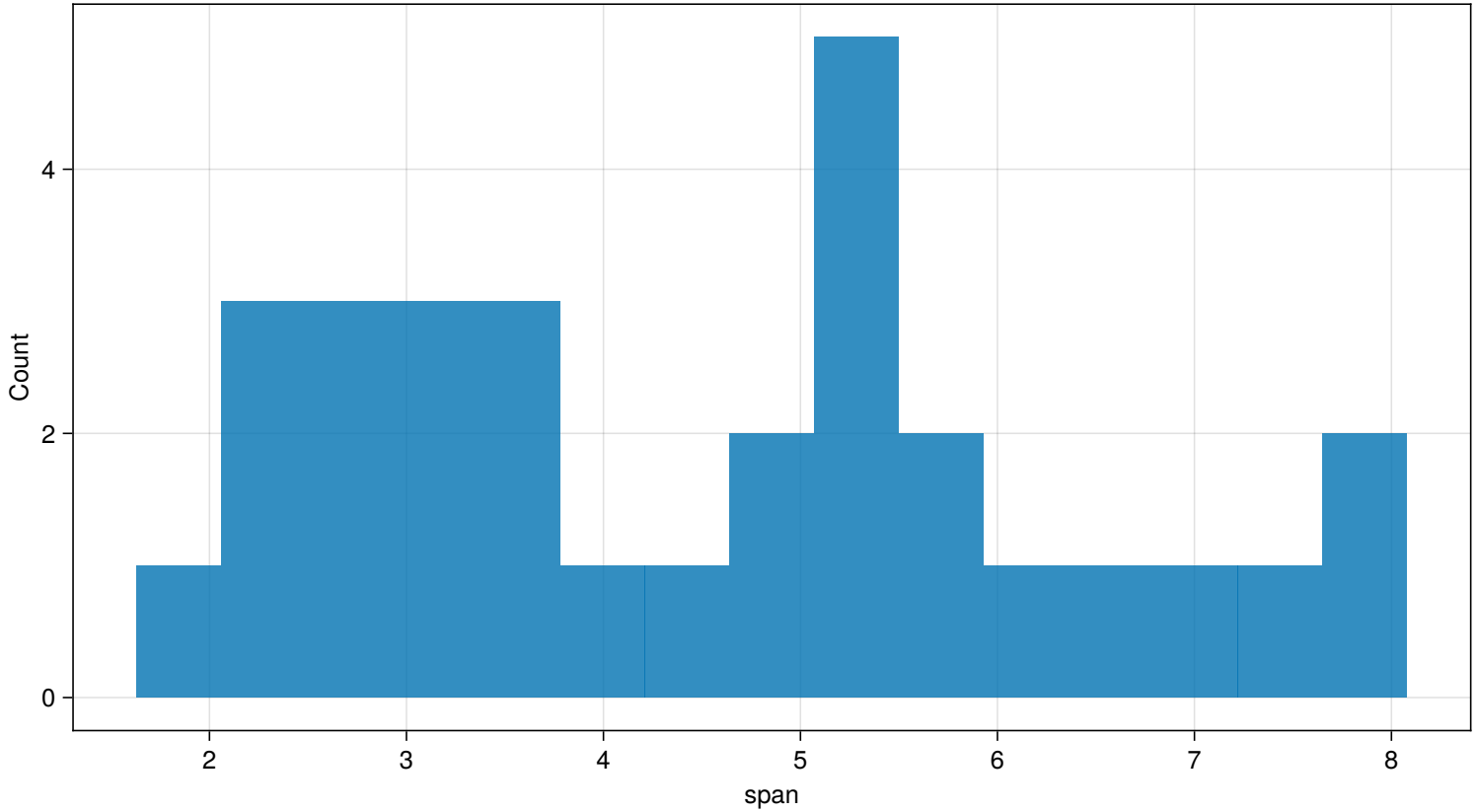

Figure 46: Parameter (span) Distribution

5 Parameters vs Group

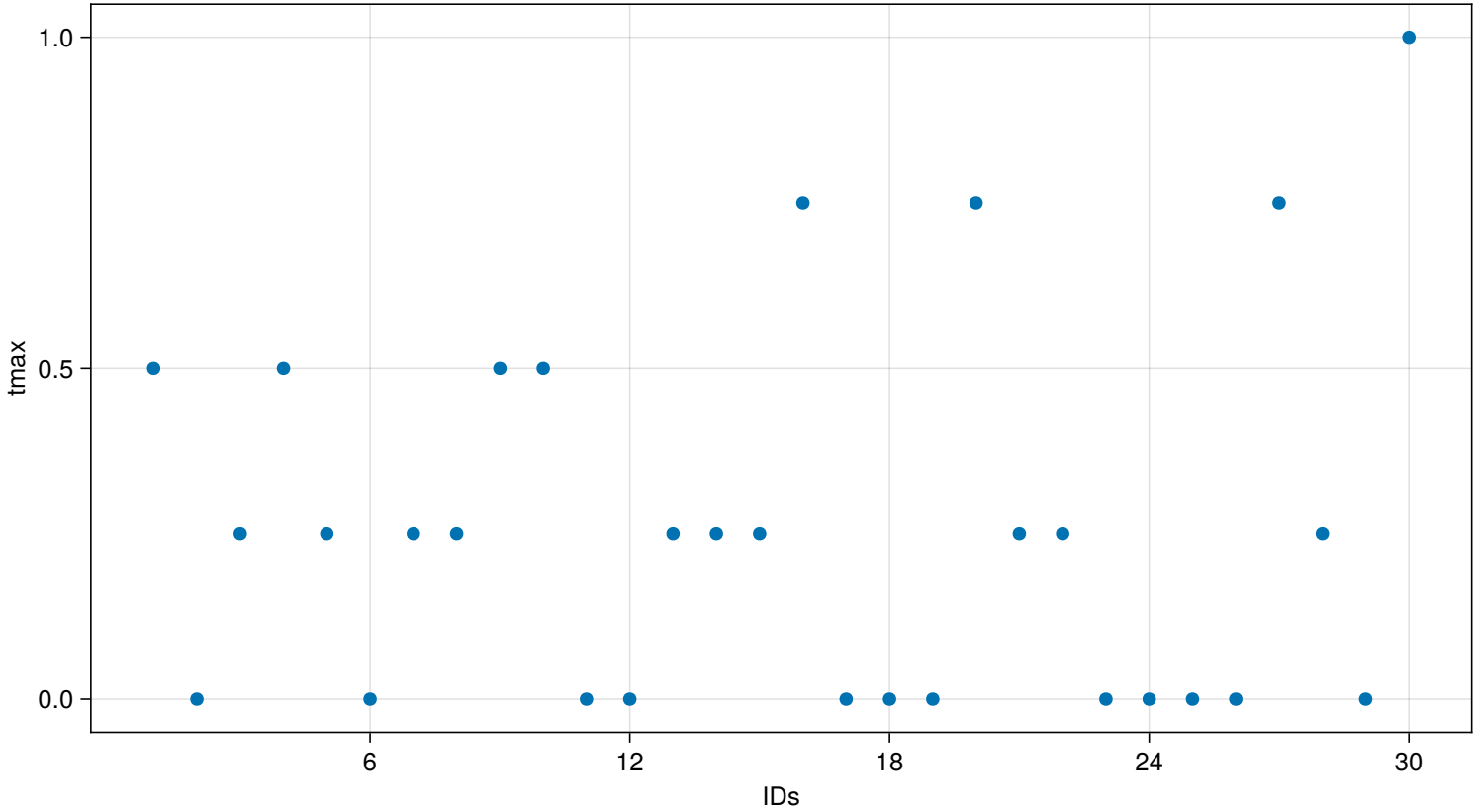

Figure 47: Parameter (tmax) vs Group

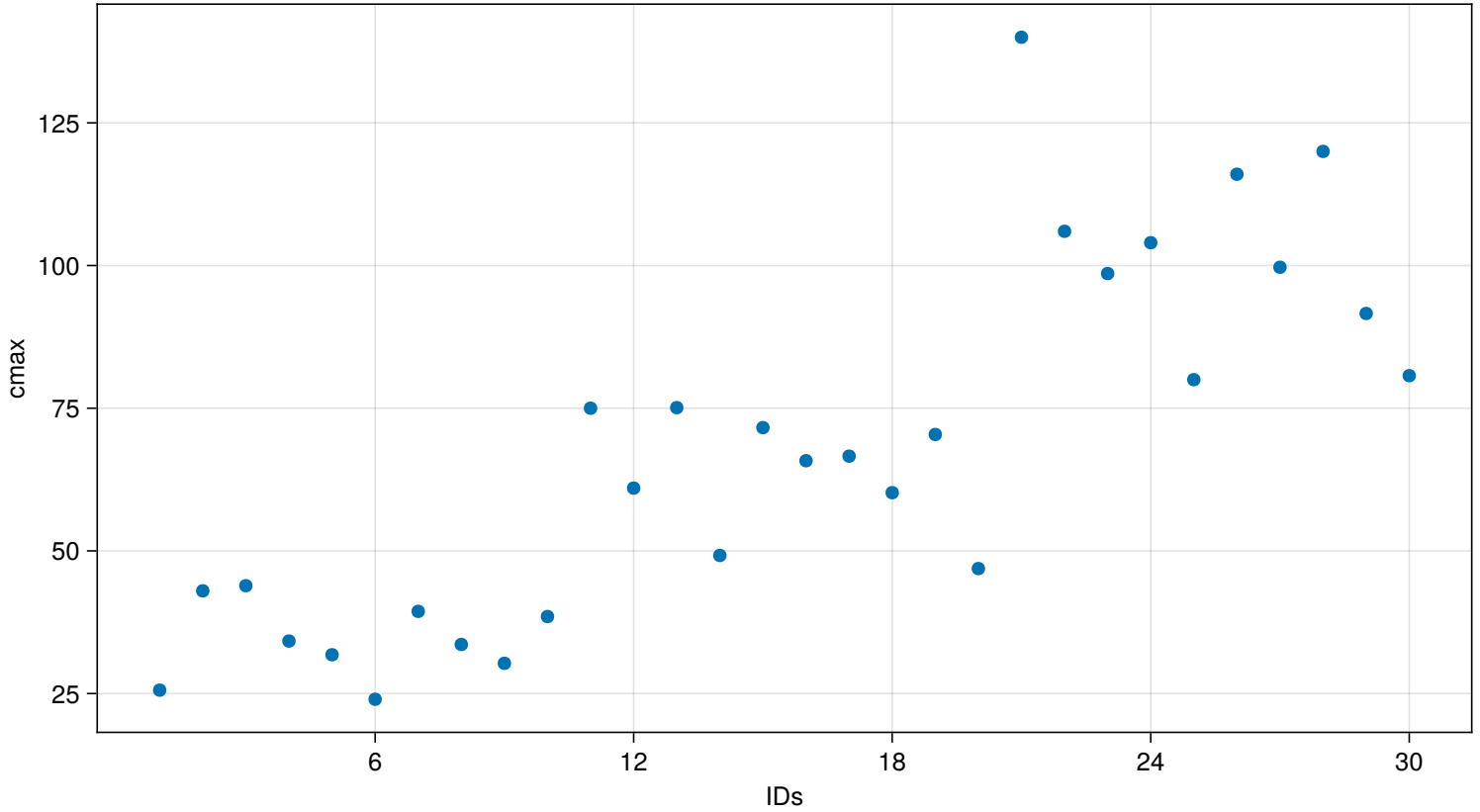

Figure 48: Parameter (cmax) vs Group

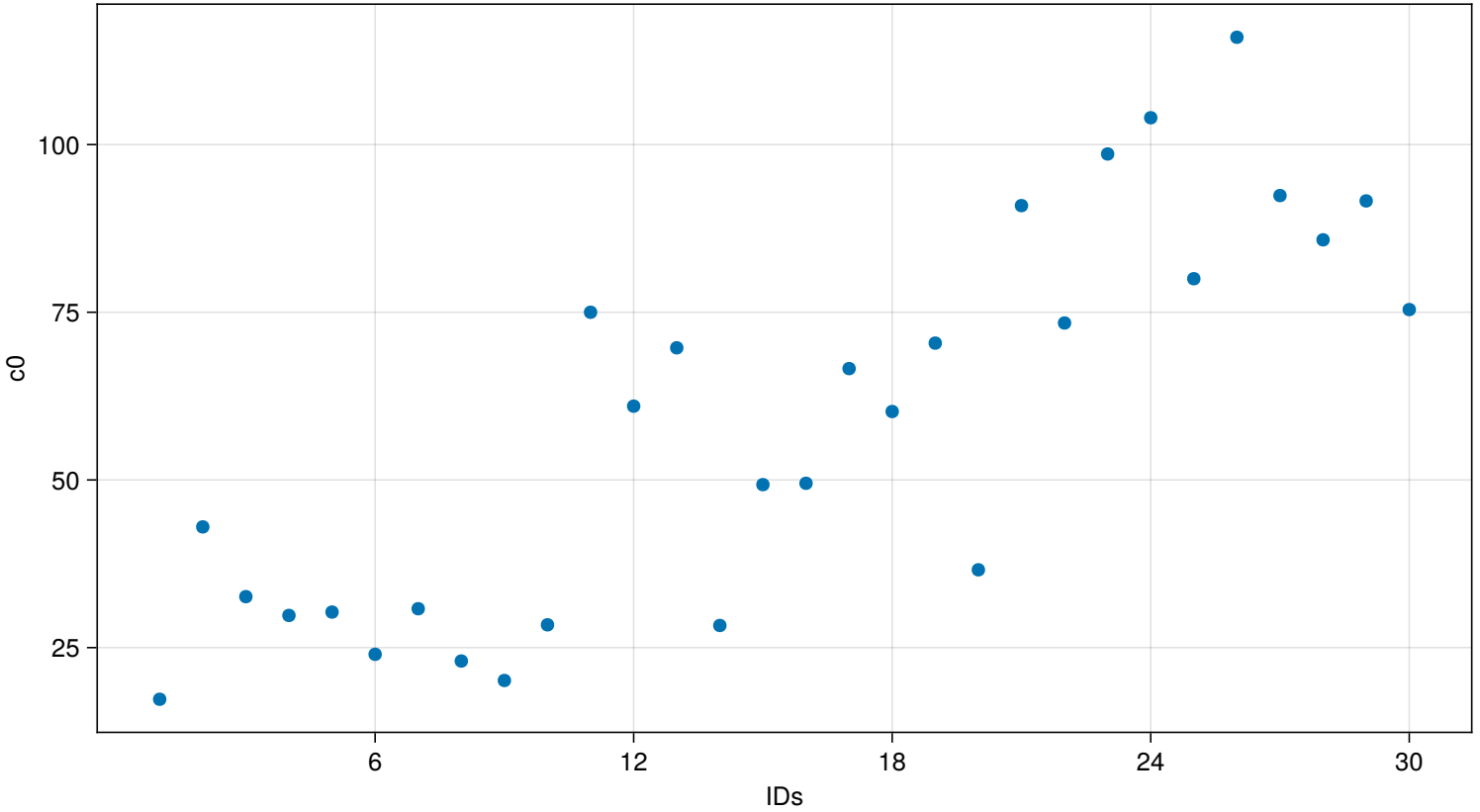

Figure 49: Parameter (c0) vs Group

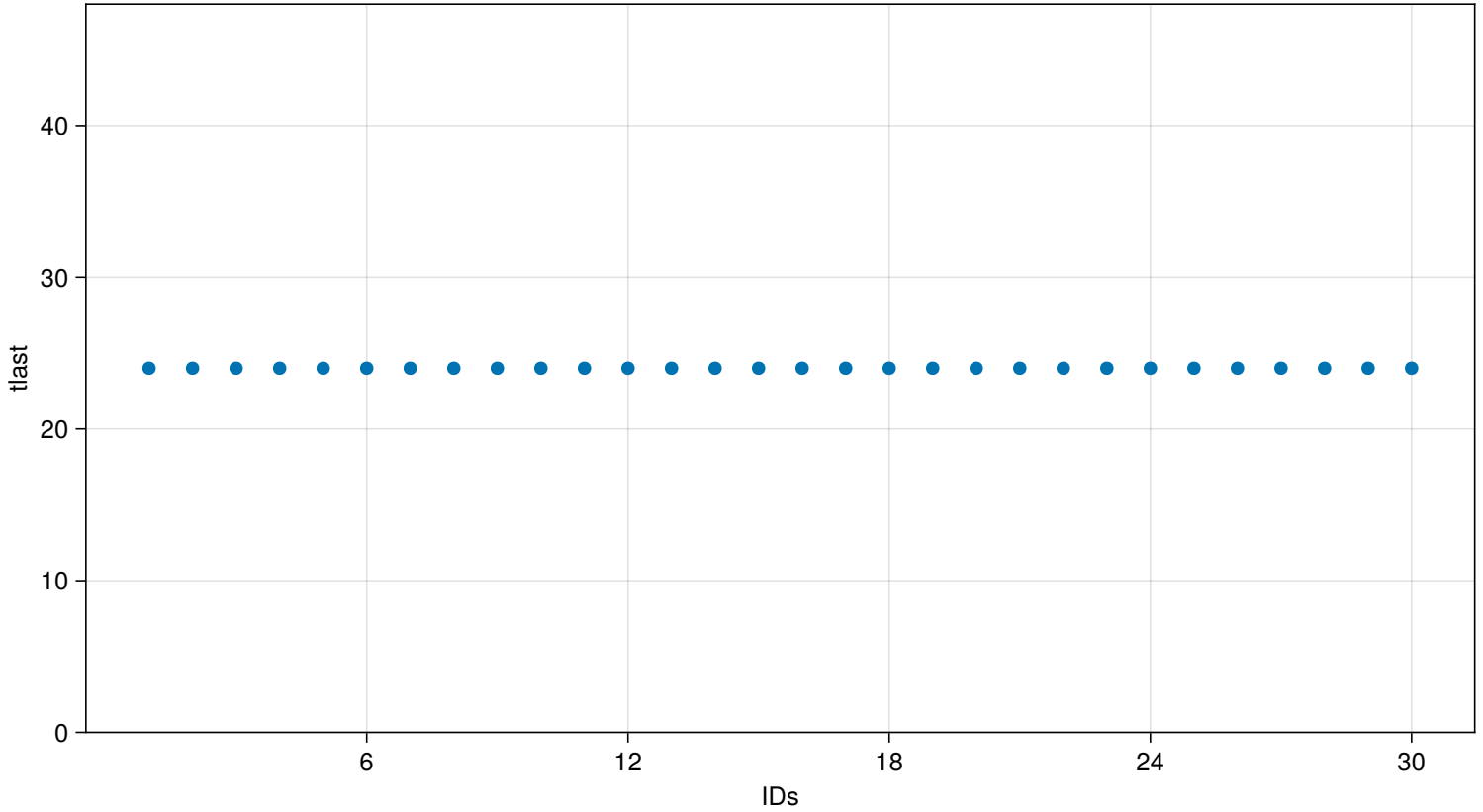

Figure 50: Parameter (tlast) vs Group

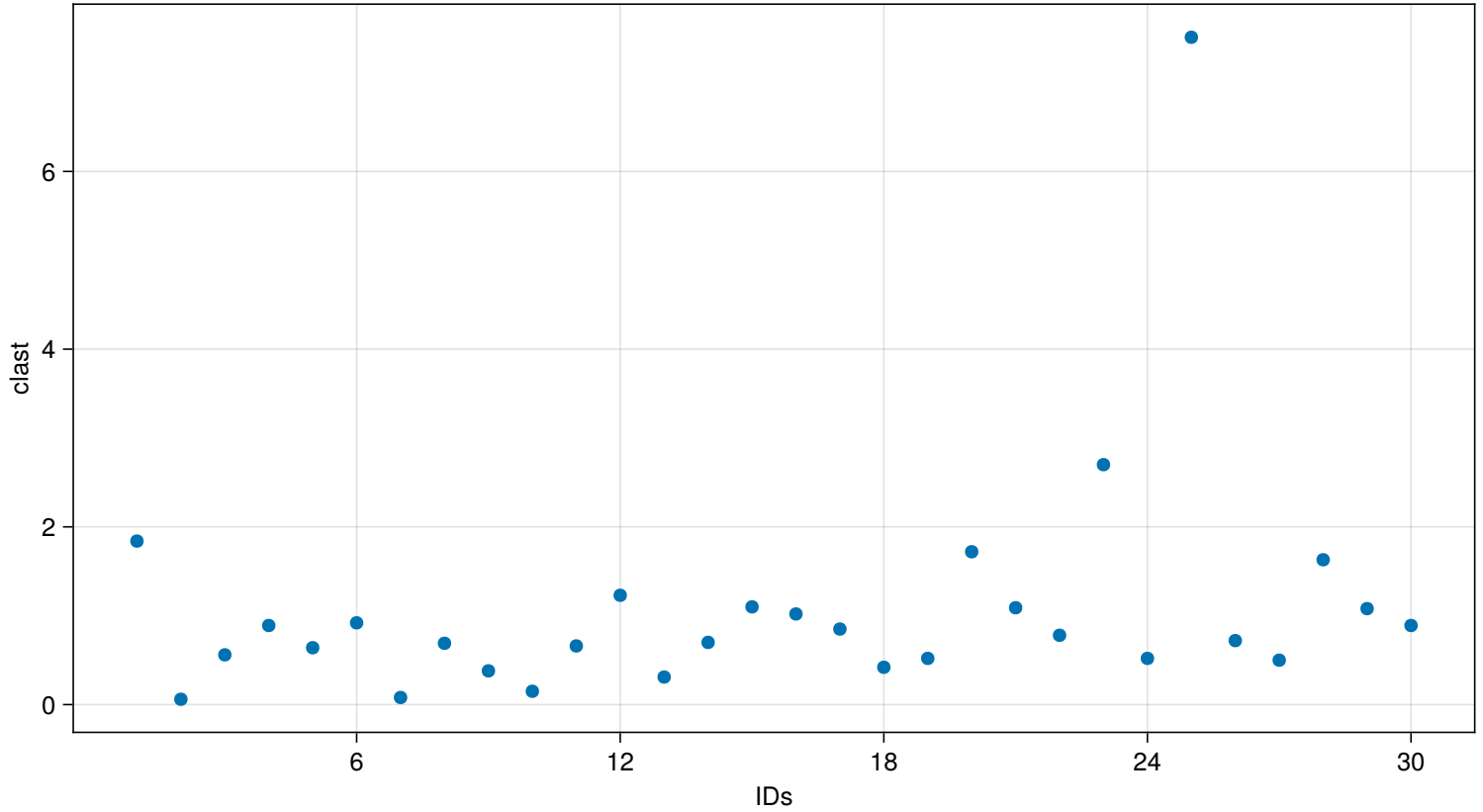

Figure 51: Parameter (clast) vs Group

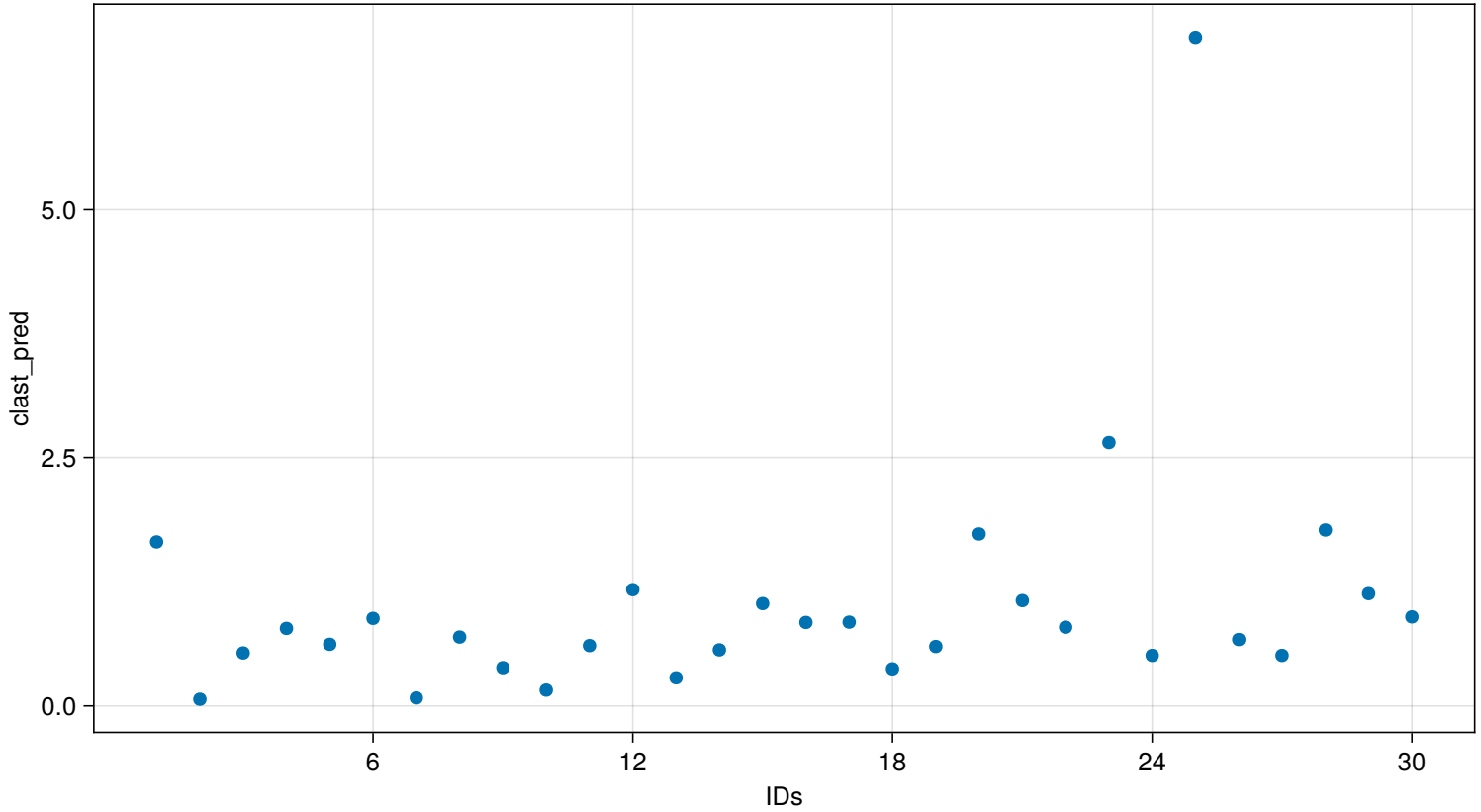

Figure 52: Parameter (clast_pred) vs Group

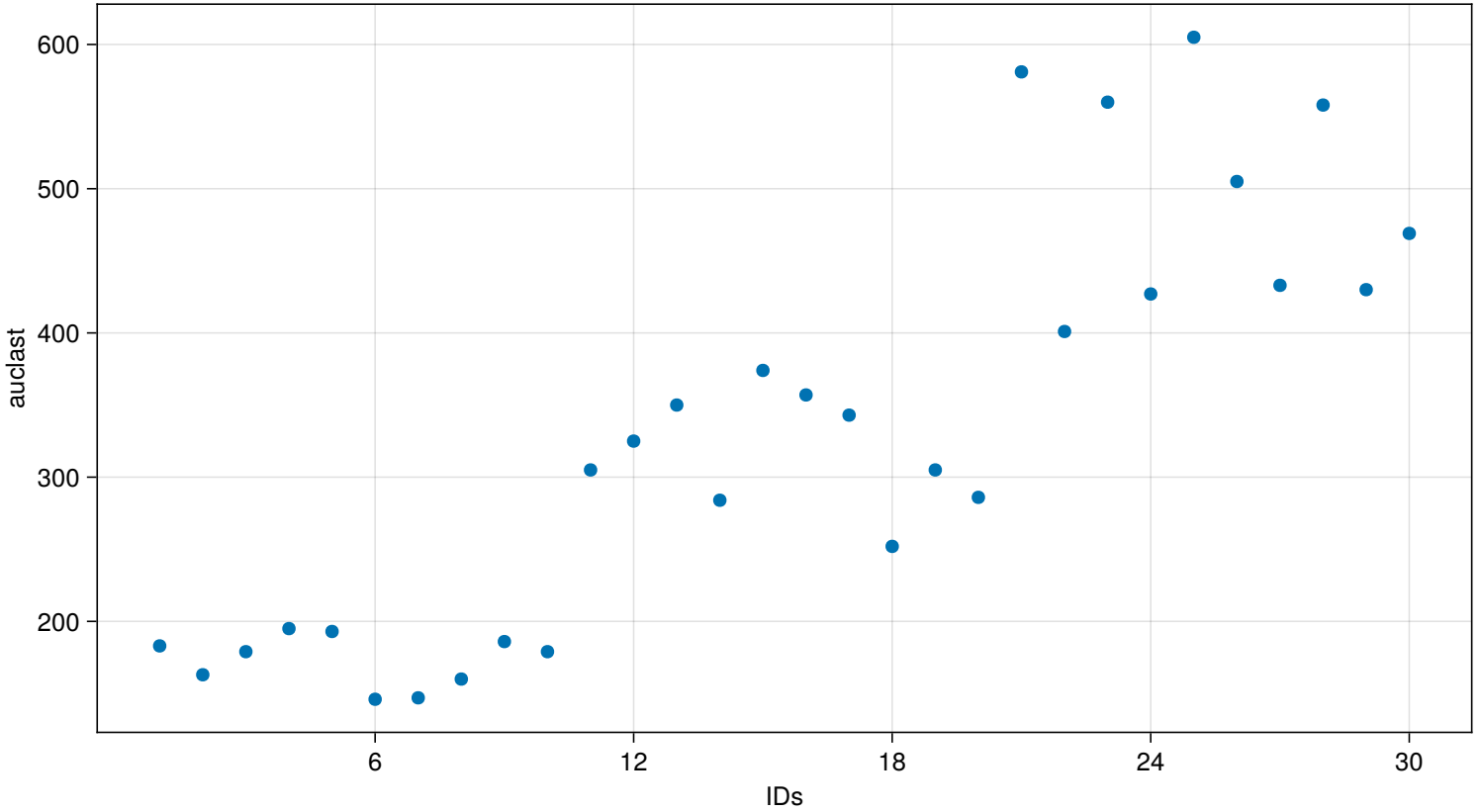

Figure 53: Parameter (auclast) vs Group

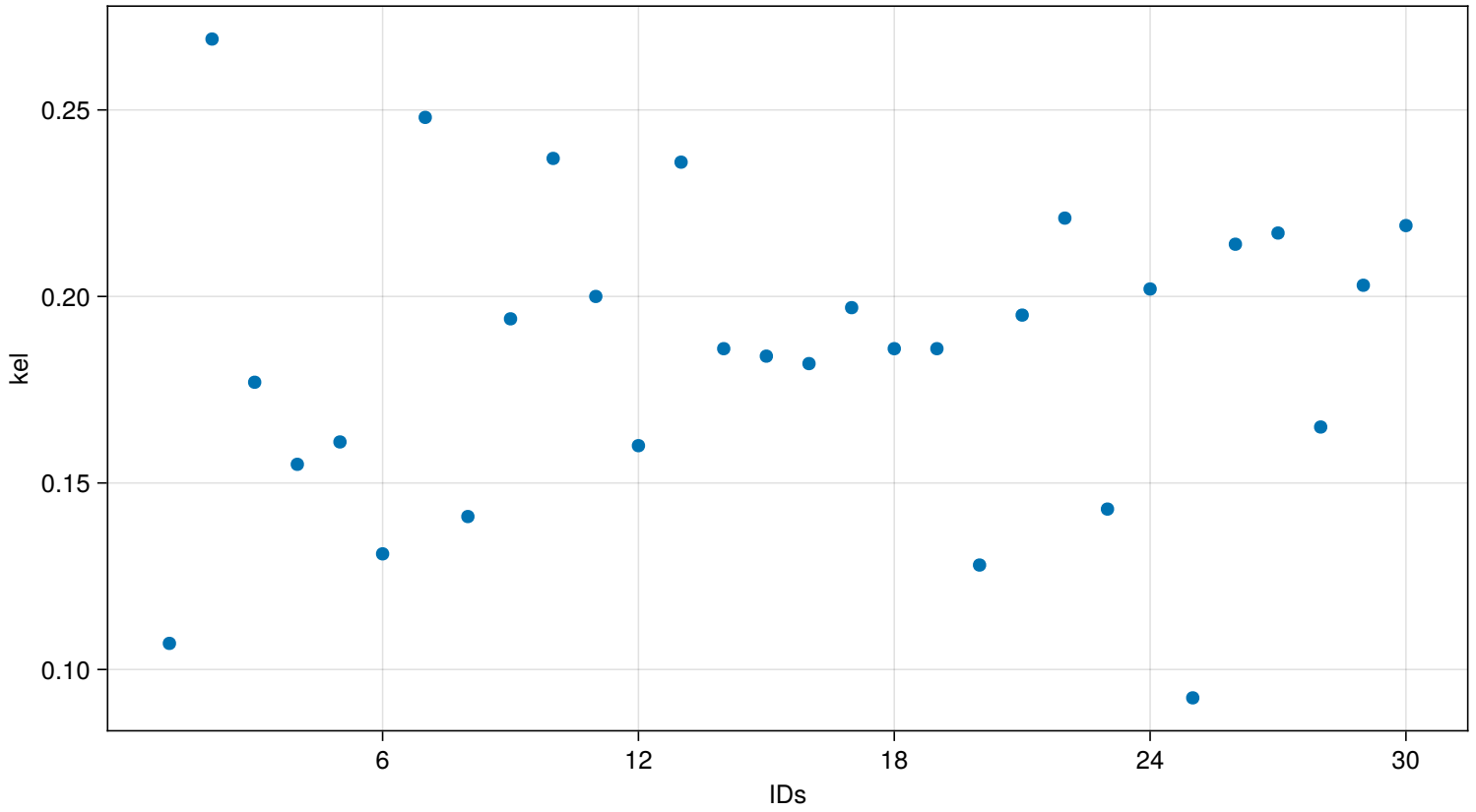

Figure 54: Parameter (kel) vs Group

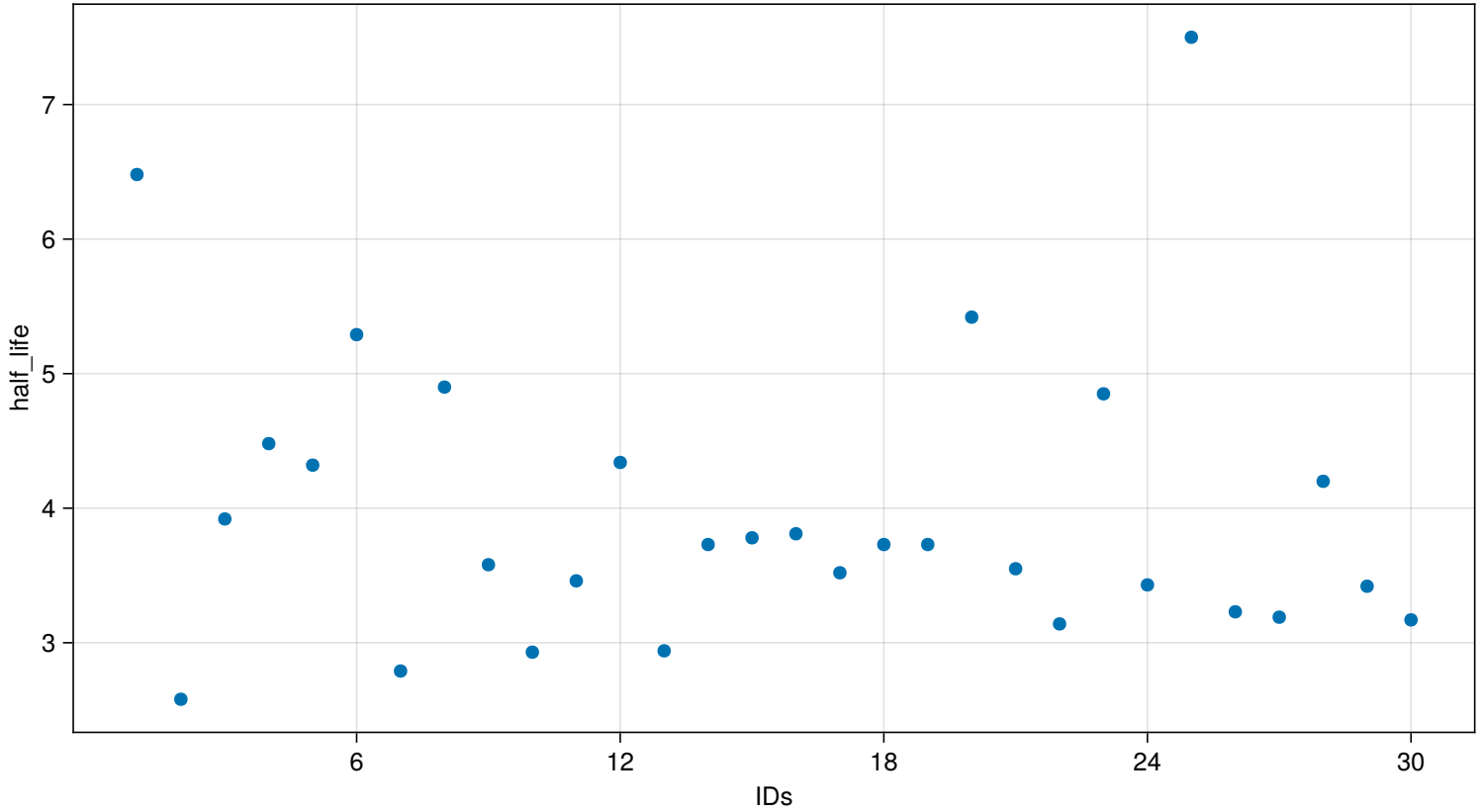

Figure 55: Parameter (half_life) vs Group

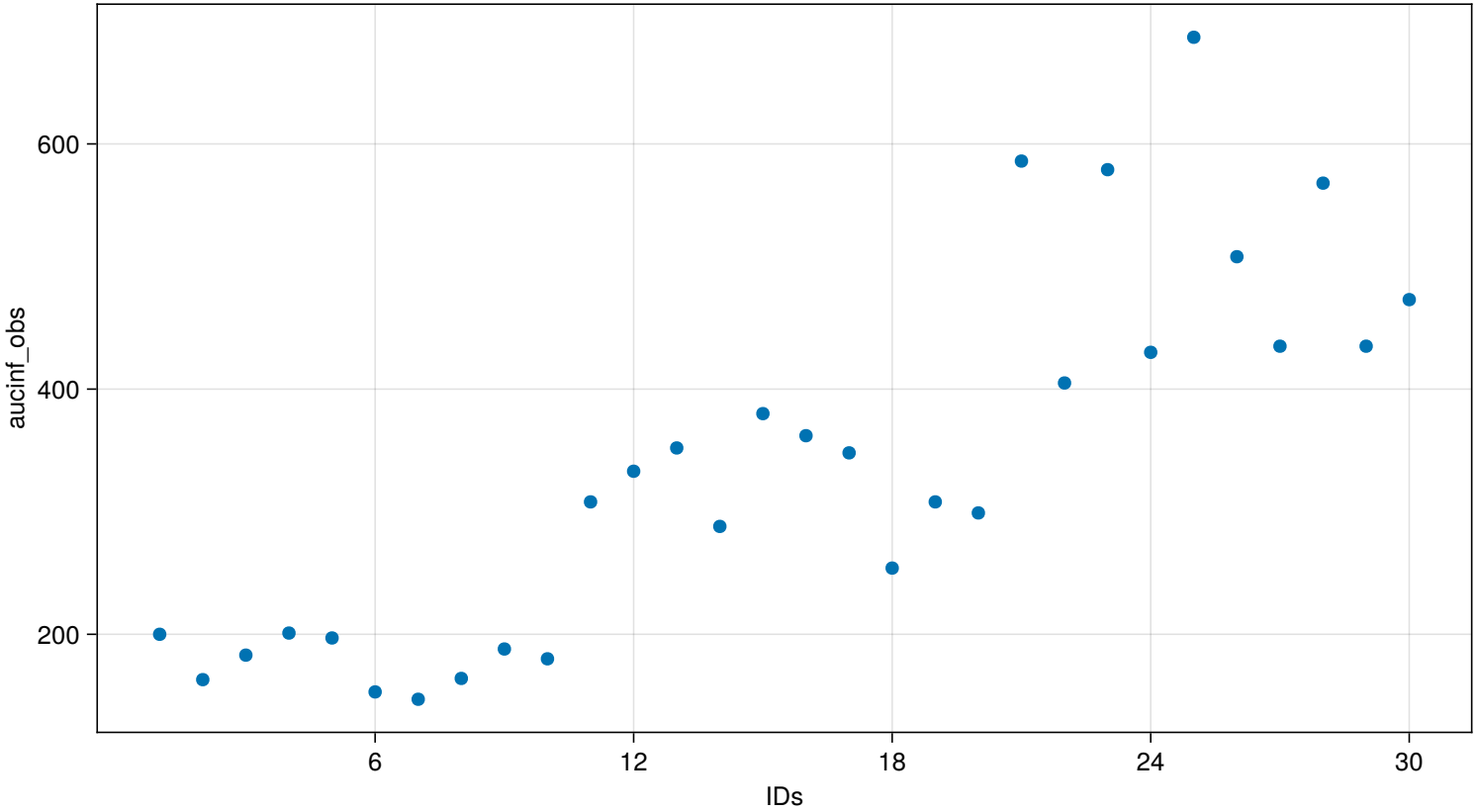

Figure 56: Parameter (aucinf_obs) vs Group

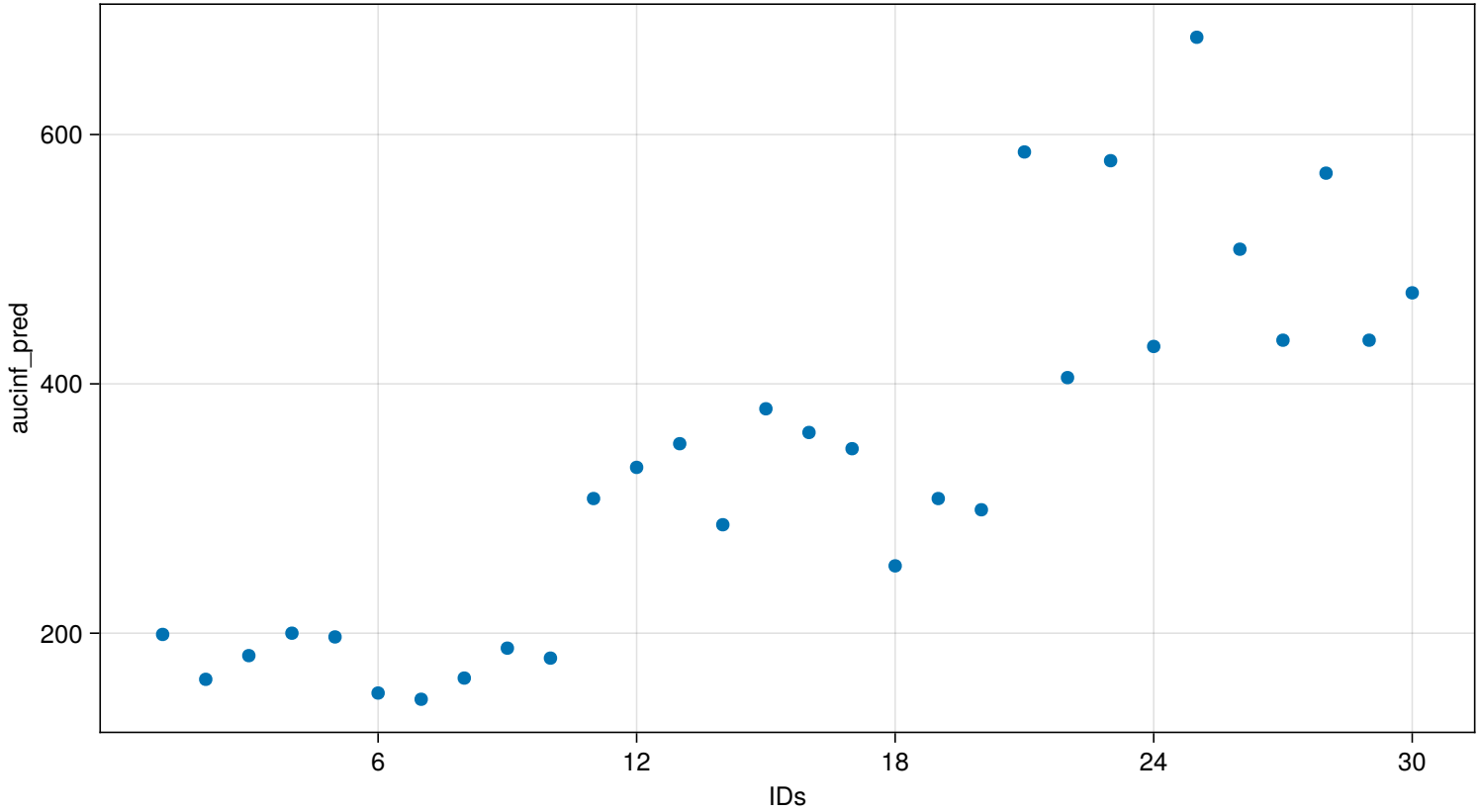

Figure 57: Parameter (aucinf_pred) vs Group

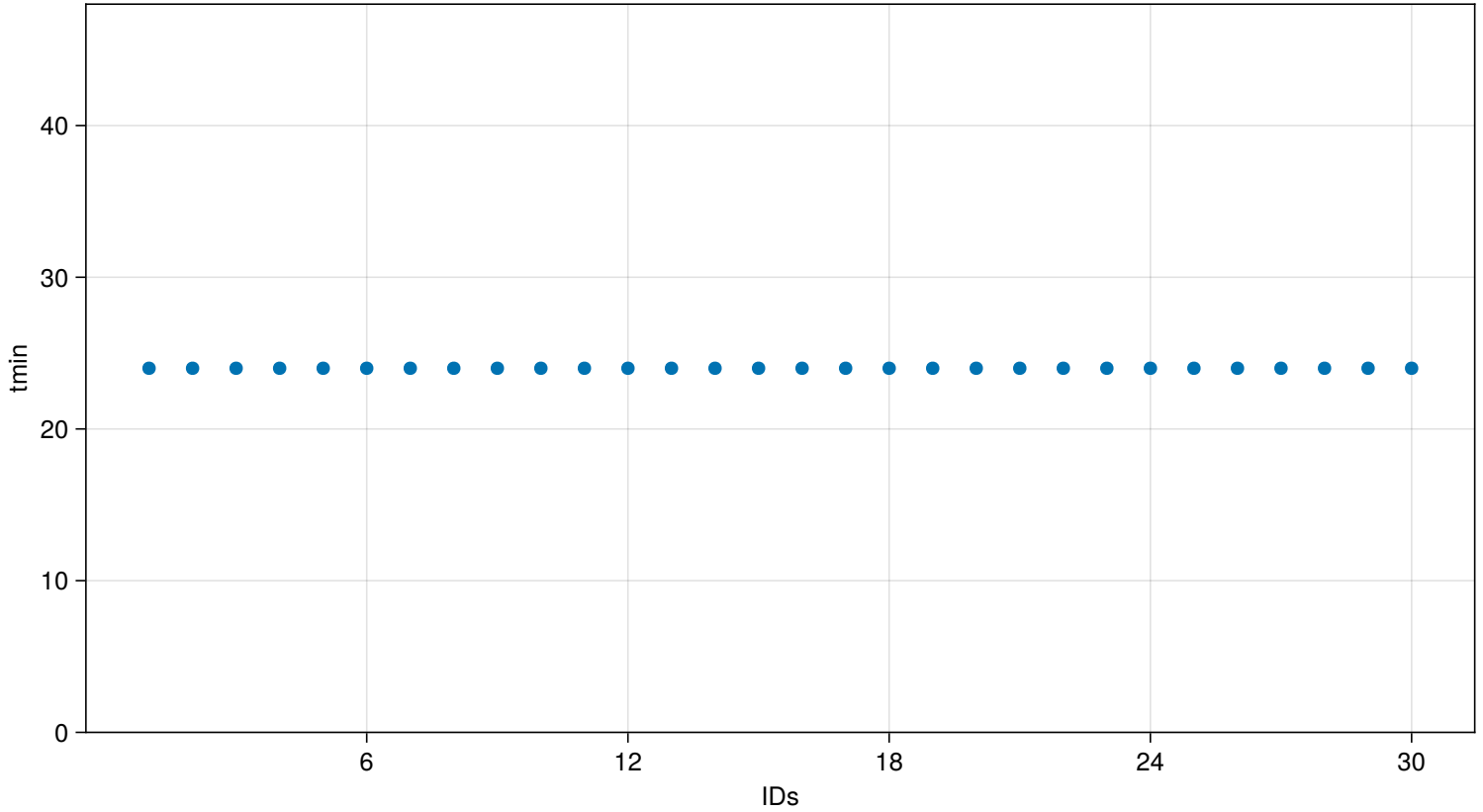

Figure 58: Parameter (tmin) vs Group

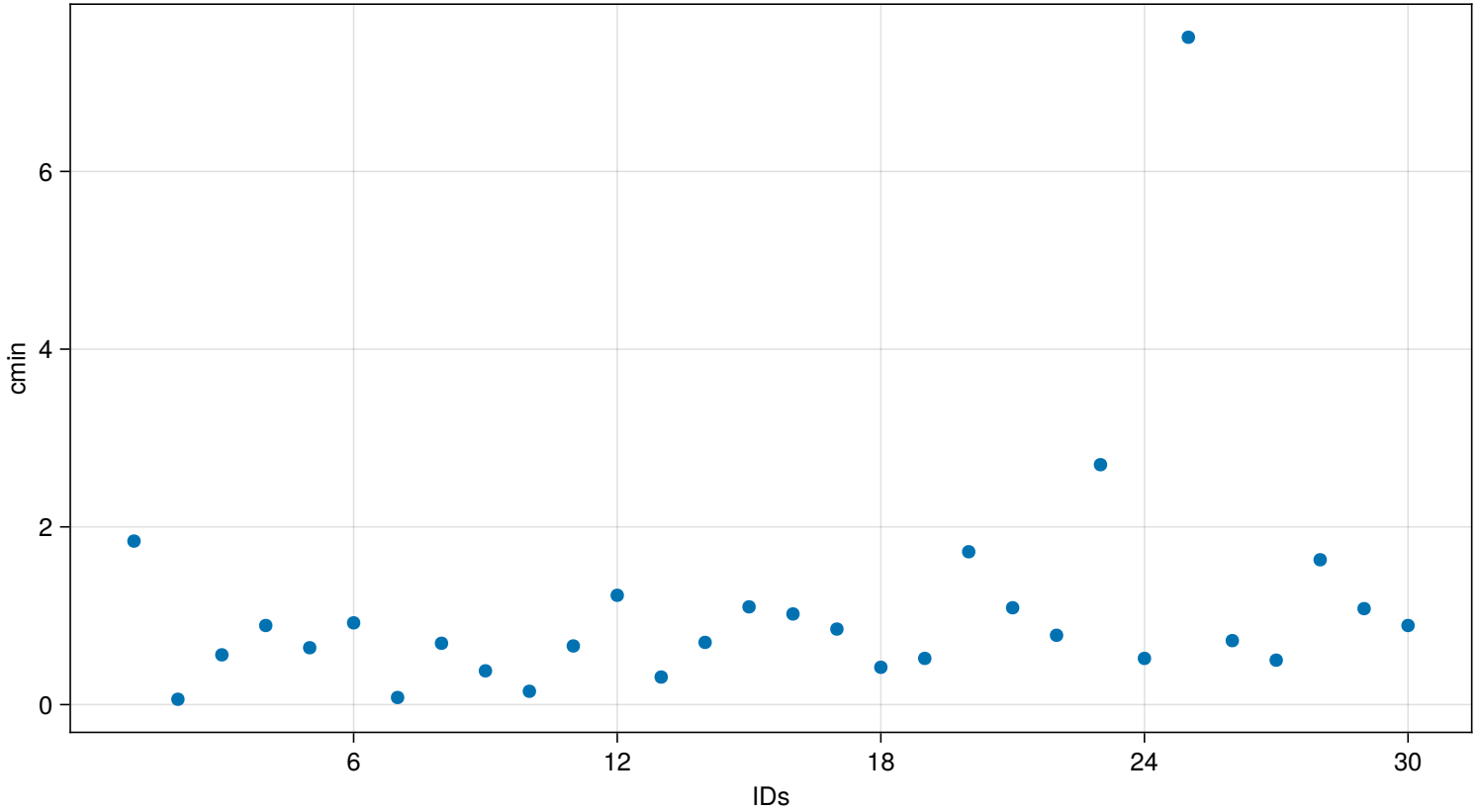

Figure 59: Parameter (cmin) vs Group

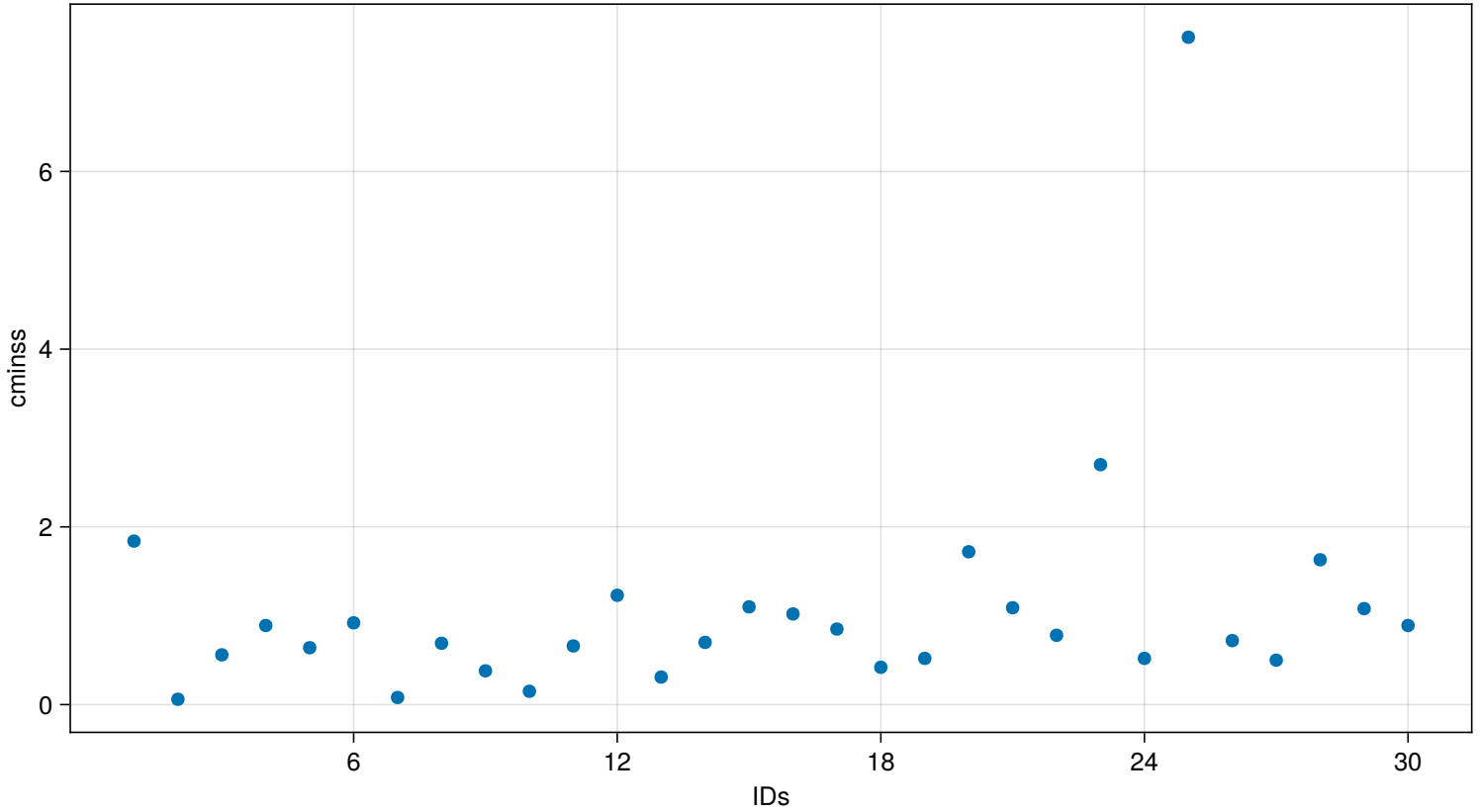

