

## **ESM 11 Description of the Rasch analyses RUMM2030 outputs**

ESM 11 file includes RUMM2030 software outputs of the Rasch analysis for the overall fit statistics of individual CHIME subscales and the total scale together with outputs for the initial item item's fit statistics. The same acronyms are used consistently as defined in the body of the manuscript.

ESM 11 includes RUMM outputs presented in the following order (one output per page):

1. ESM 11 RUMM 2030 Output CHIME Initial Full scale
2. ESM 11 RUMM 2030 Output CHIME Final Full scale
3. ESM 11 RUMM 2030 Output CHIME AwareInt Initial-Final scale
4. ESM 11 RUMM 2030 Output CHIME AwareInt Items Fit Initial scale
5. ESM 11 RUMM 2030 Output CHIME AwareExt Initial scale
6. ESM 11 RUMM 2030 Output CHIME AwareExt Items Fit Initial scale
7. ESM 11 RUMM 2030 Output CHIME ActAware Initial-Final scale
8. ESM 11 RUMM 2030 Output CHIME ActAware Items Fit Initial scale
9. ESM 11 RUMM 2030 Output CHIME AccNJ Initial-Final scale
10. ESM 11 RUMM 2030 Output CHIME AccNJ Items Fit Initial scale
11. ESM 11 RUMM 2030 Output CHIME NrDec Initial-Final scale
12. ESM 11 RUMM 2030 Output CHIME NrDec Items Fit Initial scale
13. ESM 11 RUMM 2030 Output CHIME Openness Initial-Final scale
14. ESM 11 RUMM 2030 Output CHIME Openness Items Fit Initial scale
15. ESM 11 RUMM 2030 Output CHIME Relativity Initial-Final scale
16. ESM 11 RUMM 2030 Output CHIME Relativity Item Fit Initial scale
17. ESM 11 RUMM 2030 Output CHIME Insight Initial scale
18. ESM 11 RUMM 2030 Output CHIME Insight Items Fit Initial scale
19. ESM 11 RUMM 2030 Output CHIME Insight Final scale

The overall Rasch model fit statistics from the above outputs are summarised in Table 1 and the individual item fit statistics in Table ESM 1. Both the overall and individual model fit indices are explained in sufficient details in the method and result sections of the manuscript.







RUMM2030

Project: CHIME443G

Analysis: A2

Title: AWINT

Date: 1 Jun 2017 04:38:05 p.m.

Display: INDIVIDUAL ITEM-FIT - Serial Order

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Seq	Item	Type	Location	SE	Residual	DF	ChiSq	DF	Prob	F-stat	DF1	DF2	Prob
1	I0001	Poly	-0.748	0.061	0.042	340.20	9.292	9	0.410773	1.209	9	420	0.287293
5	I0005	Poly	0.490	0.050	1.024	340.20	11.697	9	0.230921	1.426	9	420	0.174326
14	I0014	Poly	-0.209	0.061	0.510	340.20	5.637	9	0.775629	0.722	9	420	0.689114
29	I0029	Poly	0.651	0.050	1.561	340.20	13.413	9	0.144802	1.699	9	420	0.086958
34	I0034	Poly	-0.185	0.066	-0.796	340.20	17.002	9	0.048684	2.588	9	420	0.006524

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RUMM2030 Project: CHIME443G Analysis: AEX  
Title: INITIAL Date: 1 Jun 2017 16:46:56  
Display: SUMMARY TEST-OF-FIT STATISTICS

ITEM-PERSON INTERACTION

	ITEMS		PERSONS	
	Location	Fit Residual	Location	Fit Residual
Mean	0.0000	0.1849	1.5501	-0.4842
SD	0.2159	2.2216	1.4540	1.1944
Skewness	0.0582	-0.1947	-0.0480	-0.8763
Kurtosis	-4.0298	-2.1535	-0.0035	0.7399
	N = 443			
Correlation [locn/stdResid]			0.9256	0.1240

ITEM-TRAIT INTERACTION

Total Item Chi Squ 43.3832  
Total Deg of Freedom 36.000  
Total Chi Squ Prob 0.185584

RELIABILITY INDICES

PERSON SEPARATION INDEX

AEX

With Extm: 0.74751  
NO Extm: 0.72666

CRONBACH Alpha

AEX

With Extm: 0.82261  
NO Extm: 0.79535

POWER OF ANALYSIS OF FIT is GOOD

[Based on Separation Index of: 0.74751]

RUMM2030

Project: CHIME443G

Analysis: AEX

Date: 1 Jun 2017 04:47:52 p.m.