Figure 60: Parameter (cminss) vs Group

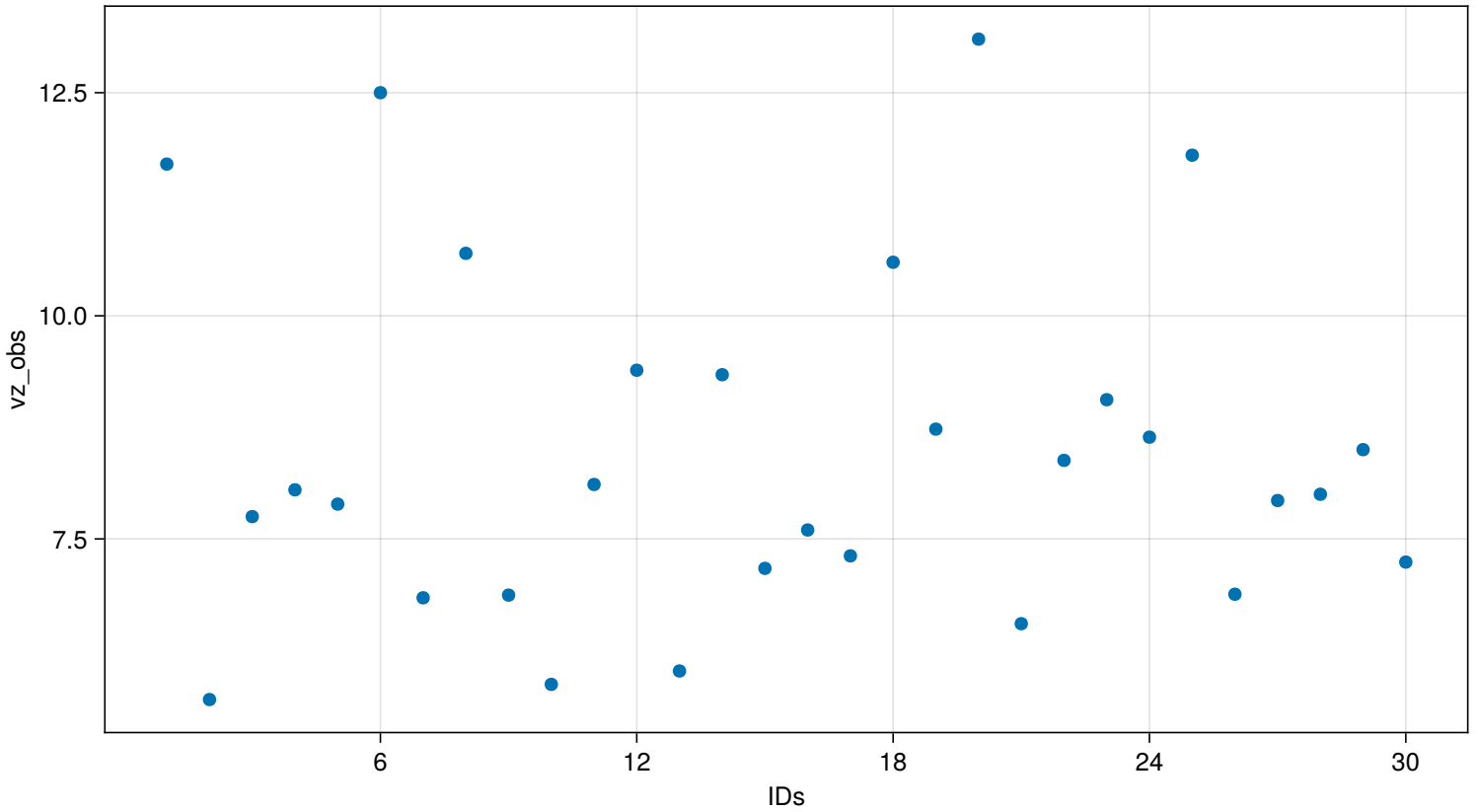

Figure 61: Parameter (vz_obs) vs Group

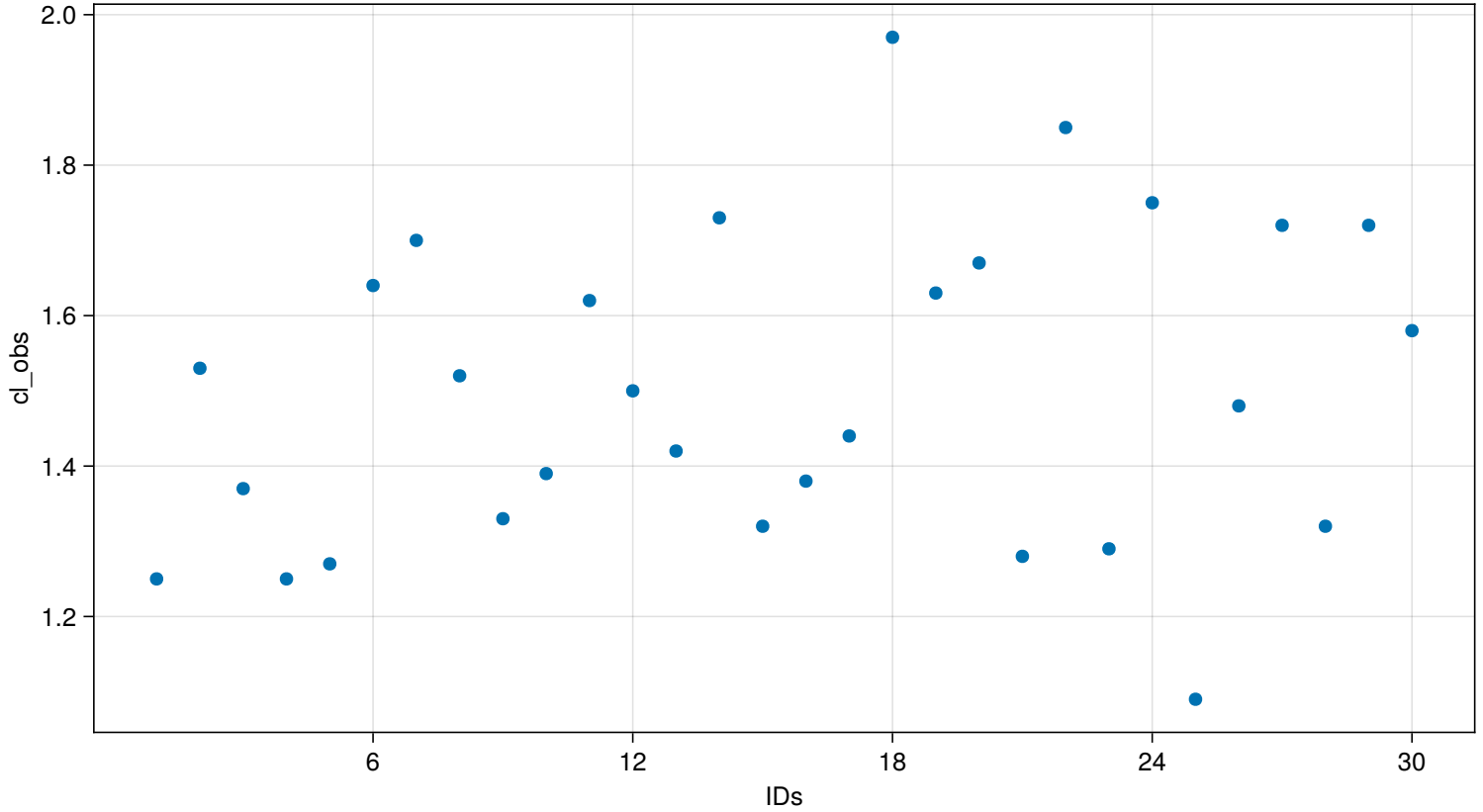

Figure 62: Parameter (cl_obs) vs Group

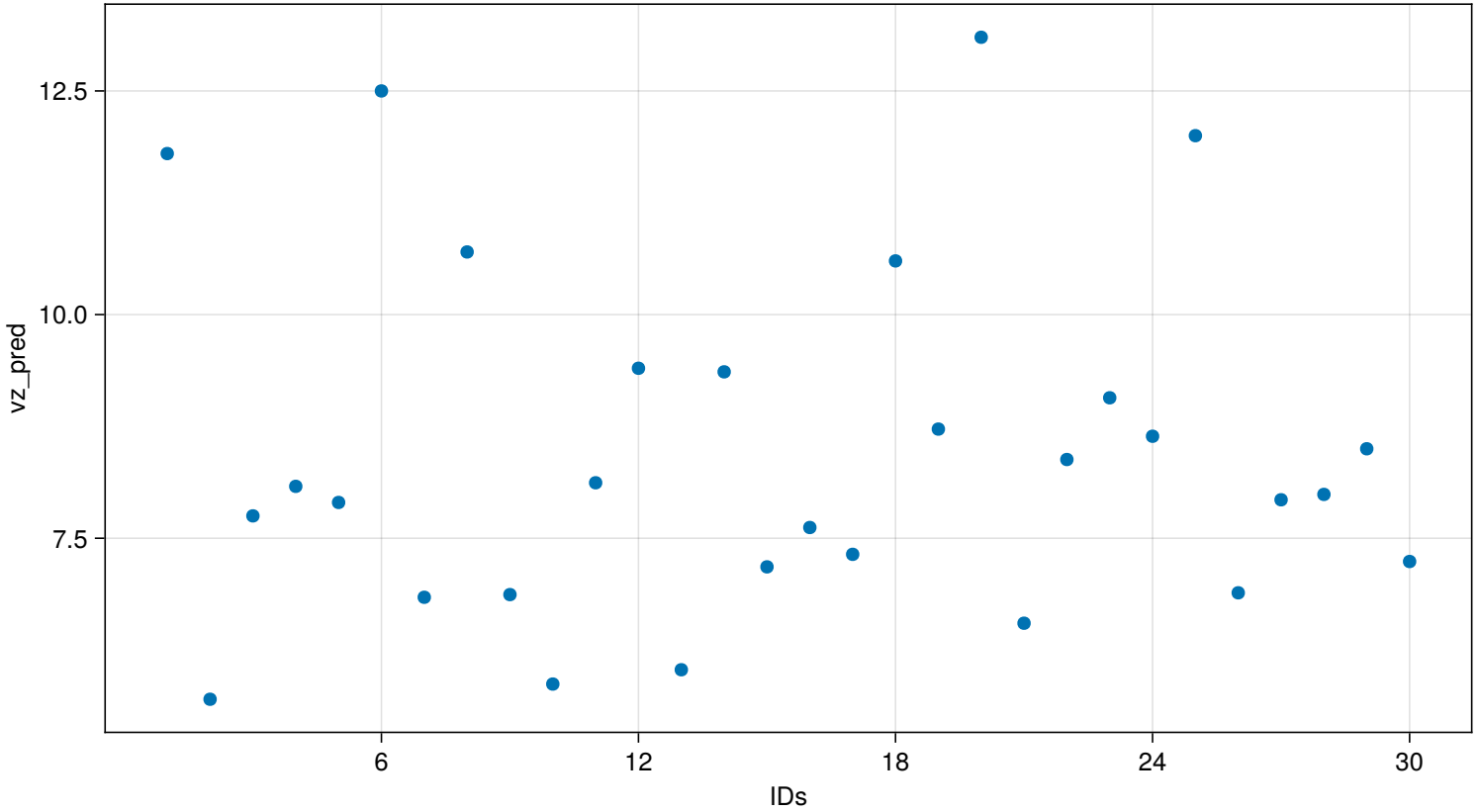

Figure 63: Parameter (vz_pred) vs Group

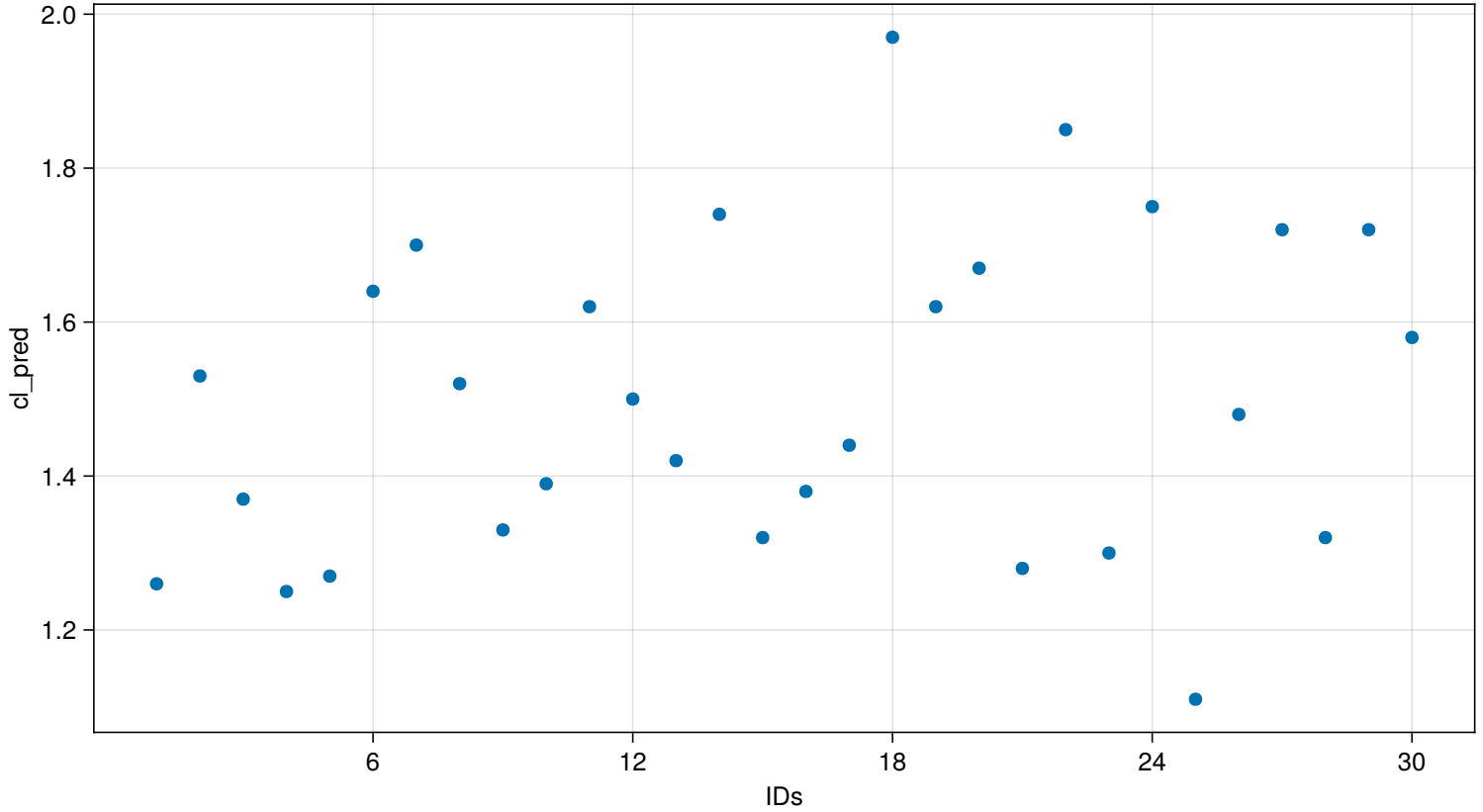

Figure 64: Parameter (cl_pred) vs Group

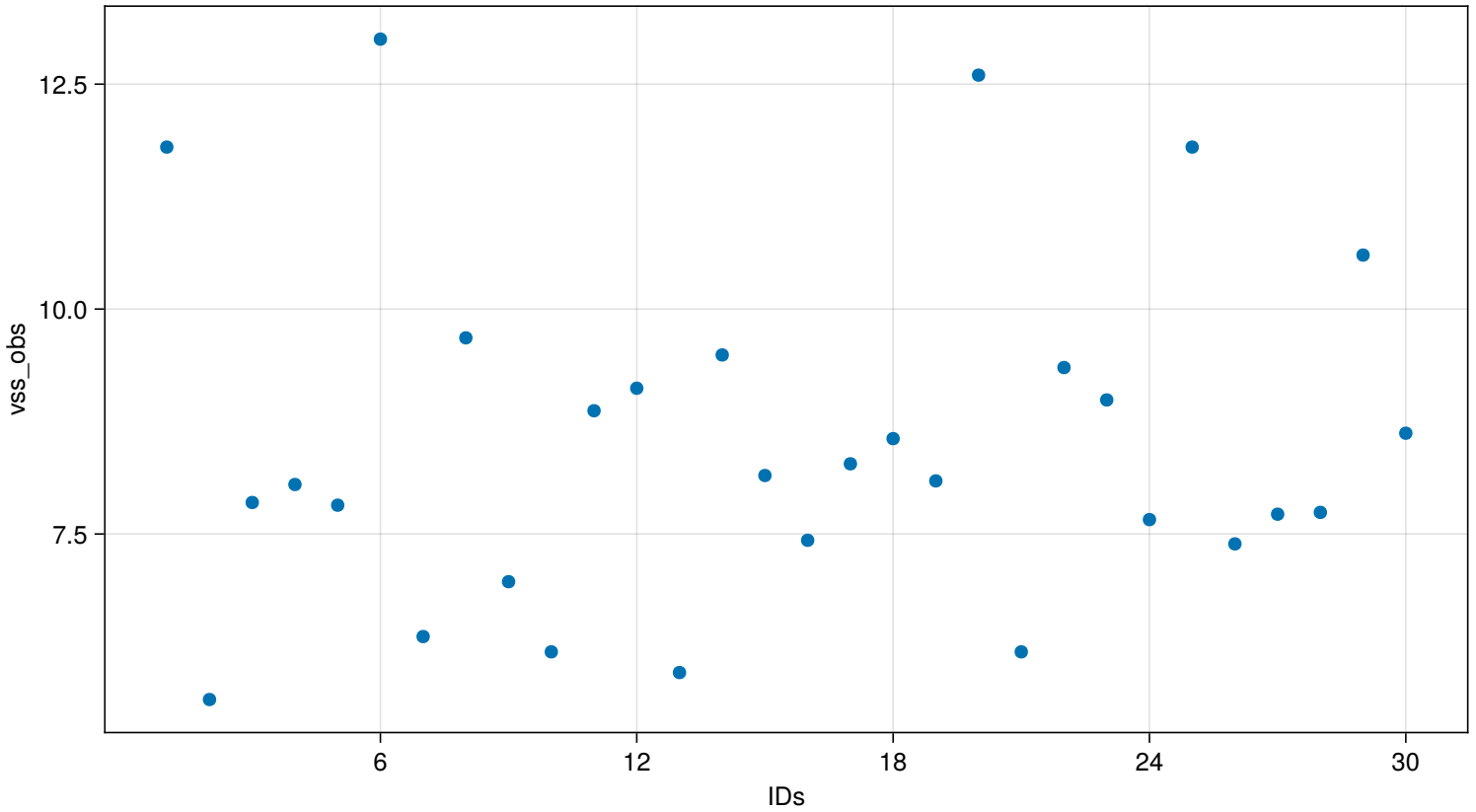

Figure 65: Parameter (vss_obs) vs Group

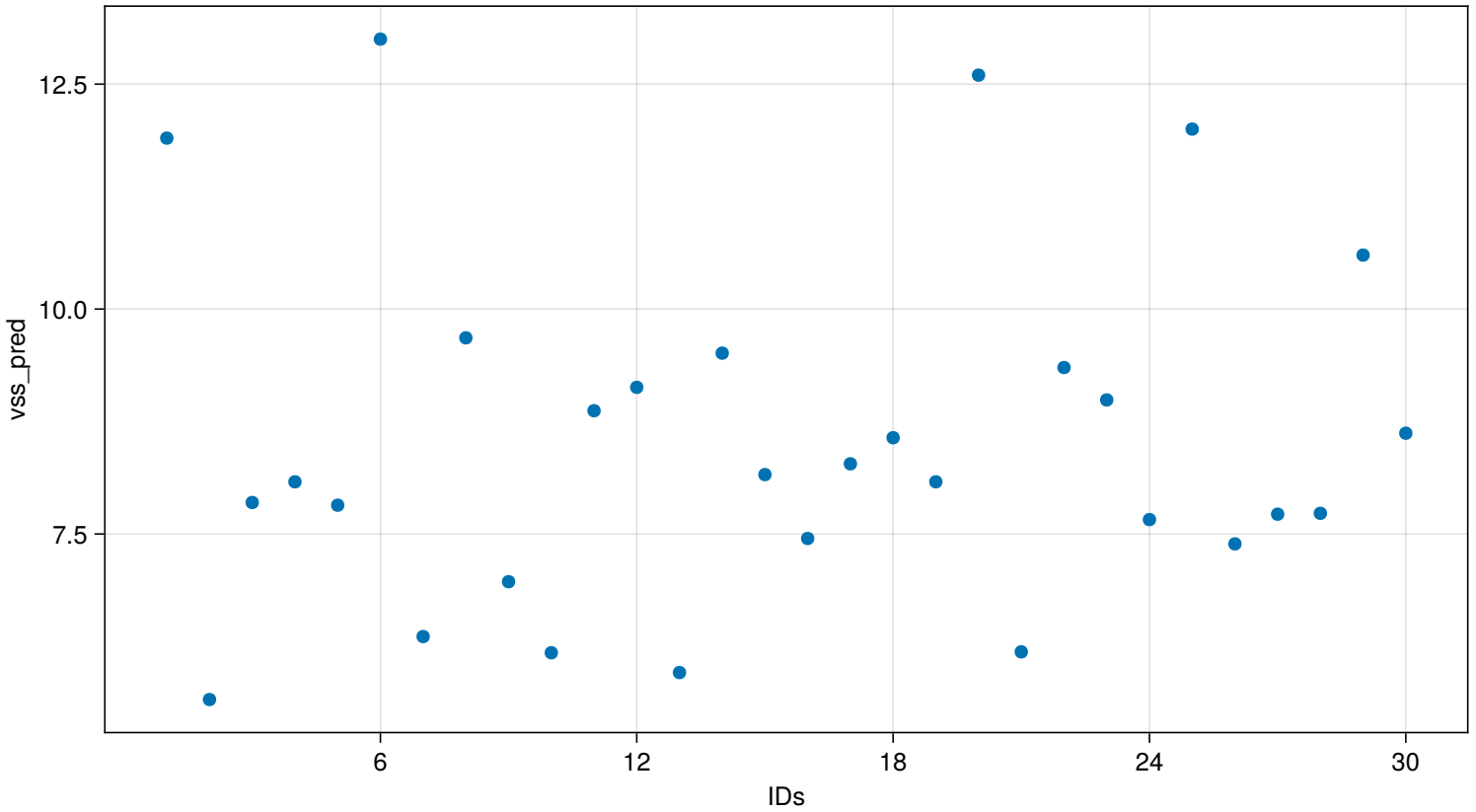

Figure 66: Parameter (vss_pred) vs Group

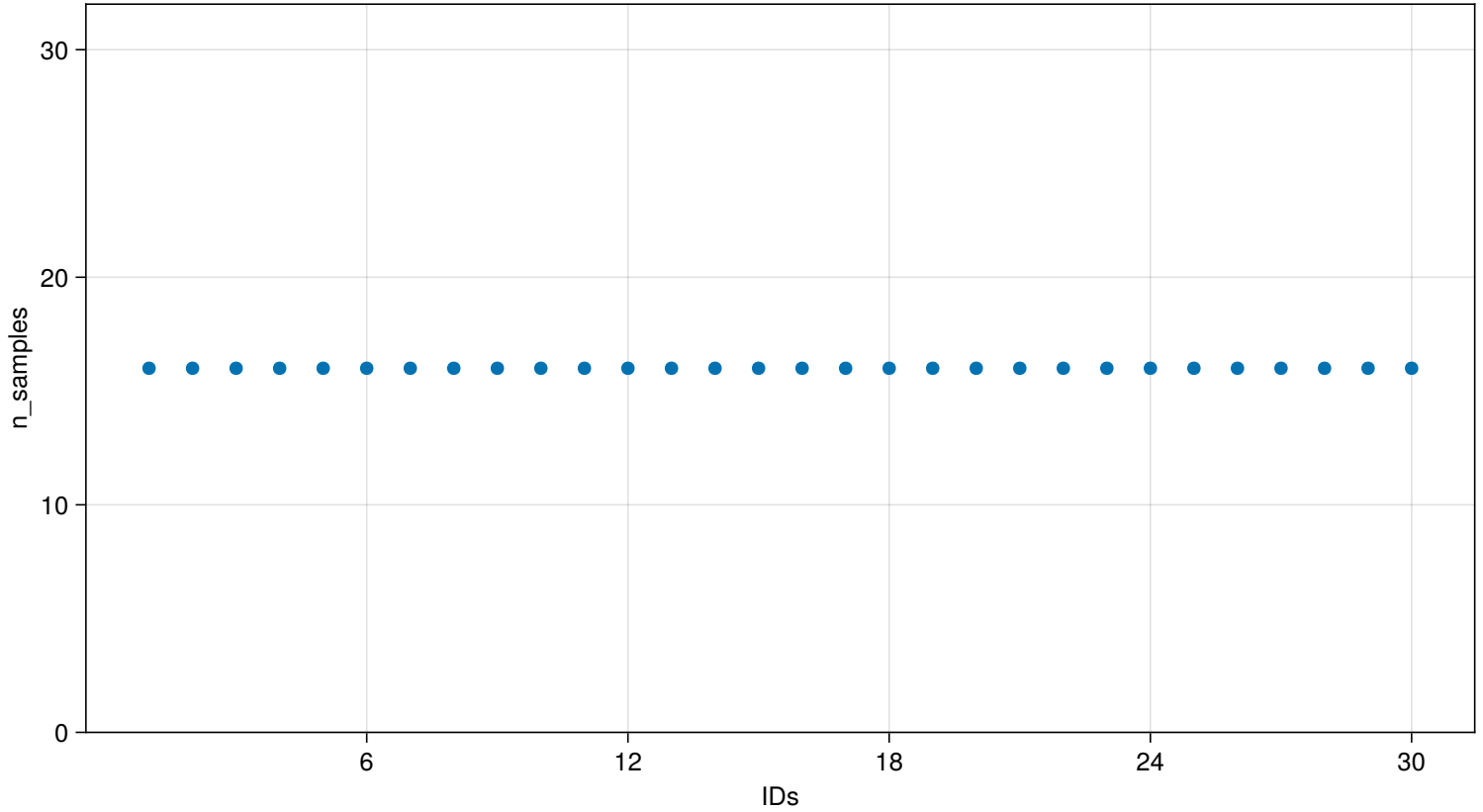

Figure 67: Parameter (n_samples) vs Group

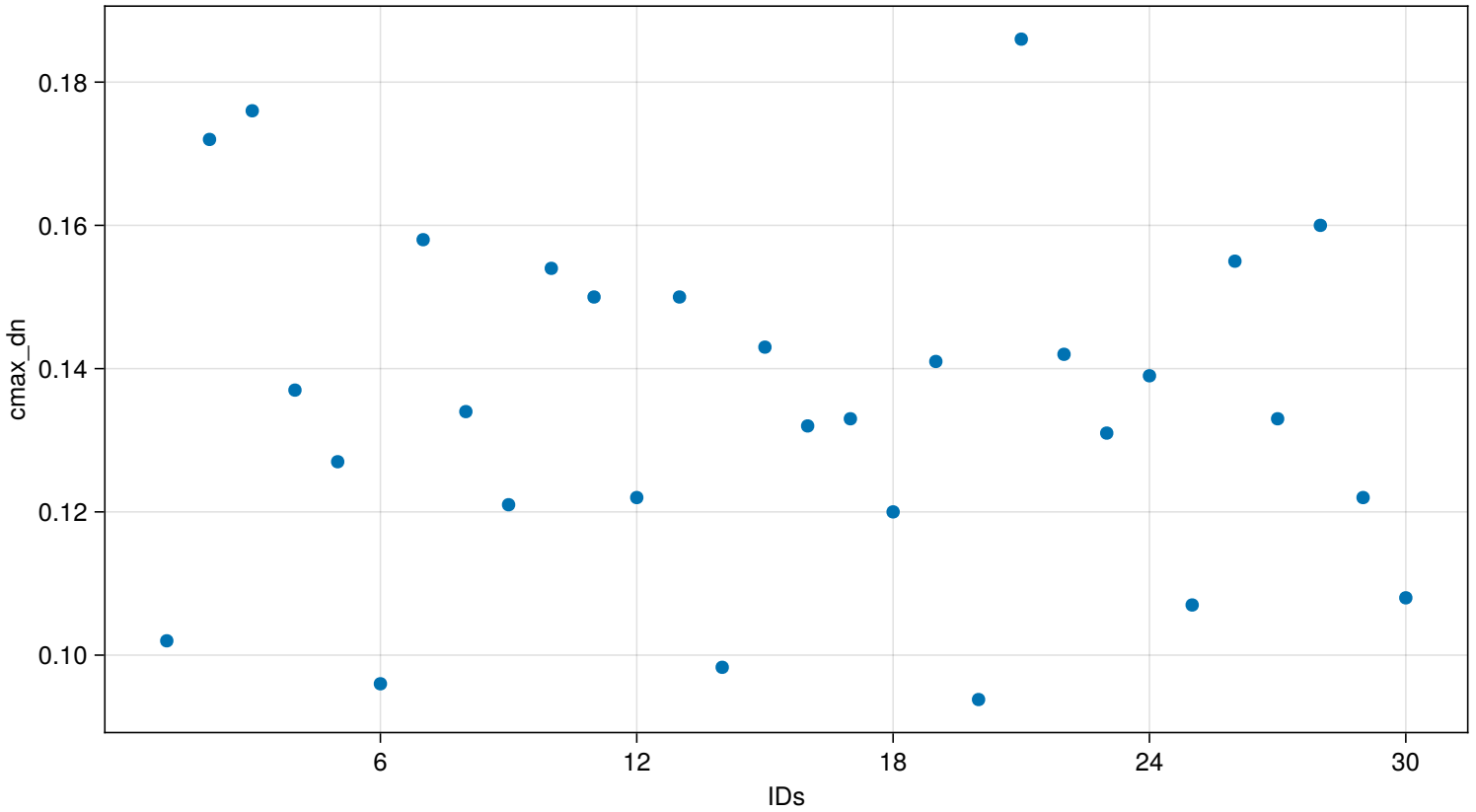

Figure 68: Parameter (cmax_dn) vs Group

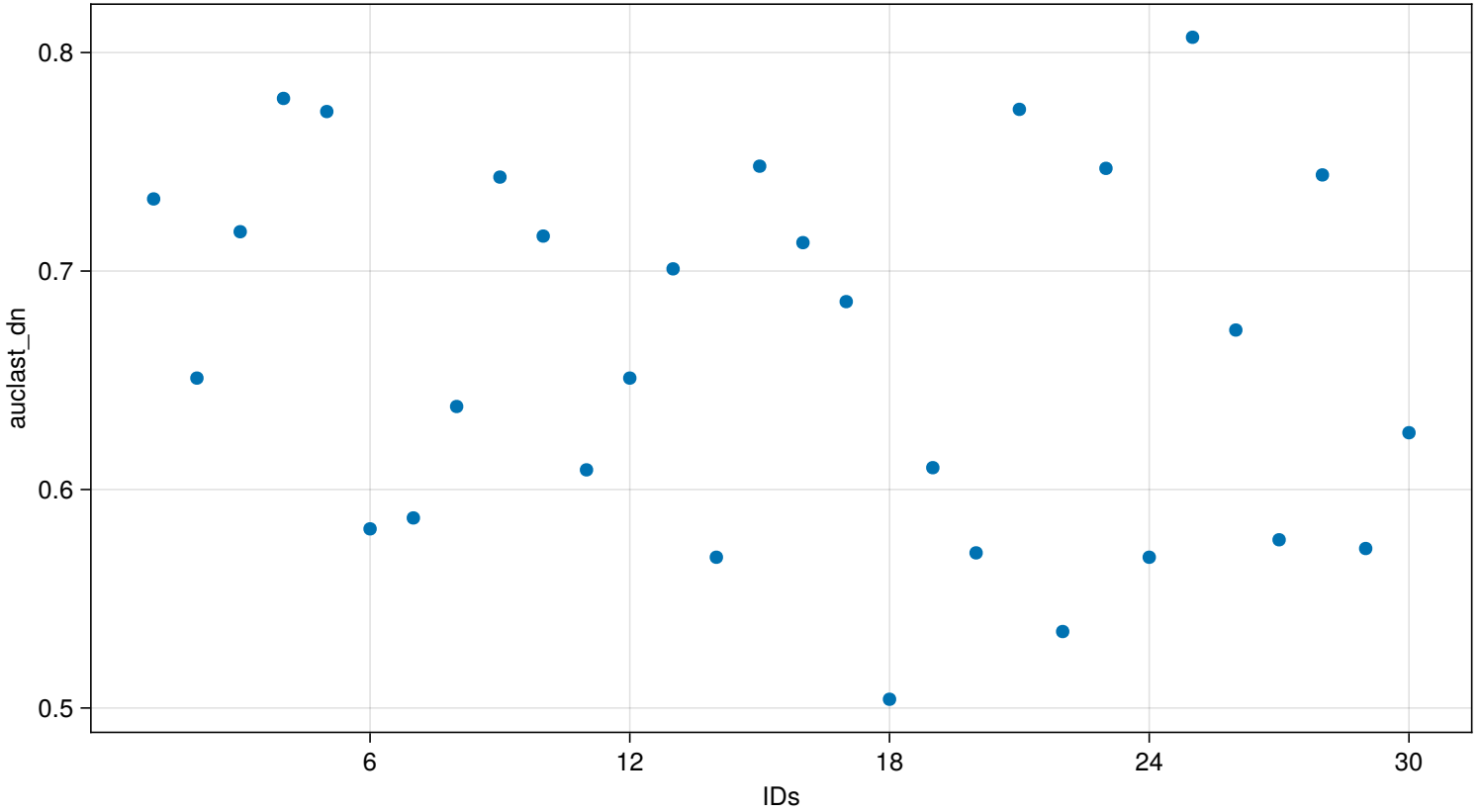

Figure 69: Parameter (auclast_dn) vs Group

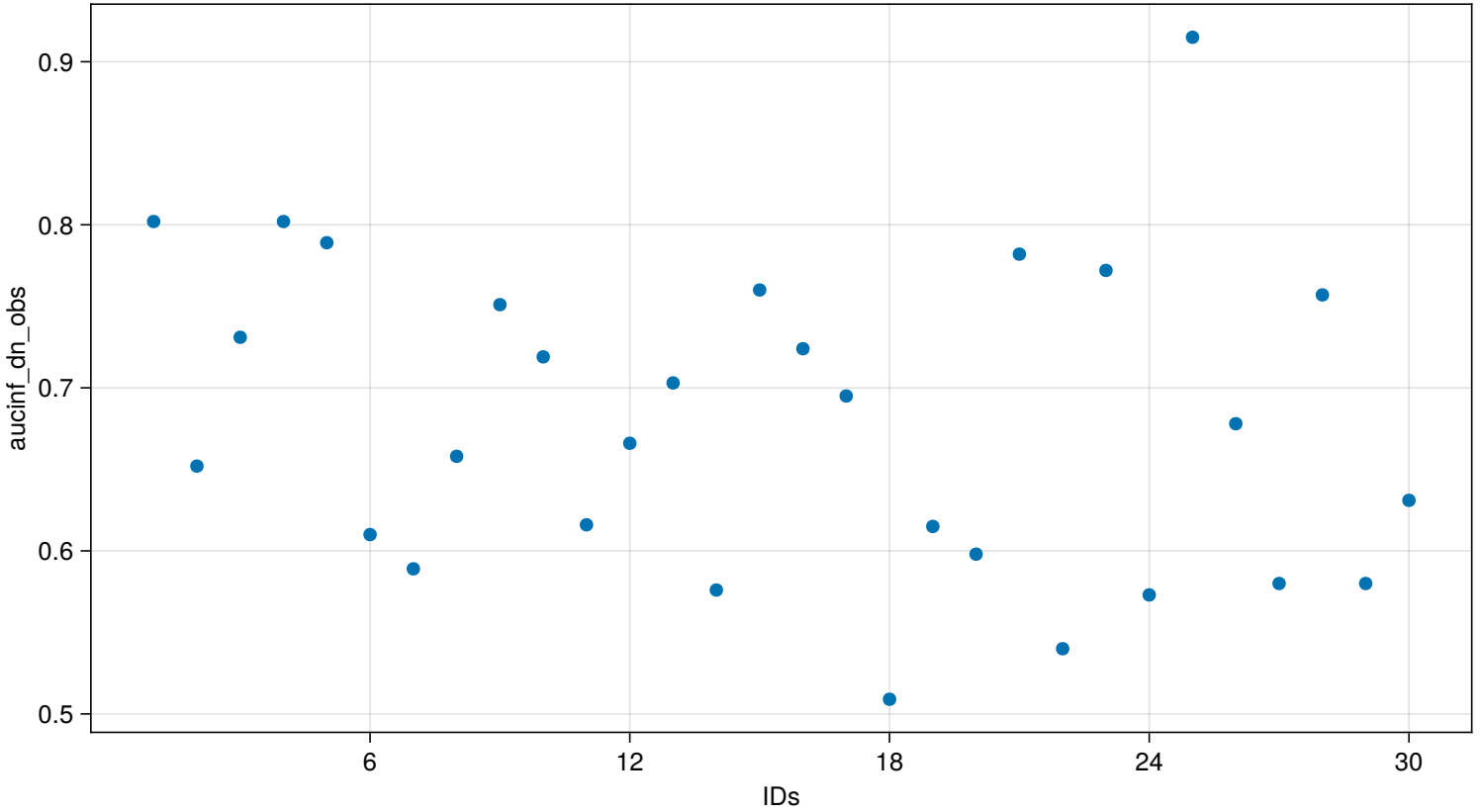

Figure 70: Parameter (aucinf_dn_obs) vs Group

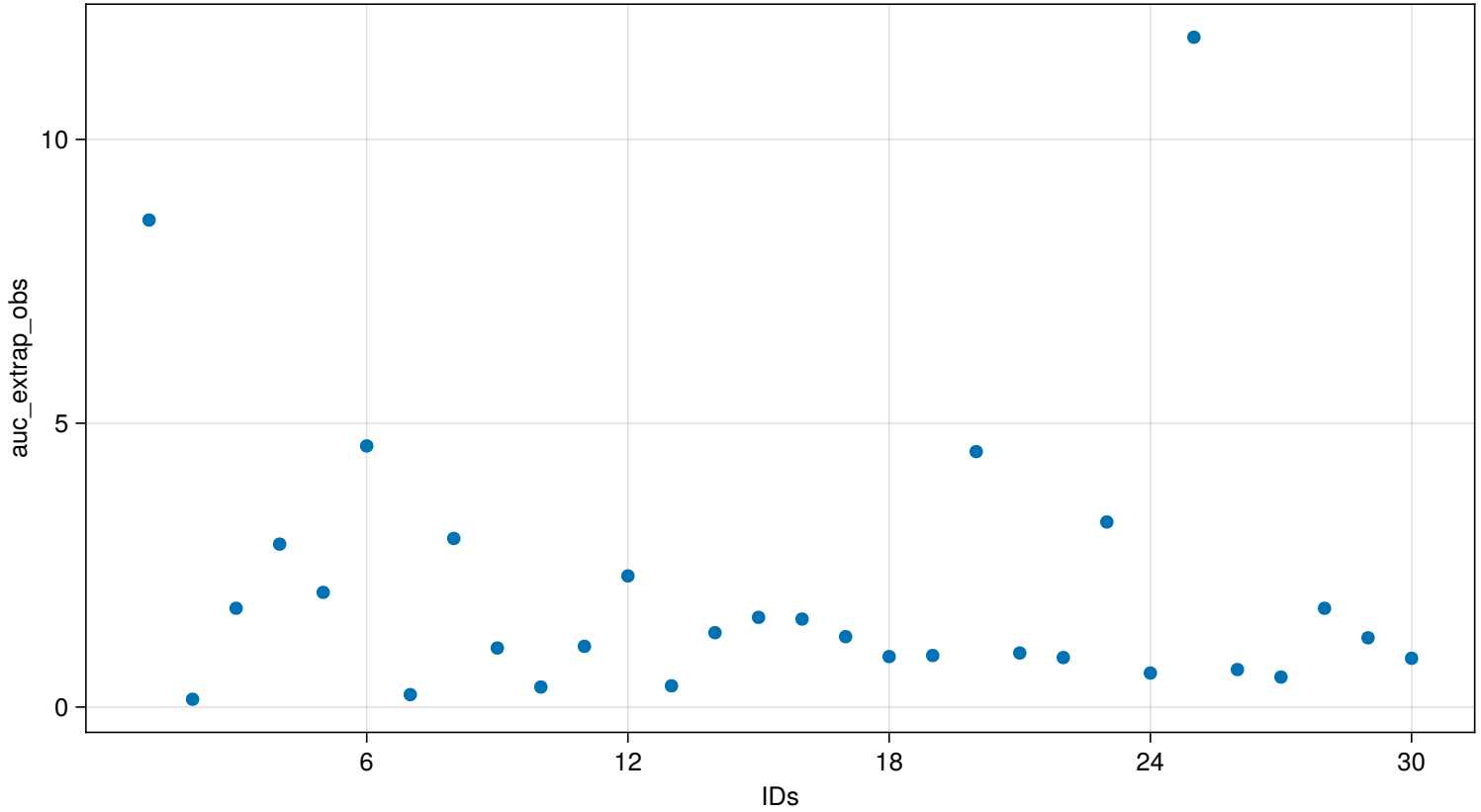

Figure 71: Parameter (auc_extrap_obs) vs Group

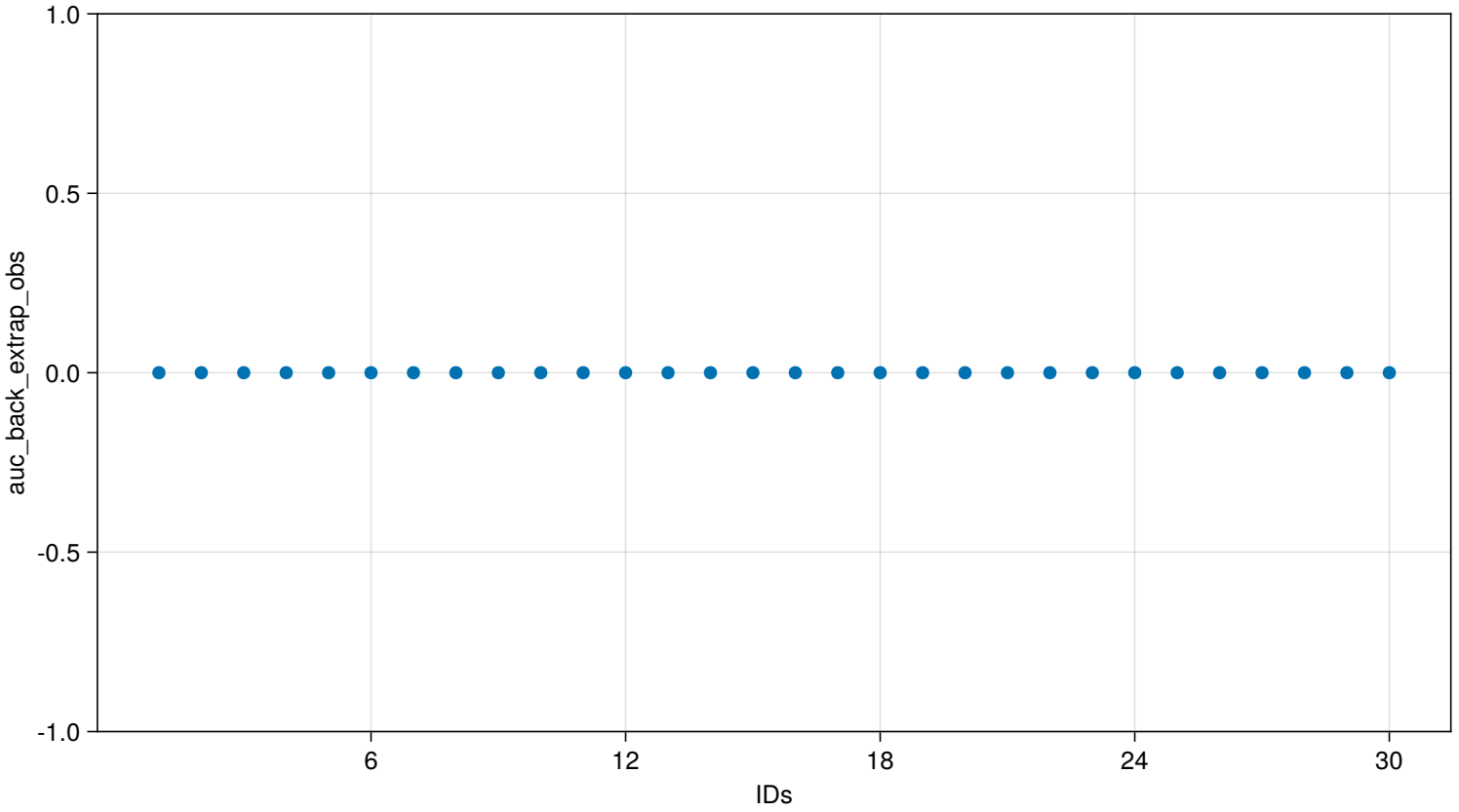

Figure 72: Parameter (auc_back_extrap_obs) vs Group

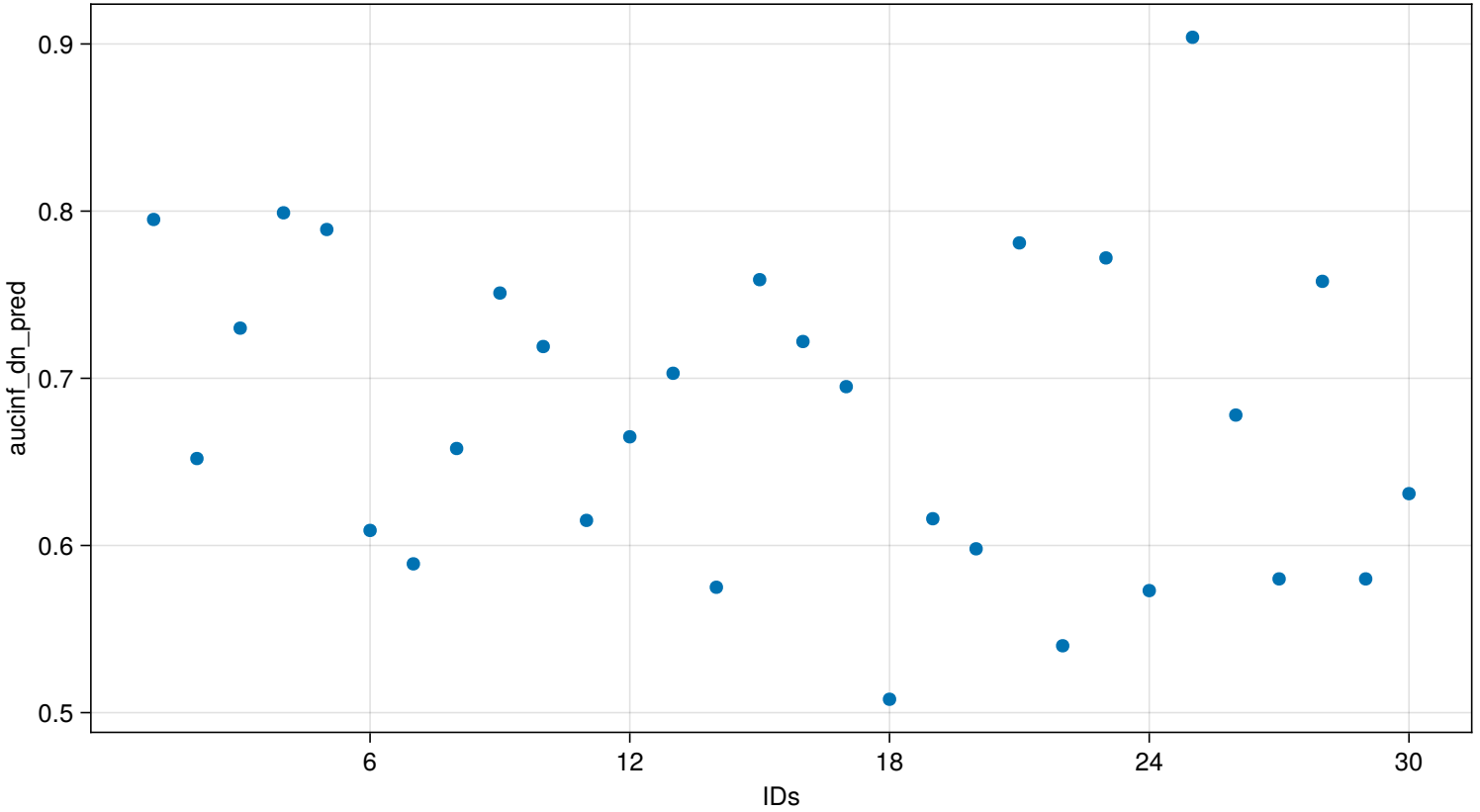

Figure 73: Parameter (aucinf_dn_pred) vs Group

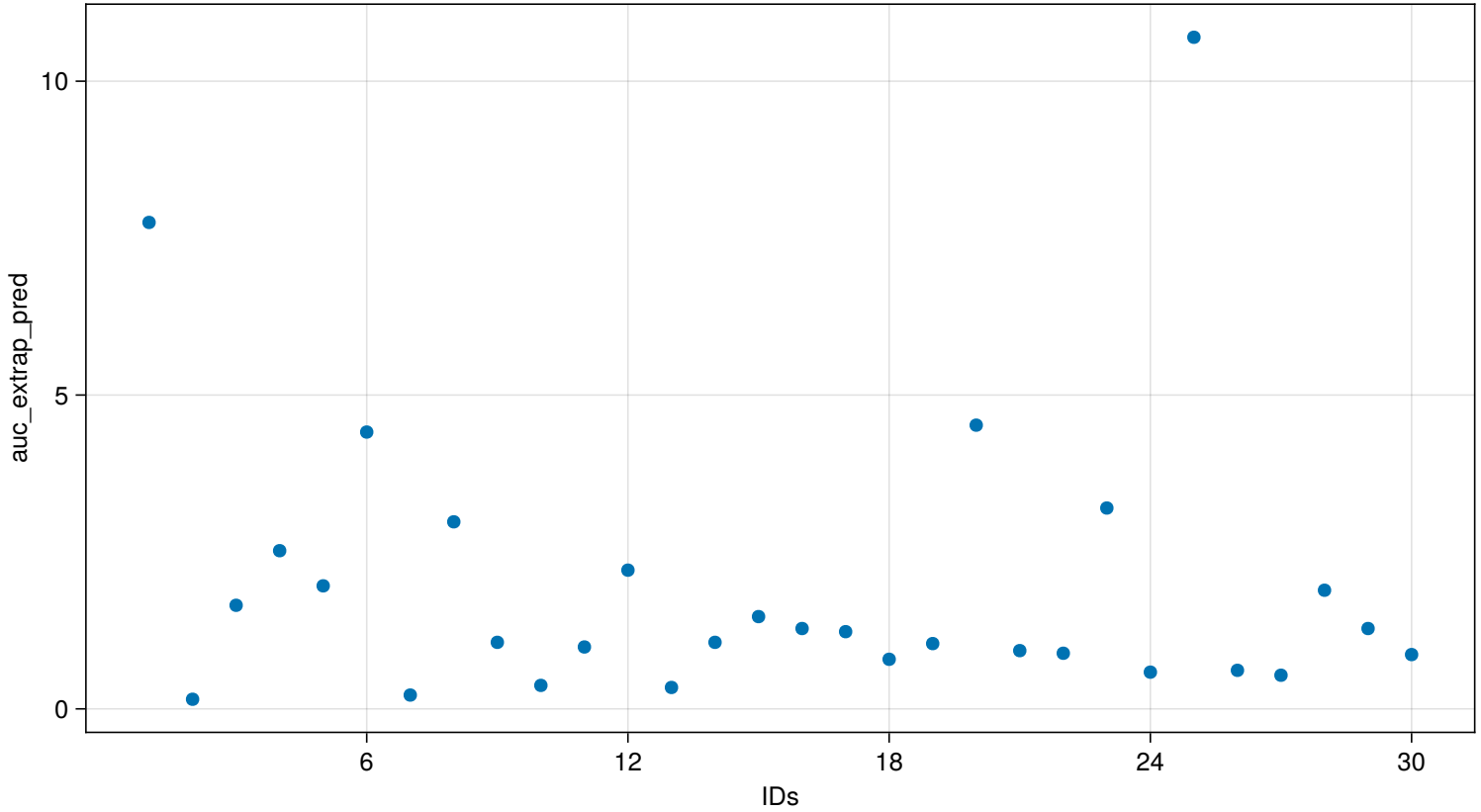

Figure 74: Parameter (auc_extrap_pred) vs Group

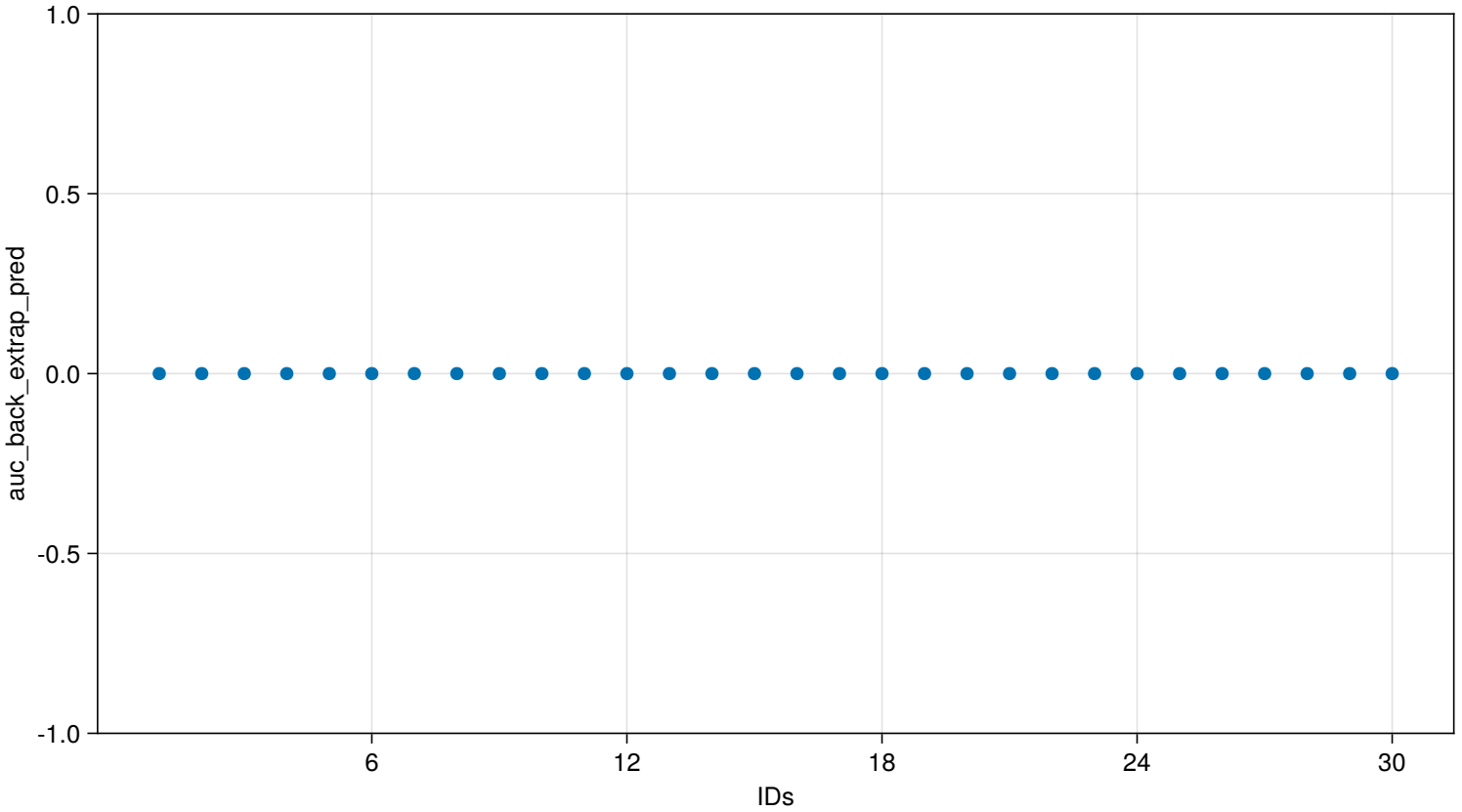

Figure 75: Parameter (auc_back_extrap_pred) vs Group

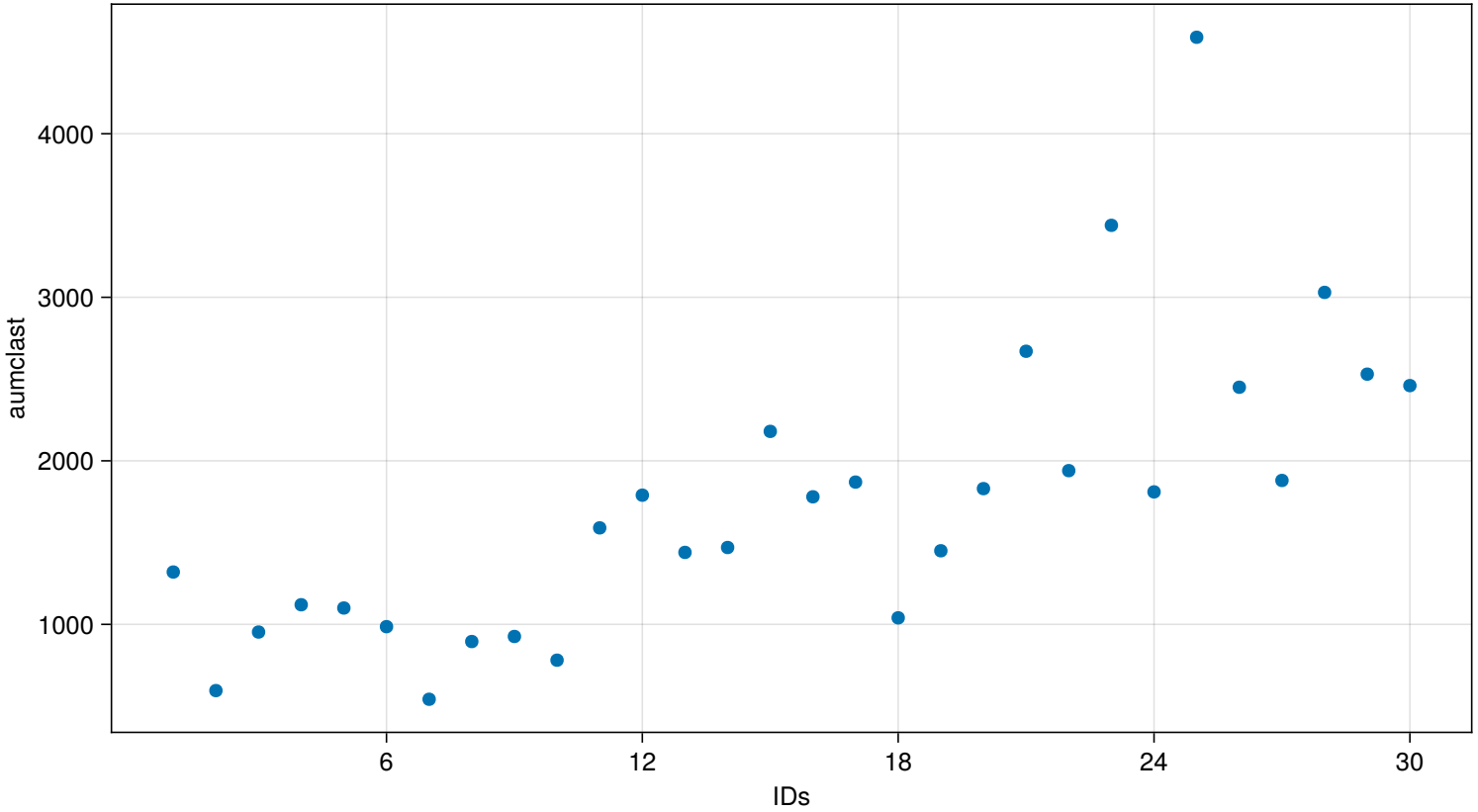

Figure 76: Parameter (aumclast) vs Group

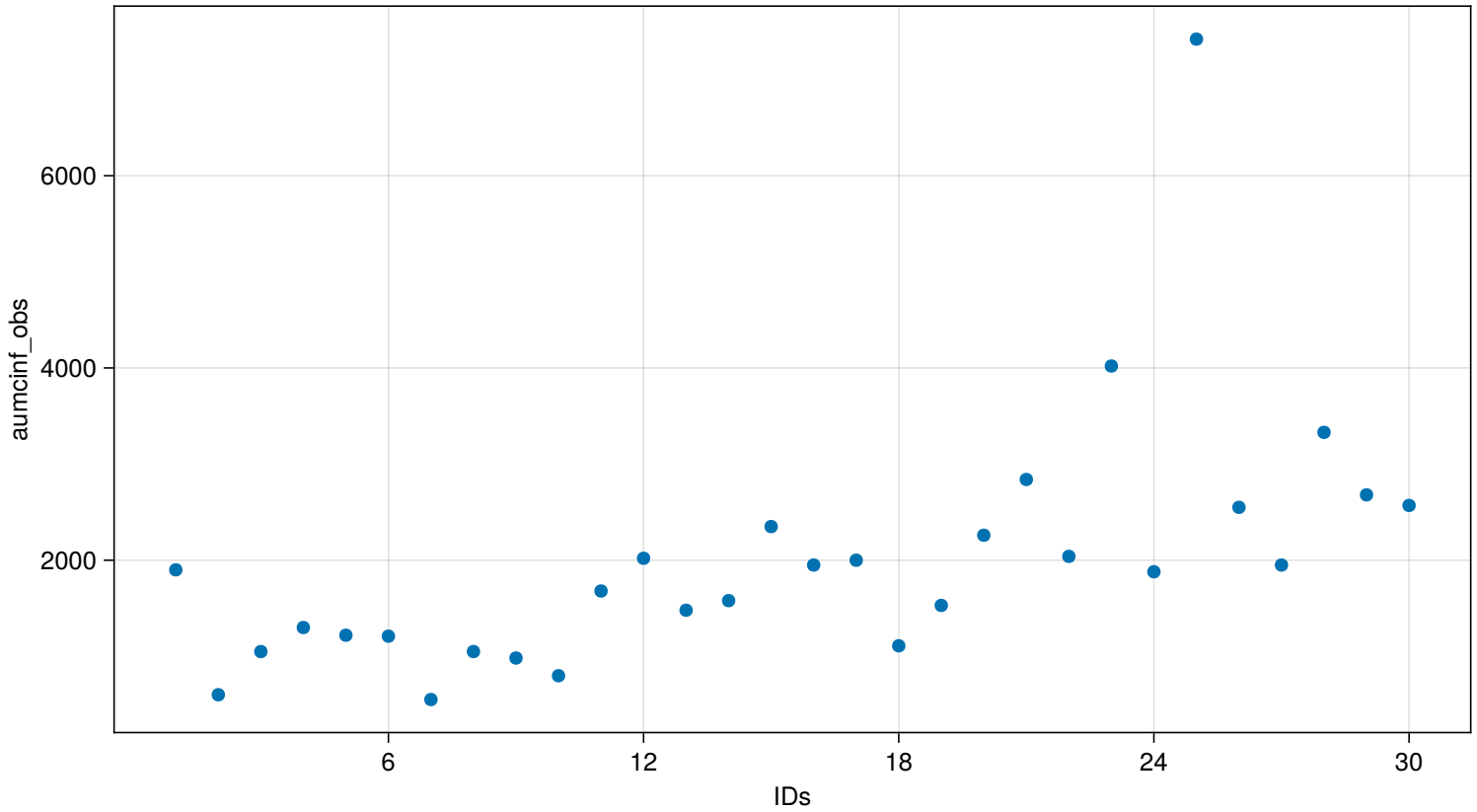

Figure 77: Parameter (aumcinf_obs) vs Group

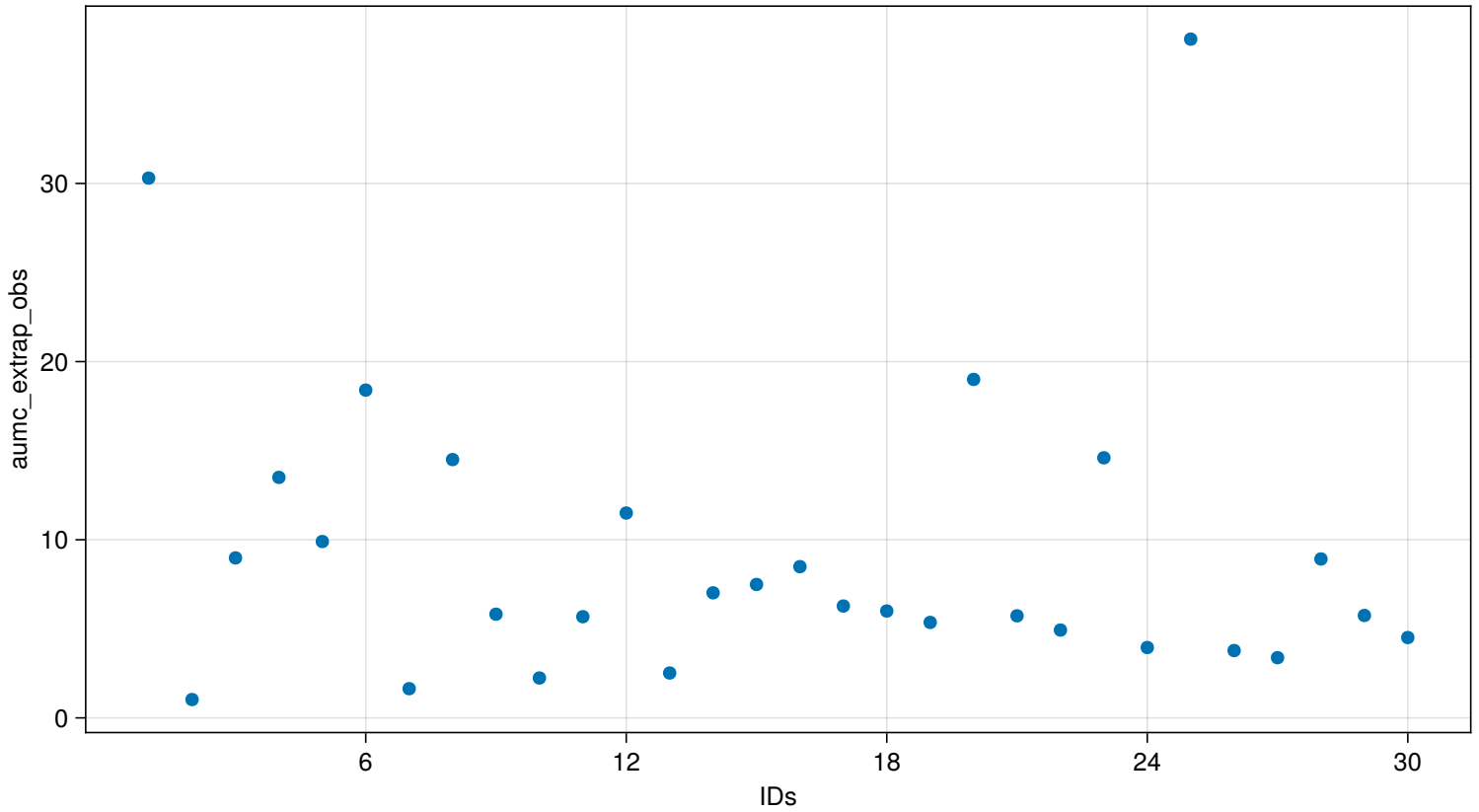

Figure 78: Parameter (aumc_extrap_obs) vs Group

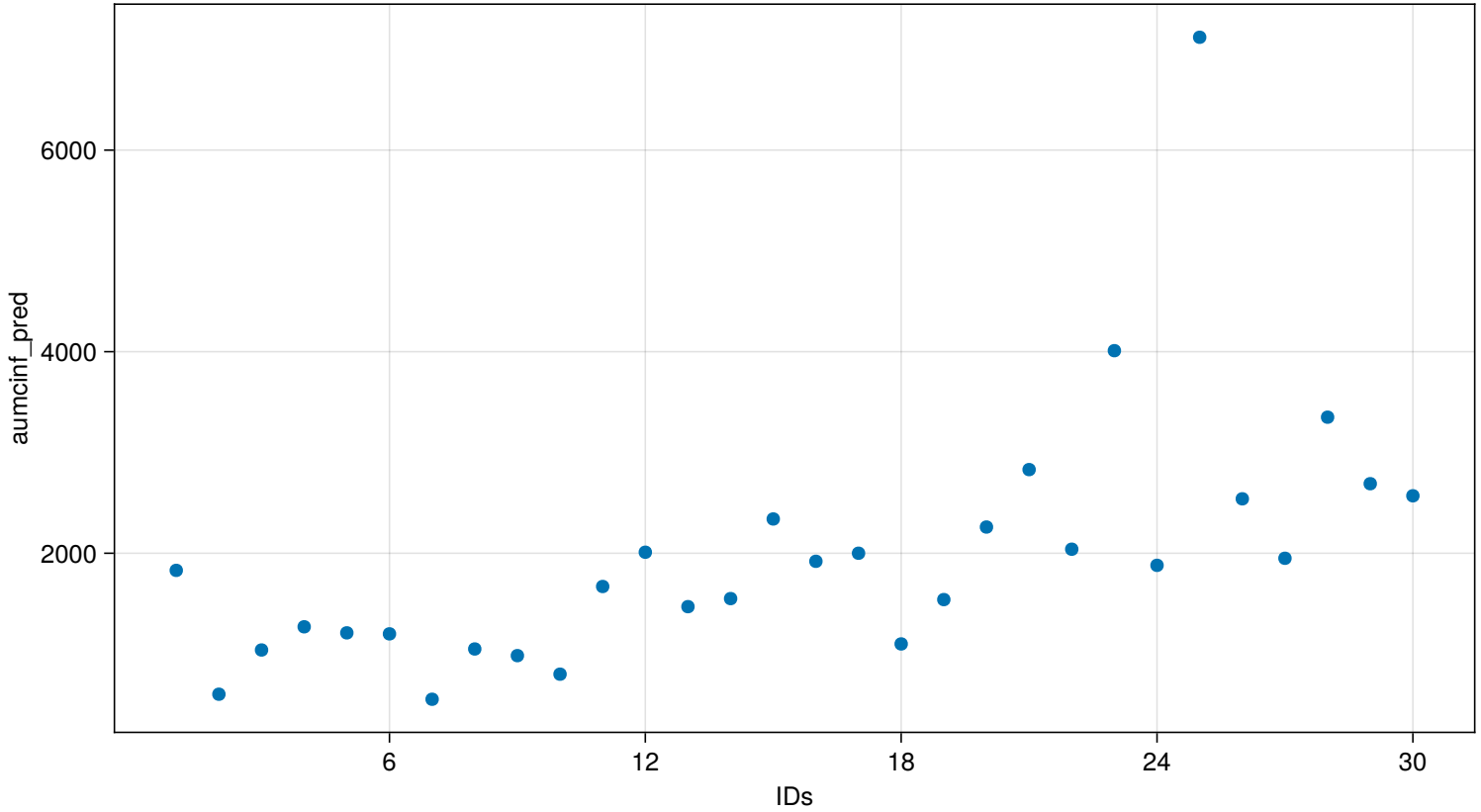

Figure 79: Parameter (aumcinf_pred) vs Group

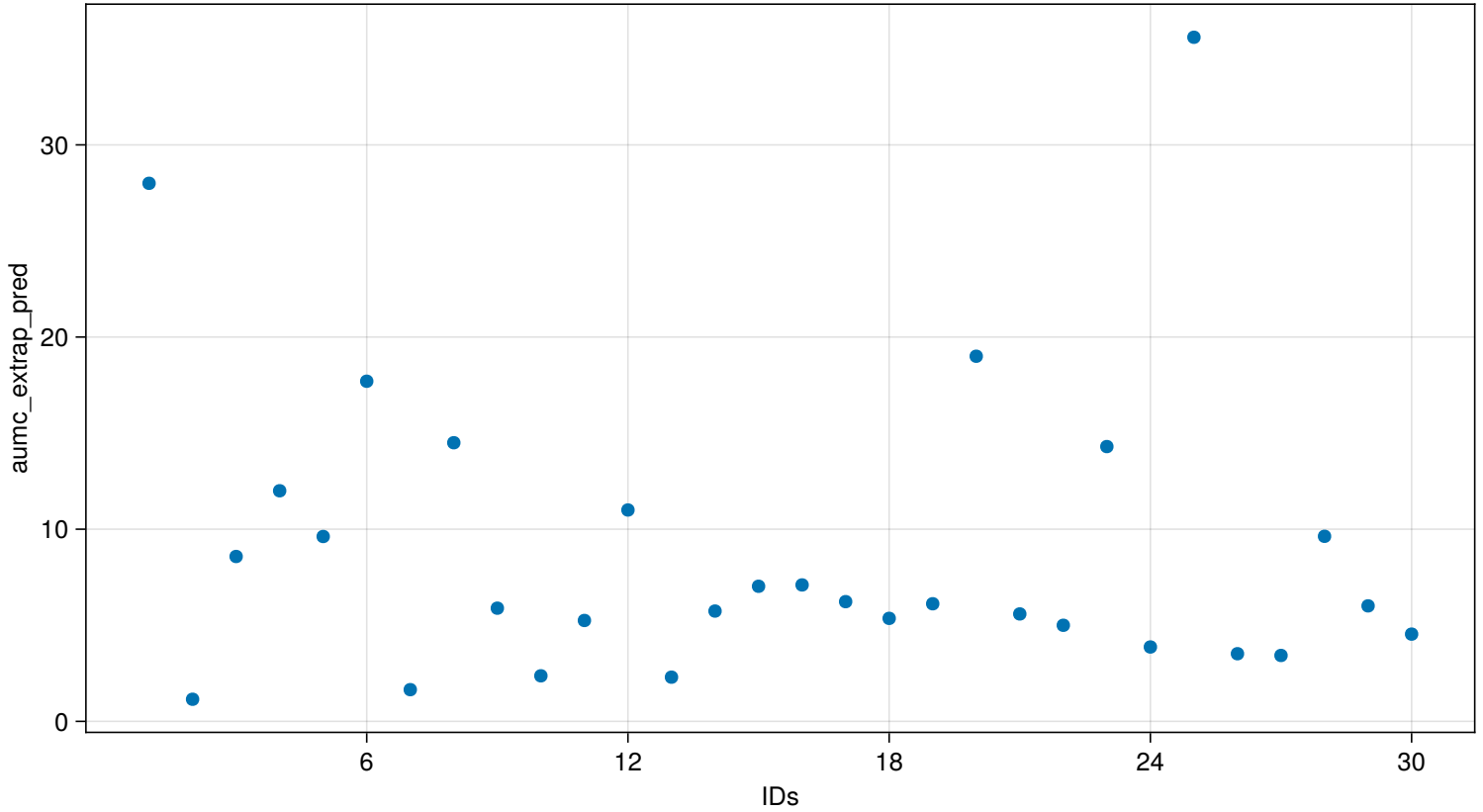

Figure 80: Parameter (aumc_extrap_pred) vs Group

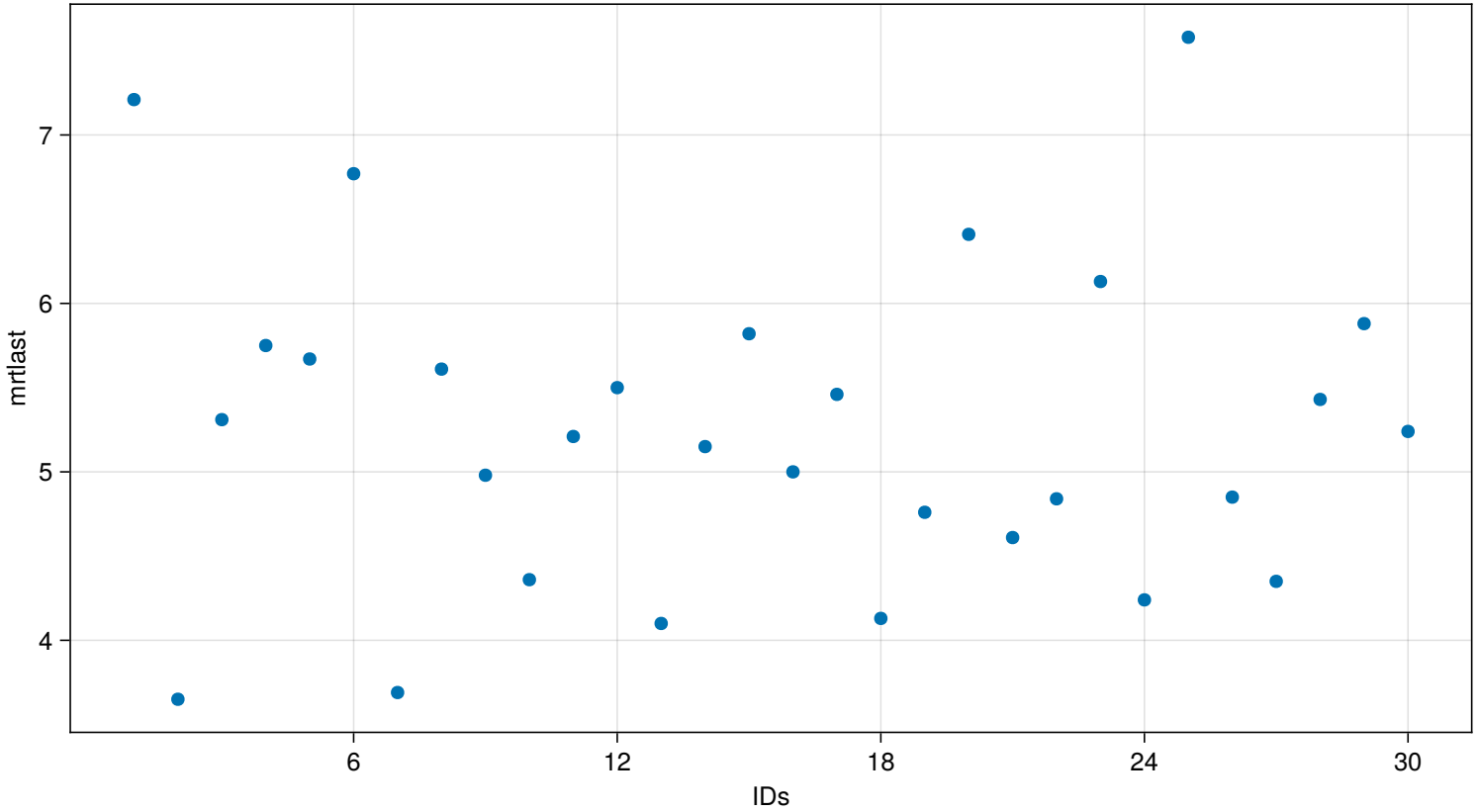

Figure 81: Parameter (mrtlast) vs Group

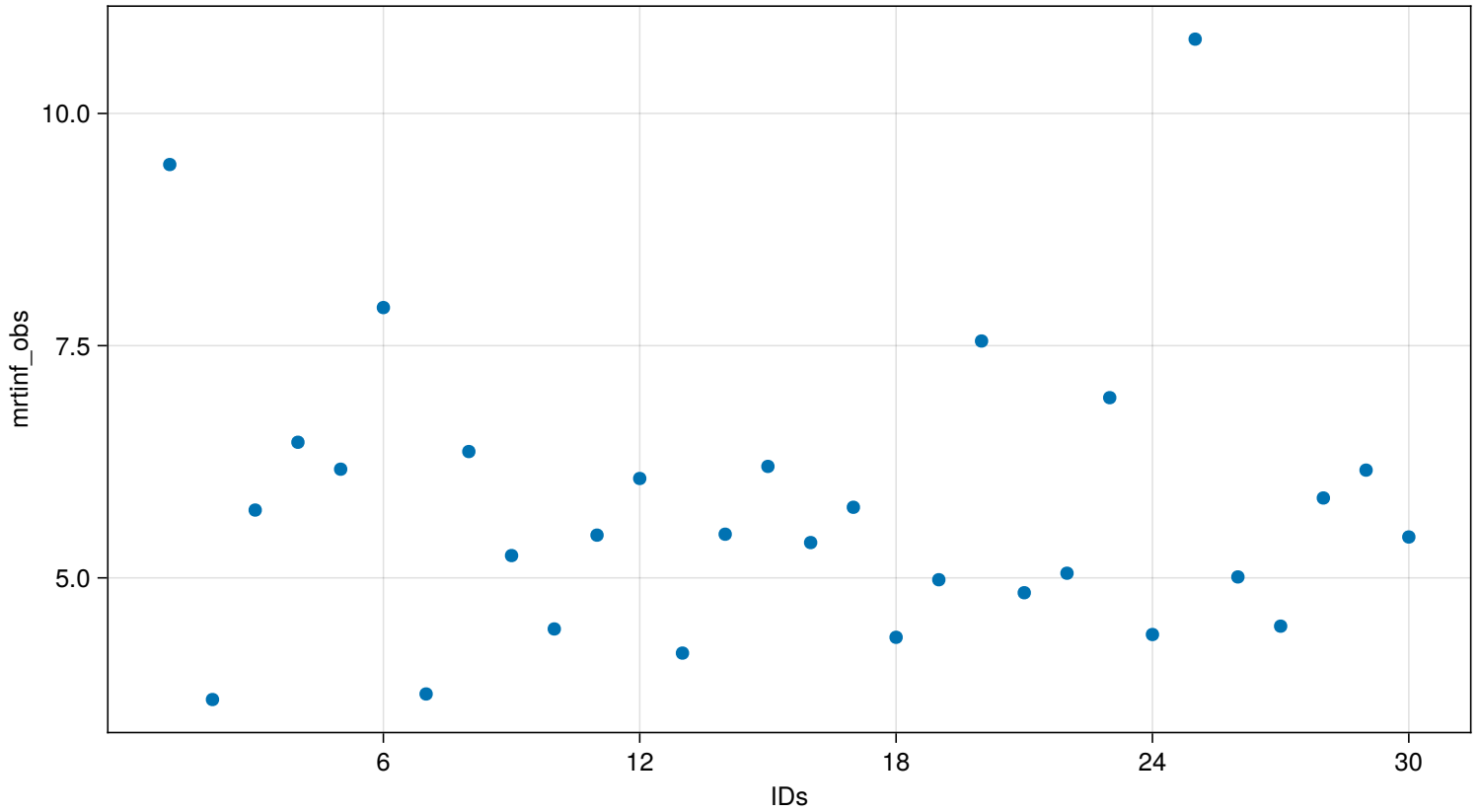

Figure 82: Parameter (mrtinf_obs) vs Group

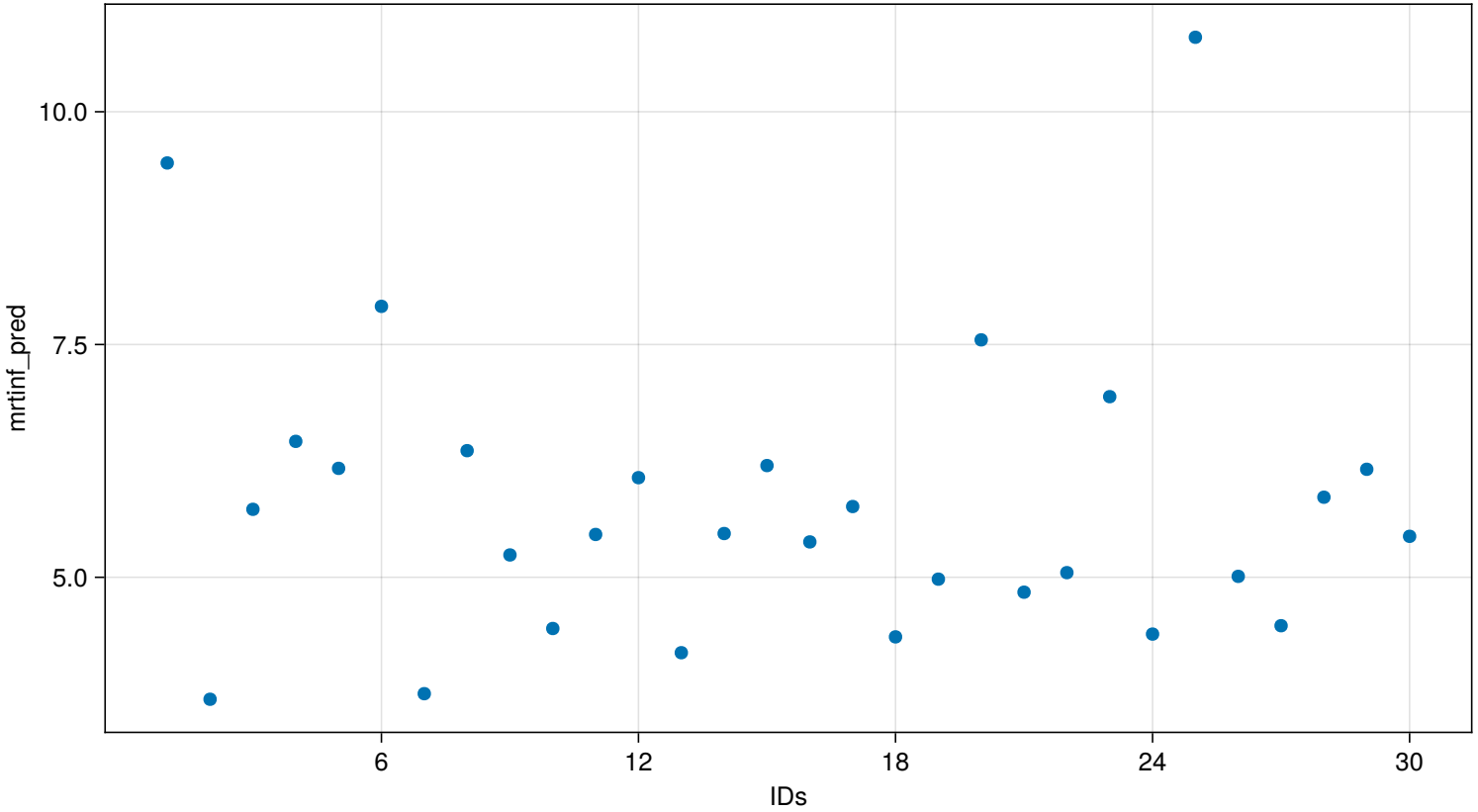

Figure 83: Parameter (mrtinf_pred) vs Group

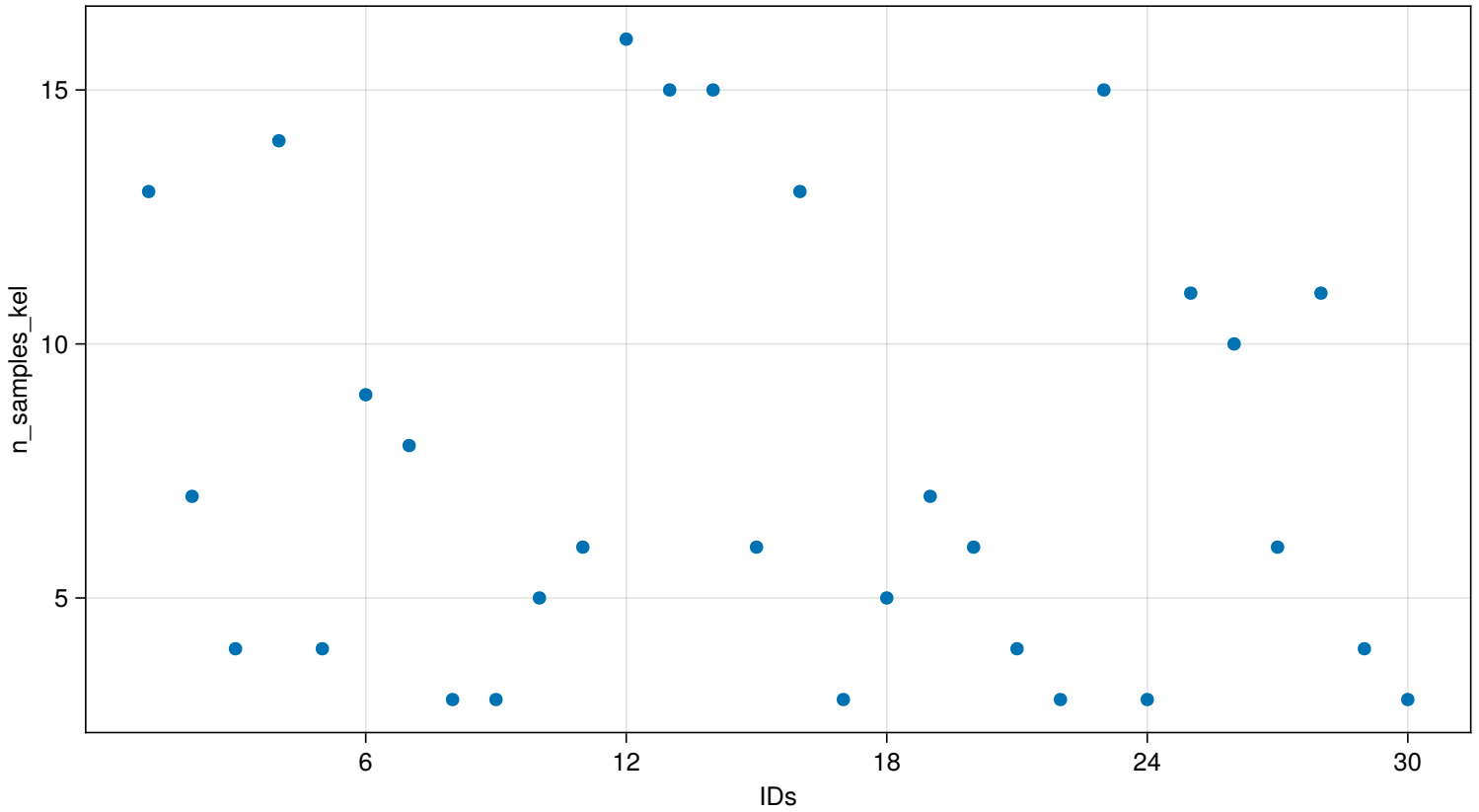

Figure 84: Parameter (n_samples_kel) vs Group

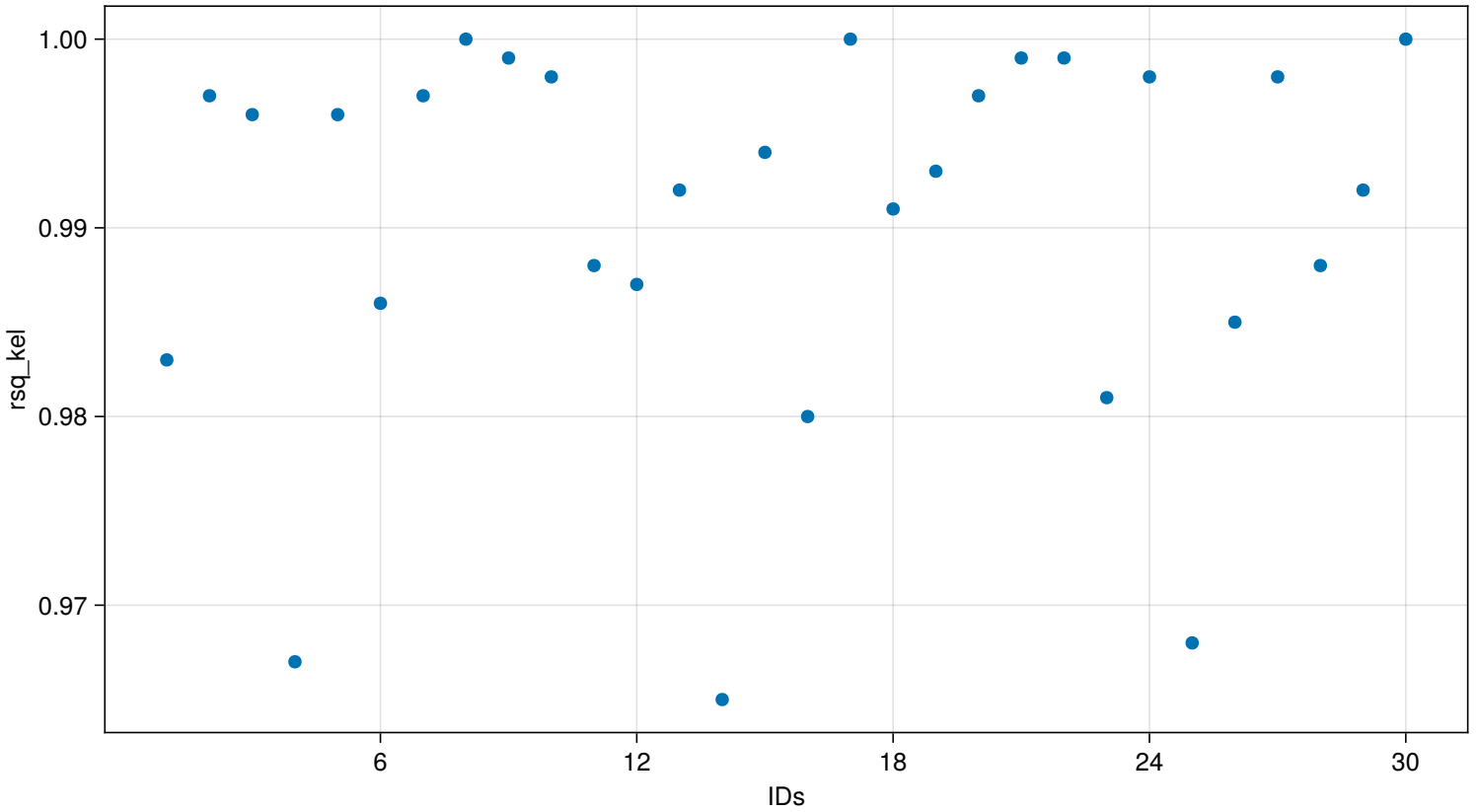

Figure 85: Parameter (rsq_kel) vs Group

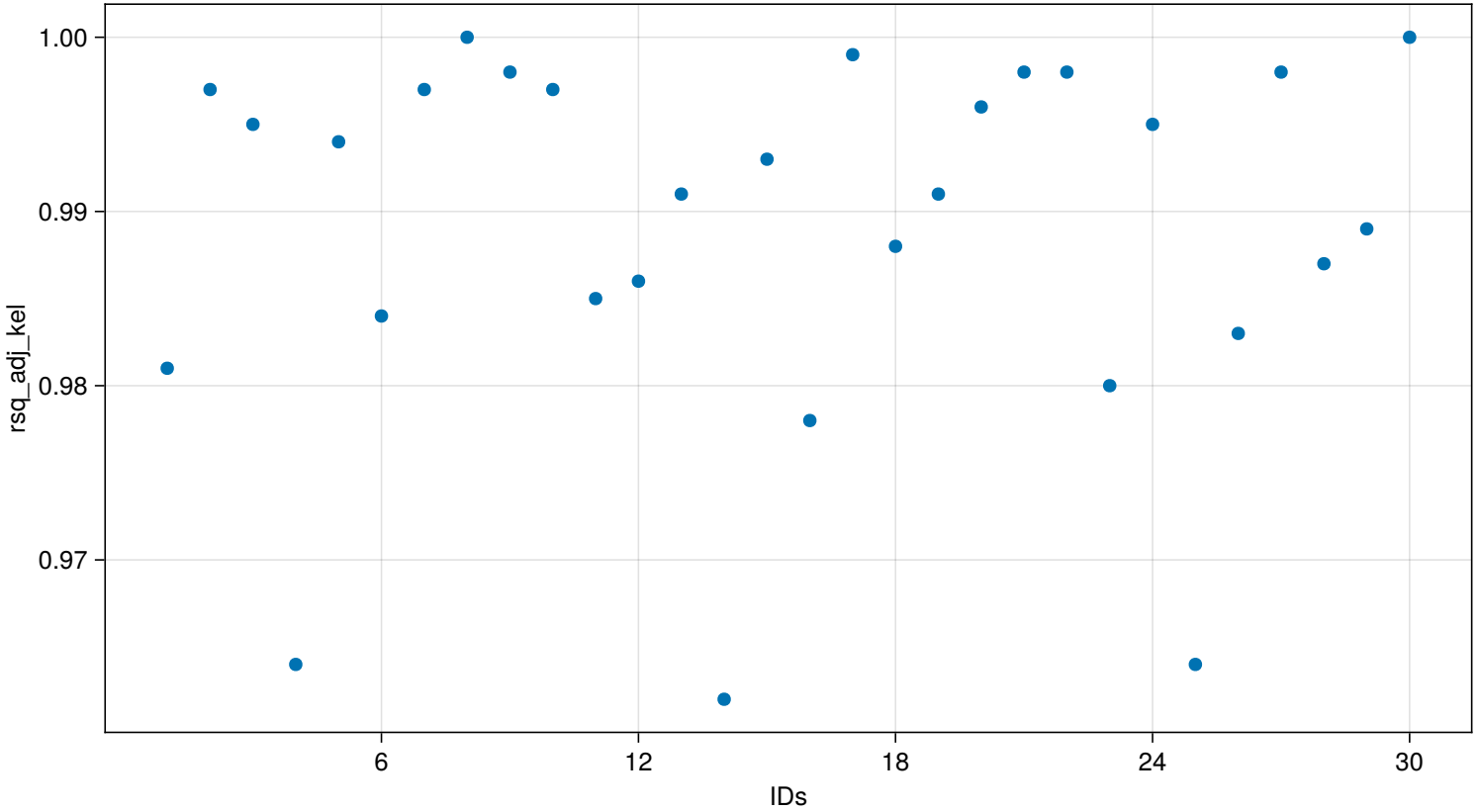

Figure 86: Parameter (rsq_adj_kel) vs Group

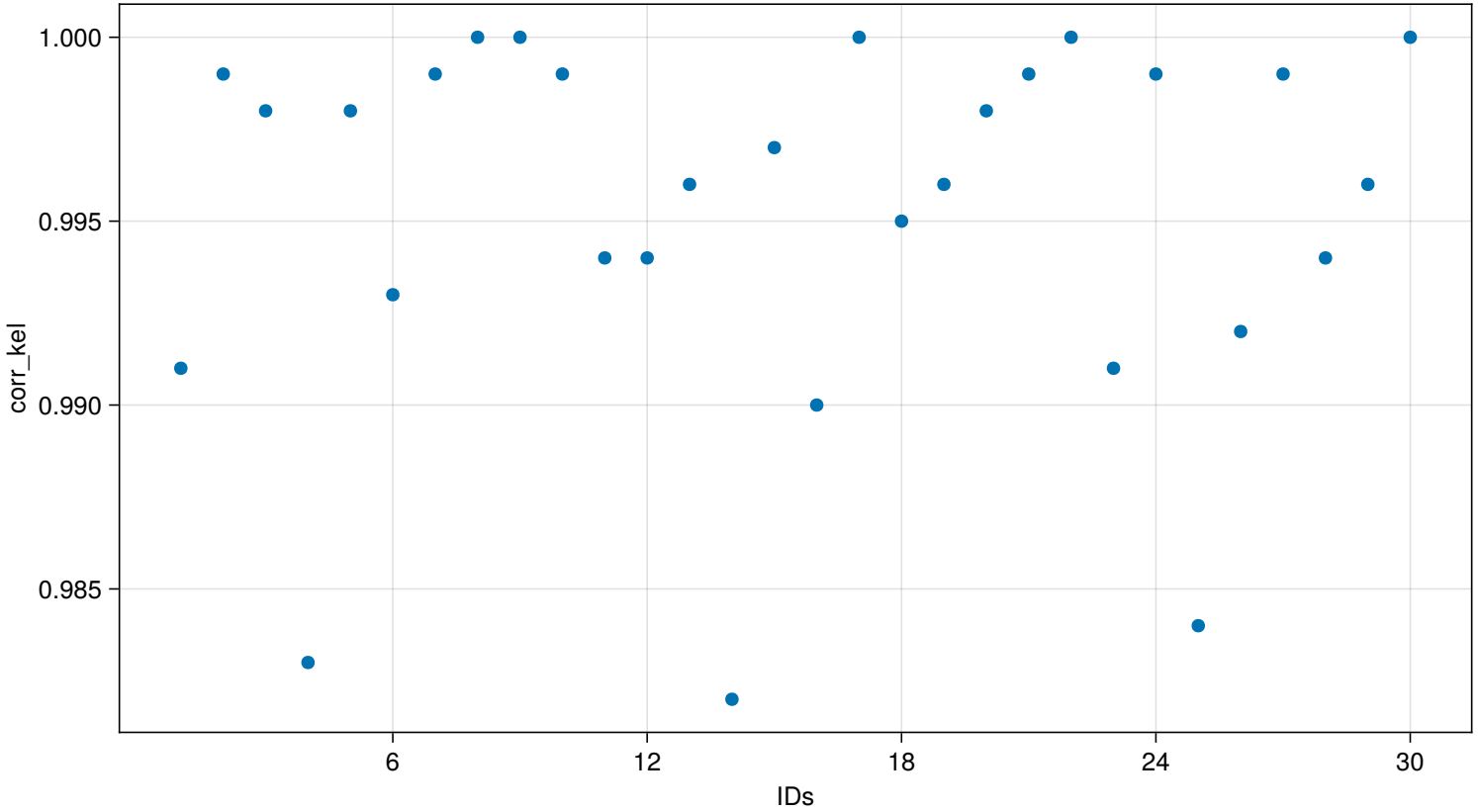

Figure 87: Parameter (corr_kel) vs Group

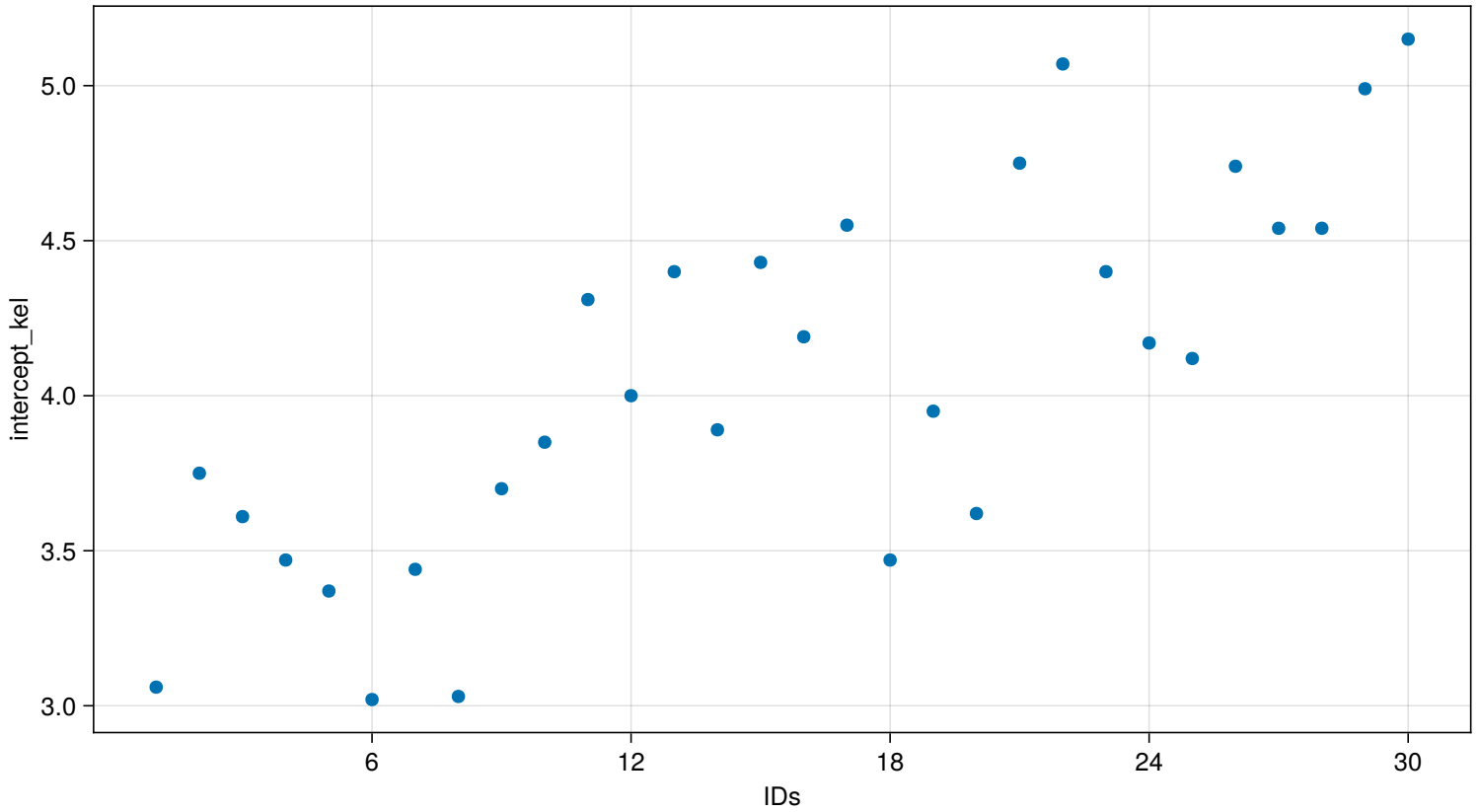

Figure 88: Parameter (intercept_kel) vs Group

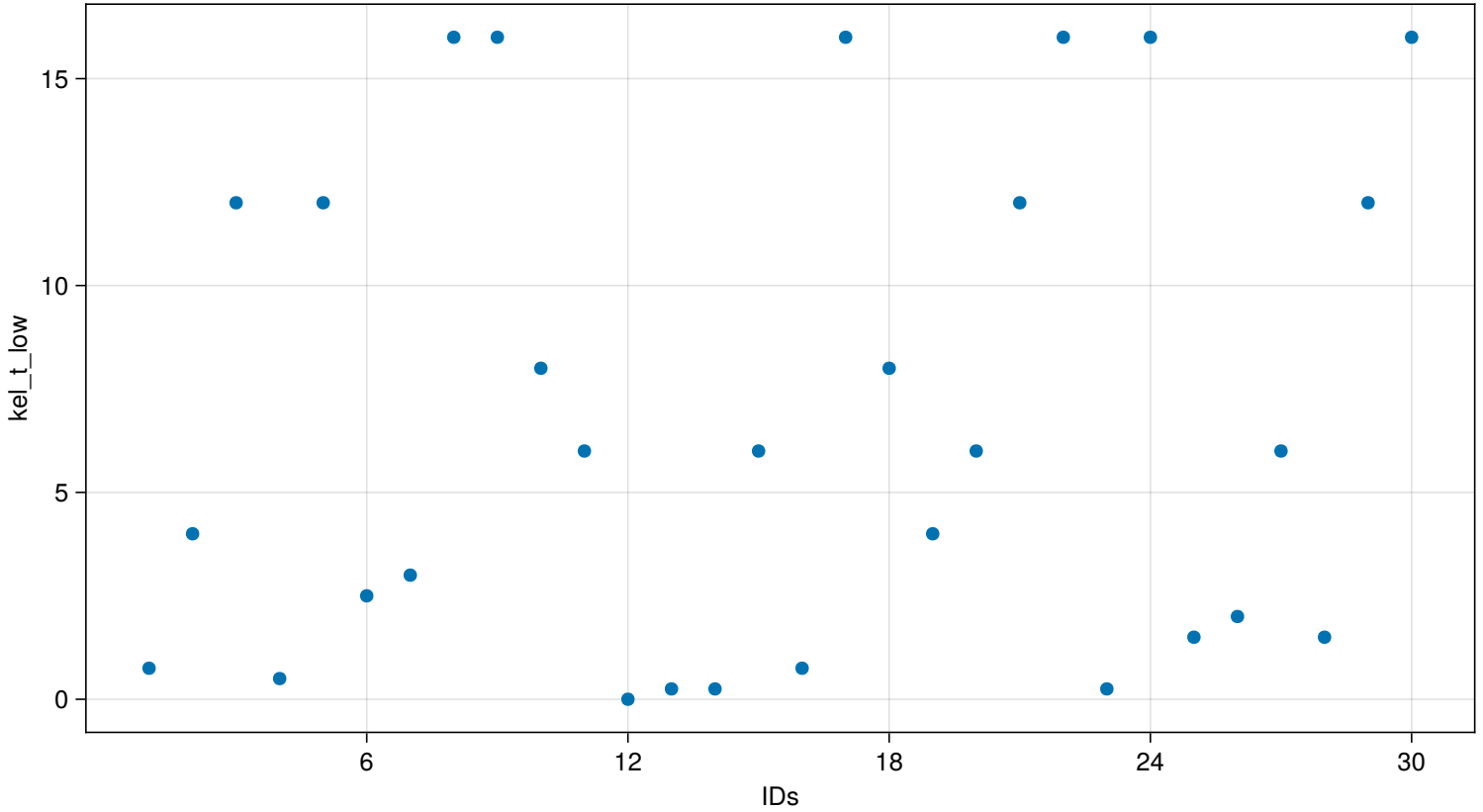

Figure 89: Parameter (kel_t_low) vs Group

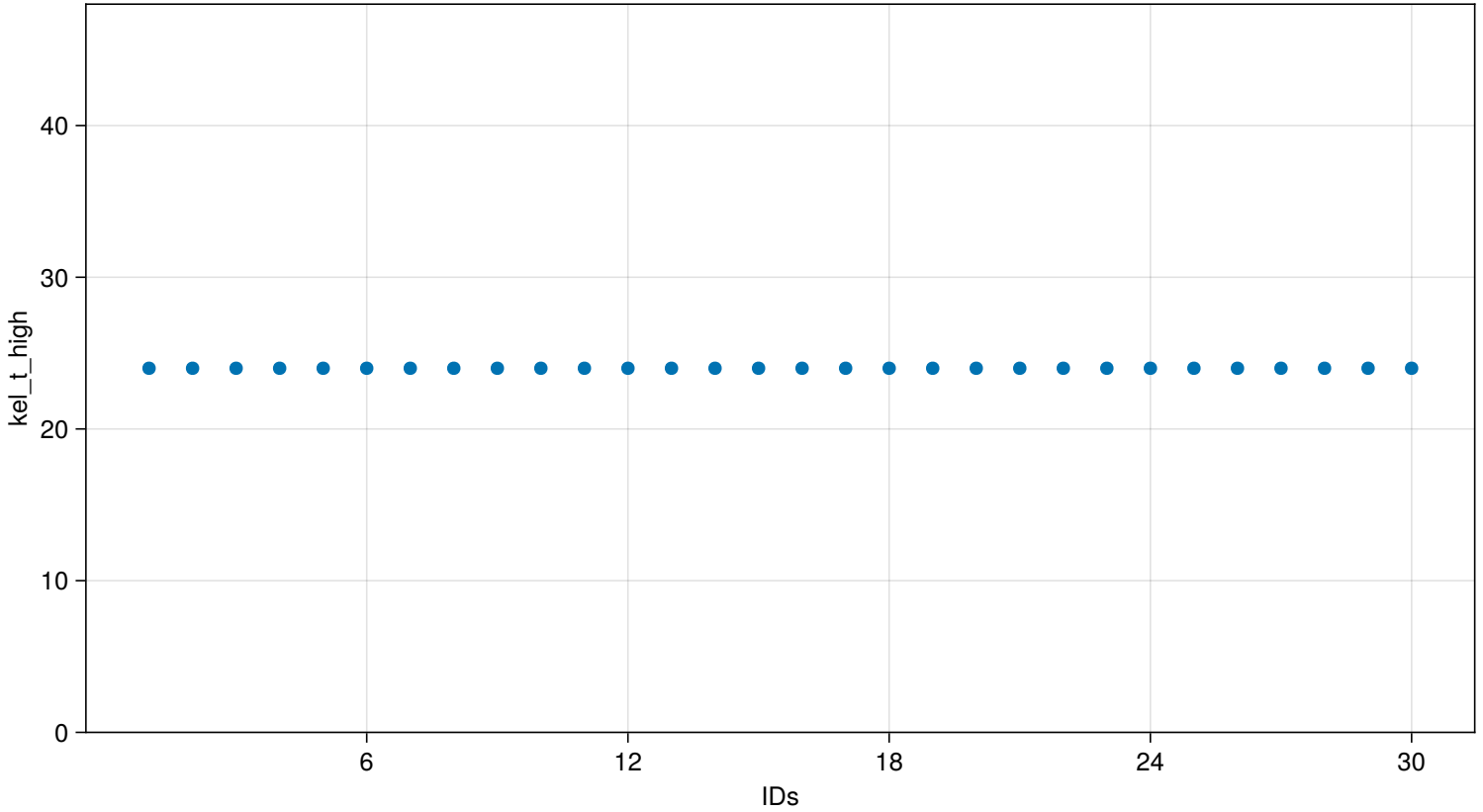

Figure 90: Parameter (kel_t_high) vs Group

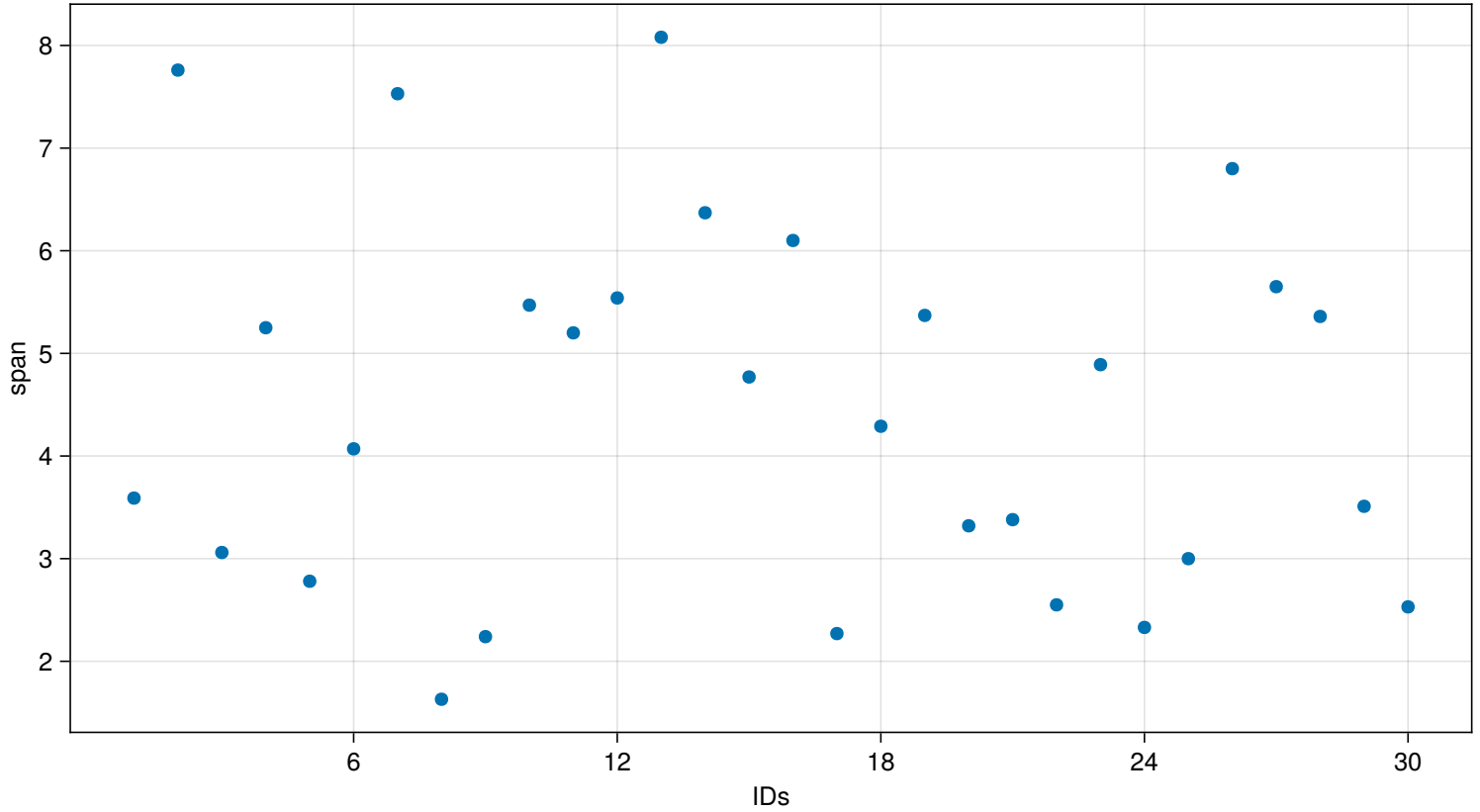

Figure 91: Parameter (span) vs Group

A Subject Fits

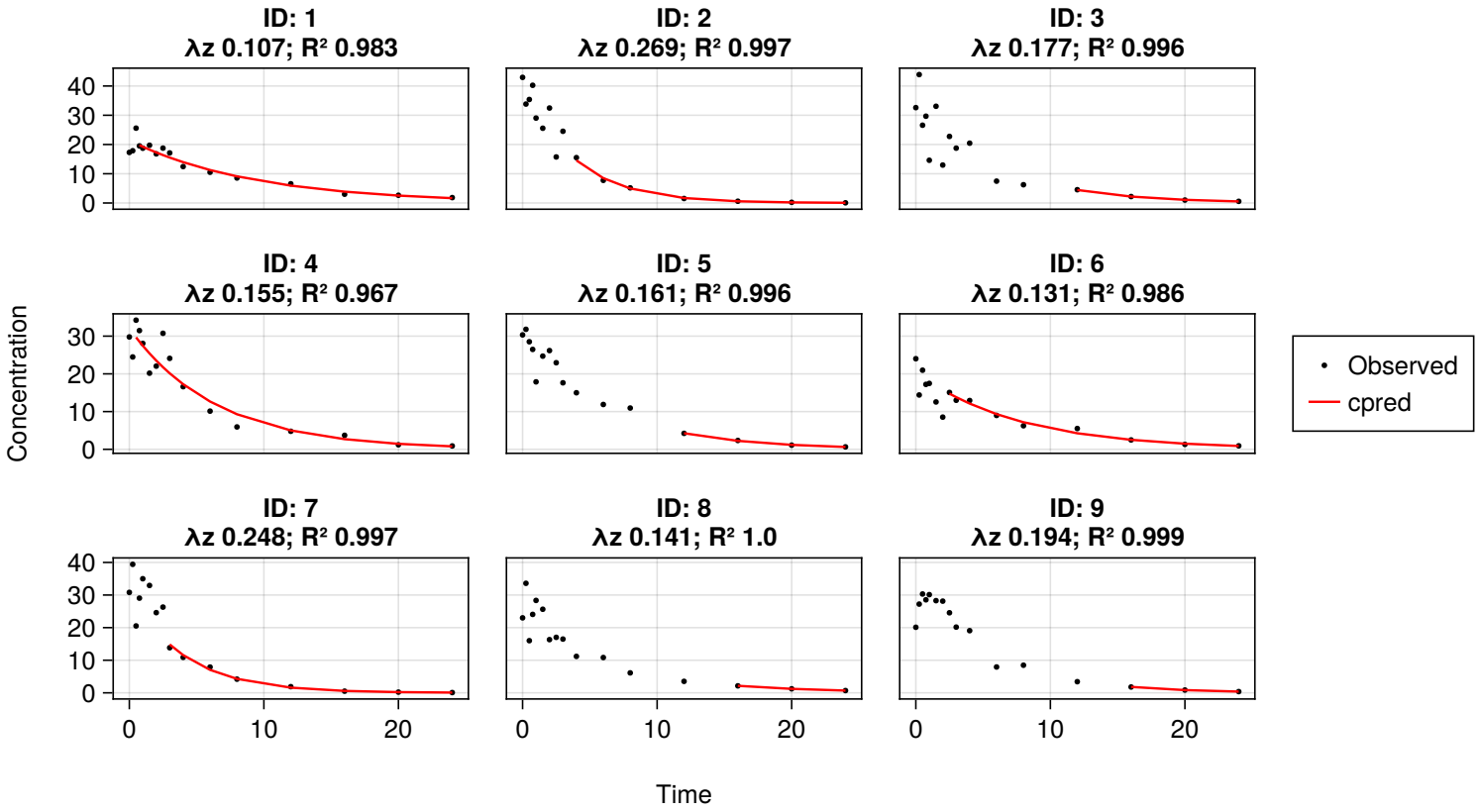

Figure 92: Subject Fits (1 of 4).

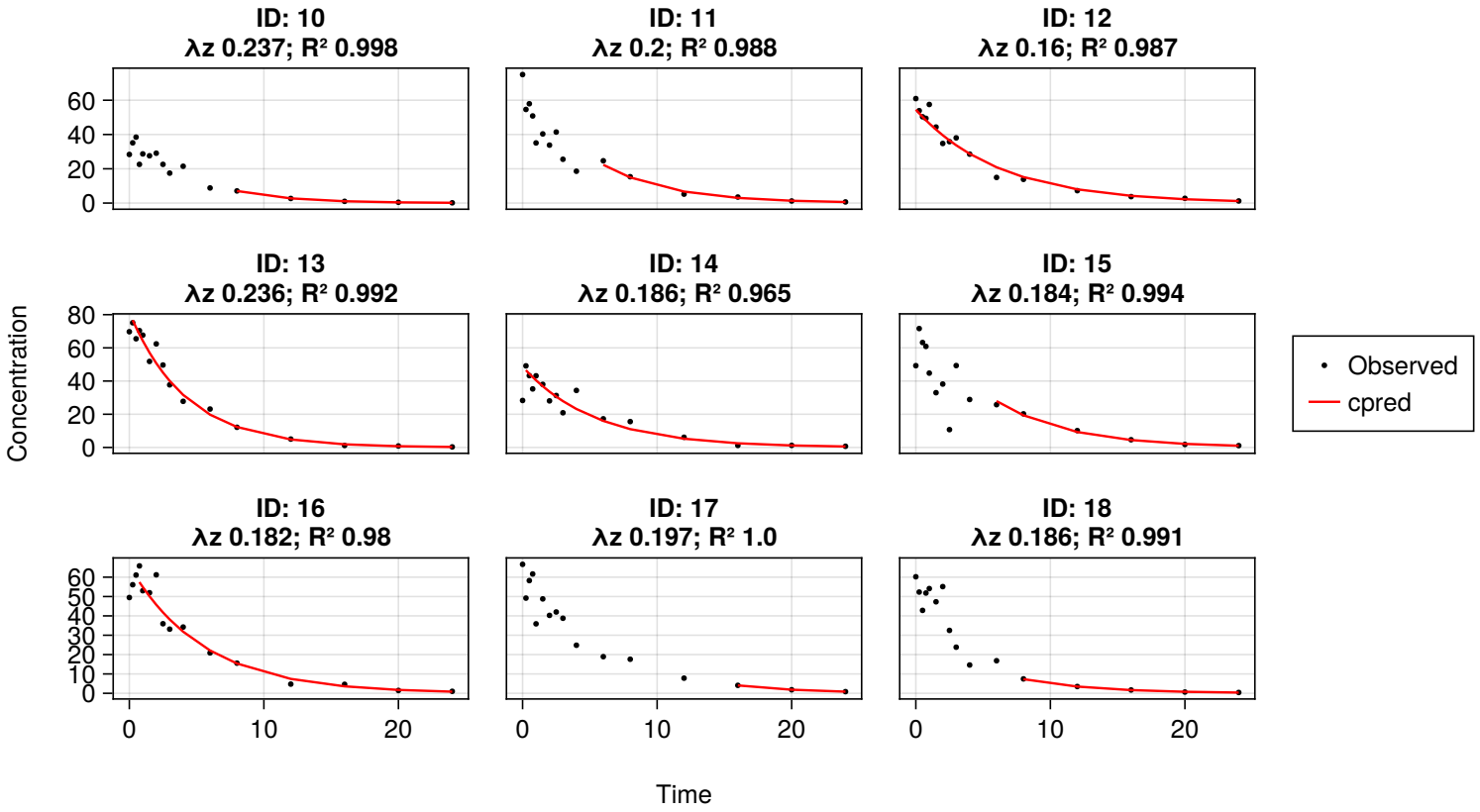

Figure 93: Subject Fits (2 of 4).

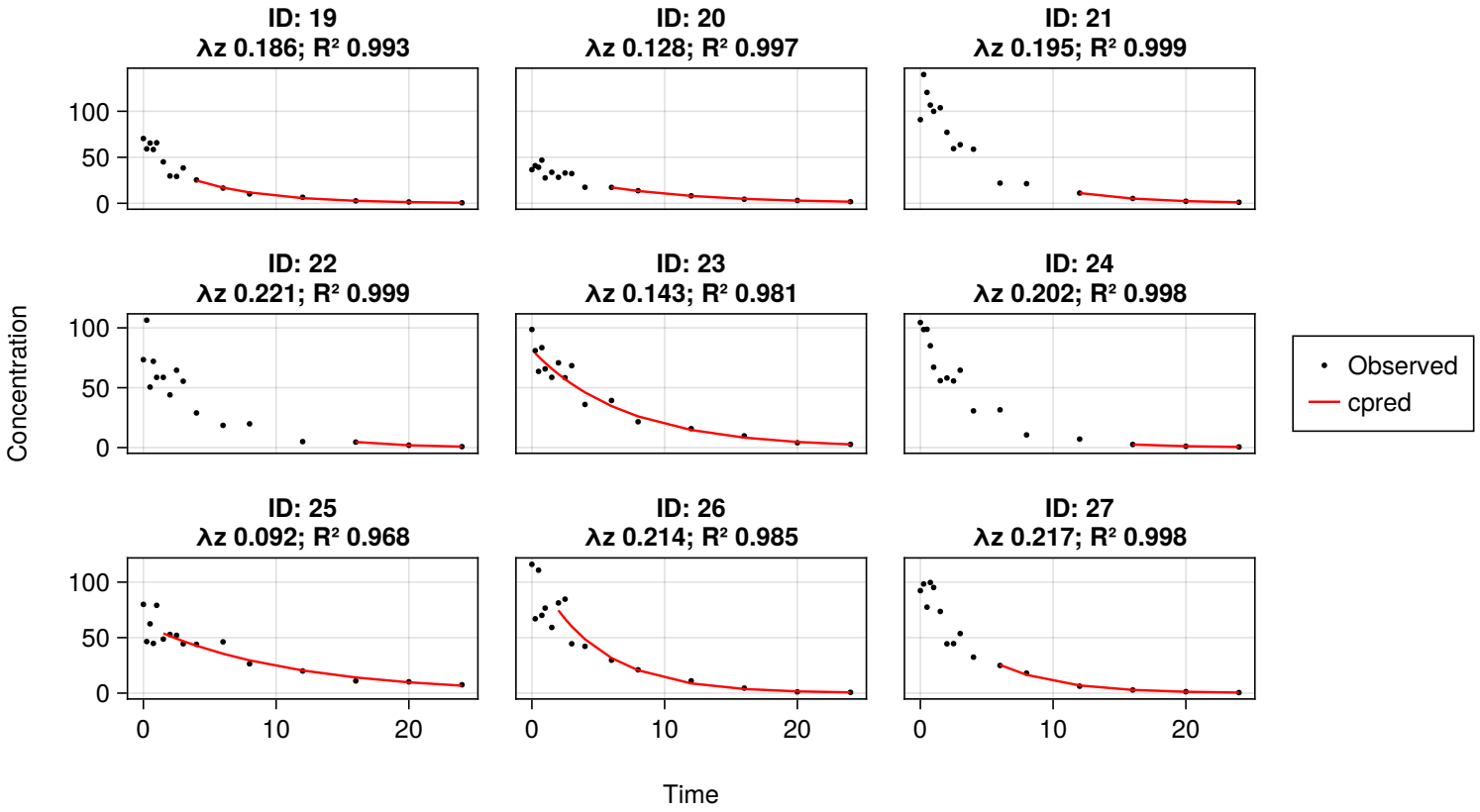

Figure 94: Subject Fits (3 of 4).

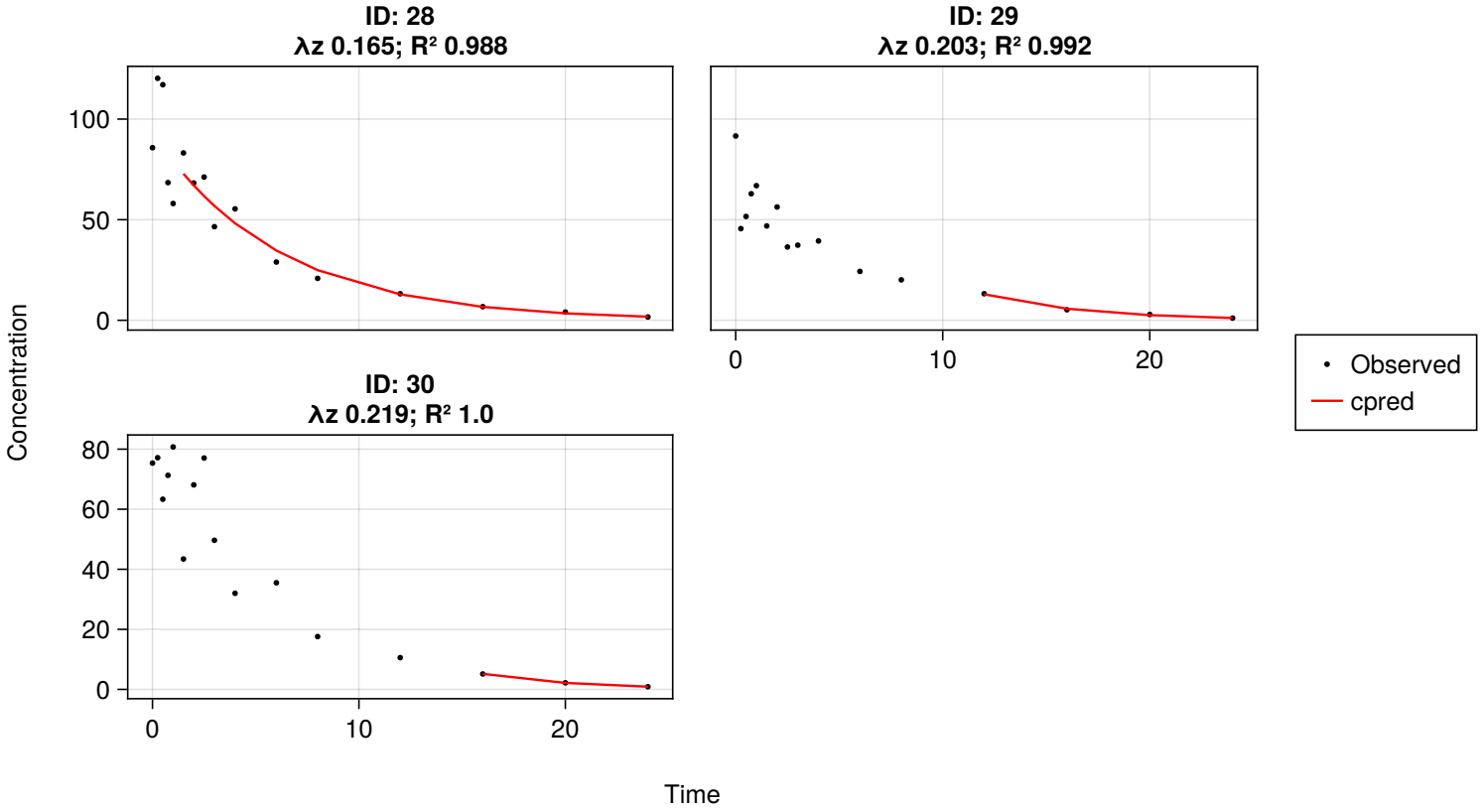

Figure 95: Subject Fits (4 of 4).

B System Information

```
Julia Version 1.9.2
Commit e4ee485e90 (2023-07-05 09:39 UTC)
Platform Info:
  OS: Windows (x86_64-w64-mingw32)
      Microsoft Windows [Version 10.0.20348.1726]
  CPU: Intel(R) Xeon(R) Platinum 8259CL CPU @ 2.50GHz:
              speed         user         nice          sys         idle          irq
       #1  2500 MHz     122671            0       286625      1181390       233875  ticks
       #2  2500 MHz     134609            0        45390      1410687         4359  ticks
       #3  2500 MHz     211234            0        77125      1302328         2640  ticks
       #4  2500 MHz     127734            0        42062      1420656         1171  ticks
       #5  2500 MHz     189125            0        78218      1323109         5359  ticks
       #6  2500 MHz     157359            0        34718      1398375         2687  ticks
       #7  2500 MHz     202781            0        67234      1320437         2156  ticks
       #8  2500 MHz     125125            0        37421      1427906          828  ticks
  Memory: 31.630901336669922 GB (26532.44921875 MB free)
  Uptime: 1590.687 sec
  Load Avg:  0.0  0.0  0.0
  WORD_SIZE: 64
  LIBM: libopenlibm
  LLVM: libLLVM-14.0.6 (ORCJIT, skylake-avx512)
  Threads: 2 on 8 virtual cores
Environment:
  JULIA_DEPOT_PATH = D:\Users\RoshKon1\.julia;D:\Users\RoshKon1\AppData\Local\Pumas-v2.4.1\
      ↪ Julia-1.9.2\local\share\julia;D:\Users\RoshKon1\AppData\Local\Pumas-v2.4.1\Julia
      ↪ -1.9.2\share\julia
  JULIA_LOAD_PATH = D:\Users\RoshKon1\.julia\environments\Pumas_v2.4.1;@;@v#.#;@stdlib
  JULIA_NUM_THREADS = 2
  JULIA_PKG_SERVER = pkg.julialang.org
  JULIA_EDITOR = code
  FONTCONFIG_PATH = D:\Users\RoshKon1\.julia\artifacts\
      ↪ be75bce183282b09d5afa393777e1c4d09e36f6c\etc\fonts
  HOMEDRIVE = D:
  HOMEPATH = \Users\RoshKon1
  PATH = C:\Windows\system32;C:\Windows;C:\Windows\System32\Wbem;C:\Windows\System32\
      ↪ WindowsPowerShell\v1.0\;C:\Windows\System32\OpenSSH\;C:\Program Files\Amazon\cfn-
      ↪ bootstrap\;C:\Program Files\Microsoft VS Code\bin;C:\Program Files\Git\cmd;D:\
      ↪ Users\RoshKon1\AppData\Local\Microsoft\WindowsApps;D:\Users\RoshKon1\AppData\Local
      ↪ \Pumas-v2.4.1\Julia-1.9.2\bin;D:\Users\RoshKon1\AppData\Local\Programs\Julia
      ↪ -1.9.3\bin
  PATHEXT = .COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH;.MSC
  PSMODULEPATH = C:\Program Files\WindowsPowerShell\Modules;C:\Windows\system32\
      ↪ WindowsPowerShell\v1.0\Modules;C:\Program Files (x86)\AWS Tools\PowerShell\
```

B.1 NCA Version

```
Status `C:\a\PumasSystemImages\PumasSystemImages\sysimage_env\Manifest.toml`^
 [29142fd5] NCA v2.5.5^
 [b07d0016] NCAUtilities v0.9.5
Info Packages marked with ^ have new versions available and may be upgradable.
```

B.2 Project Manifest

```
Status `D:\Users\RoshKon1\.julia\environments\v1.9\Manifest.toml`
  [d1d4a3ce] BitFlags v0.1.7⌃
 [944b1d66] CodecZlib v0.7.1⌃
 [f0e56b4a] ConcurrentUtilities v2.2.0⌃
 [5218b696] Configurations v0.17.4
  [9a962f9c] DataAPI v1.15.0
  [e2d170a0] DataValueInterfaces v1.0.0⌃
 [55351af7] ExproniconLite v0.7.11⌃
 [fb4132e2] FuzzyCompletions v0.5.1
  [d7ba0133] Git v1.3.0⌃
 [cd3eb016] HTTP v1.9.6
  [ac1192a8] HypertextLiteral v0.9.4
  [82899510] IteratorInterfaceExtensions v1.0.0⌃
 [692b3bcd] JLLWrappers v1.4.1
  [0e77f7df] LazilyInitializedFields v1.2.1⌃
 [e6f89c97] LoggingExtras v0.4.9
  [6c6e2e6c] MIMEs v0.1.4
  [739be429] MbedTLS v1.1.7
  [99f44e22] MsgPack v1.2.0
  [4d8831e6] OpenSSL v1.4.1⌃
 [bac558e1] OrderedCollections v1.6.0⌃
 [c3e4b0f8] Pluto v0.19.26
  [91cefc8d] PrecompileSignatures v3.0.3⌃
 [aea7be01] PrecompileTools v1.1.2⌃
 [21216c6a] Preferences v1.4.0
  [2792f1a3] RegistryInstances v0.1.0⌃
 [05181044] RelocatableFolders v1.0.0
  [6c6a2e73] Scratch v1.2.0
  [777ac1f9] SimpleBufferStream v1.1.0
  [3783bdb8] TableTraits v1.0.1⌃
 [bd369af6] Tables v1.10.1⌃
 [3bb67fe8] TranscodingStreams v0.9.13⌃
 [410a4b4d] Tricks v0.1.7⌃
 [5c2747f8] URIs v1.4.2⌃
 [2e619515] Expat_jll v2.4.8+0
  [f8c6e375] Git_jll v2.36.1+2⌃
 [94ce4f54] Libiconv_jll v1.16.1+2⌃
 [458c3c95] OpenSSL_jll v1.1.21+0
  [0dad84c5] ArgTools v1.1.1
  [56f22d72] Artifacts
  [2a0f44e3] Base64
  [ade2ca70] Dates
  [8ba89e20] Distributed
  [f43a241f] Downloads v1.6.0
  [7b1f6079] FileWatching
  [b77e0a4c] InteractiveUtils
  [b27032c2] LibCURL v0.6.3
  [76f85450] LibGit2
  [8f399da3] Libdl
  [37e2e46d] LinearAlgebra
  [56ddb016] Logging
  [d6f4376e] Markdown
  [ca575930] NetworkOptions v1.2.0
  [44cfe95a] Pkg v1.9.2
  [de0858da] Printf
  [3fa0cd96] REPL
  [9a3f8284] Random
  [ea8e919c] SHA v0.7.0
  [9e88b42a] Serialization
```

```
  [6462fe0b] Sockets
  [fa267f1f] TOML v1.0.3
  [a4e569a6] Tar v1.10.0
  [8dfed614] Test
  [cf7118a7] UUIDs
  [4ec0a83e] Unicode
  [e66e0078] CompilerSupportLibraries_jll v1.0.5+0
  [deac9b47] LibCURL_jll v7.84.0+0
  [29816b5a] LibSSH2_jll v1.10.2+0
  [c8ffd9c3] MbedTLS_jll v2.28.2+0
  [14a3606d] MozillaCACerts_jll v2022.10.11
  [4536629a] OpenBLAS_jll v0.3.21+4
  [efcefdf7] PCRE2_jll v10.42.0+0
  [83775a58] Zlib_jll v1.2.13+0
  [8e850b90] libblastrampoline_jll v5.8.0+0
  [8e850ede] nghttp2_jll v1.48.0+0
  [3f19e933] p7zip_jll v17.4.0+0
Info Packages marked with ⌃ have new versions available but compatibility constraints
    ↪ restrict them from upgrading. To see why use `status --outdated -m`
```