Title: INITIAL

Display: INDIVIDUAL ITEM-FIT - Serial Order

Seq	Item	Type	Location	SE	Residual	DF	ChiSq	DF	Prob	F-stat	DF1	DF2	Prob
9	I0009	Poly	-0.226	0.064	-2.561	309.00	15.689	9	0.073674	2.782	9	407	0.003570
18	I0018	Poly	0.234	0.060	1.599	309.00	7.530	9	0.582159	0.914	9	407	0.512929
21	I0021	Poly	0.127	0.063	2.331	309.00	9.830	9	0.364442	1.094	9	407	0.365788
27	I0027	Poly	-0.135	0.064	-0.629	309.00	10.335	9	0.324041	1.454	9	407	0.162854





RUMM2030 Project: CHIME443G Analysis: ACA  
Title: INITIAL Date: 1 Jun 2017 17:01:44  
Display: INDIVIDUAL ITEM-FIT - Serial Order

Seq	ItmCode	Type	Location	SE	Fit	Residual	DF	ChiSqu	DF	Prob	F-stat	DF1	DF2	Prob
10	I0010	Poly	-0.151	0.048	2.099		324.75	5.541	9	0.784874	0.628	9	428	0.773742
12	I0012	Poly	-0.472	0.057	0.705		324.75	16.947	9	0.049549	2.435	9	428	0.010432
17	I0017	Poly	0.451	0.050	-0.333		324.75	12.387	9	0.192362	1.943	9	428	0.044507
26	I0026	Poly	0.172	0.051	-0.859		324.75	9.028	9	0.434713	1.507	9	428	0.142660



RUMM2030

Project: CHIME443G

Analysis: ACNJ

Date: 1 Jun 2017 05:06:42 p.m.

Title: INITIAL

Display: INDIVIDUAL ITEM-FIT - Serial Order

Seq	Item	Type	Location	SE	Residual	DF	ChiSq	DF	Prob	F-stat	DF1	DF2	Prob
2	I0002	Poly	-0.626	0.062	-0.038	348.20	4.459	9	0.878690	0.626	9	430	0.775110
7	I0007	Poly	0.936	0.055	1.862	348.20	18.505	9	0.029748	2.290	9	430	0.016176
11	I0011	Poly	-0.442	0.061	1.402	348.20	9.616	9	0.382438	1.193	9	430	0.297446
32	I0032	Poly	0.058	0.059	-0.971	348.20	12.209	9	0.201785	1.908	9	430	0.049103
36	I0036	Poly	0.074	0.055	-1.737	348.20	10.612	9	0.303274	1.793	9	430	0.067442



RUMM2030            Project: CHIME443G            Analysis: ND  
Title: INITIAL  
Display: INDIVIDUAL ITEM-FIT - Serial Order

Date: 1 Jun 2017 05:12:40 p.m.

Seq	Item	Type	Location	SE	Residual	DF	ChiSq	DF	Prob	F-stat	DF1	DF2	Prob
8	I0008	Poly	0.385	0.060	0.405	362.83	4.655	9	0.863293	0.626	9	430	0.775170
13	I0013	Poly	0.362	0.060	-0.827	362.83	8.976	9	0.439473	1.309	9	430	0.229913
16	I0016	Poly	-0.104	0.060	1.597	362.83	6.154	9	0.724434	0.738	9	430	0.674320
20	I0020	Poly	0.178	0.060	-0.312	362.83	7.979	9	0.536314	1.144	9	430	0.330286
25	I0025	Poly	-0.207	0.063	-1.028	362.83	5.276	9	0.809643	0.799	9	430	0.617244
28	I0028	Poly	-0.614	0.066	0.944	362.83	4.970	9	0.836935	0.613	9	430	0.786143



RUMM2030            Project: CHIME443G            Analysis: OP  
Title: INITIAL  
Display: INDIVIDUAL ITEM-FIT - Serial Order

Date: 1 Jun 2017 05:15:38 p.m.

Seq	Item	Type	Location	SE	Residual	DF	ChiSq	DF	Prob	F-stat	DF1	DF2	Prob
19	I0019	Poly	-0.549	0.050	0.396	323.25	6.304	9	0.709128	0.882	9	426	0.540997
22	I0022	Poly	0.149	0.053	-0.552	323.25	9.629	9	0.381374	1.569	9	426	0.122262
30	I0030	Poly	0.327	0.050	0.326	323.25	10.530	9	0.309290	1.488	9	426	0.149875
33	I0033	Poly	0.074	0.049	1.950	323.25	6.480	9	0.691062	0.793	9	426	0.622834





RUMM2030

Project: CHIME443G

Analysis: REL

Date: 1 Jun 2017 05:20:13 p.m.

Title: INITIAL

Display: INDIVIDUAL ITEM-FIT - Serial Order

Seq	Item	Type	Location	SE	Residual	DF	ChiSq	DF	Prob	F-stat	DF1	DF2	Prob
4	I0004	Poly	-0.145	0.061	1.061	315.75	3.387	8	0.907809	0.357	9	416	0.954676
23	I0023	Poly	0.370	0.060	1.575	315.75	9.868	8	0.274386	1.243	9	416	0.266767
31	I0031	Poly	0.343	0.061	-1.072	315.75	7.464	8	0.487477	0.918	9	416	0.508768
35	I0035	Poly	-0.569	0.064	-0.201	315.75	15.721	8	0.046557	2.402	9	416	0.011595



RUMM2030 Project: CHIME443G Analysis: I1

Title: INITIAL

Date: 1 Jun 2017 05:29:29 p.m.

Display: INDIVIDUAL ITEM-FIT - Serial Order

Seq	Item	Type	Location	SE	Residual	DF	ChiSq	DF	Prob	F-stat	DF1	DF2	Prob
3	I0003	Poly	0.162	0.052	3.237	348.20	22.224	9	0.008195	2.409	9	430	0.011292
6	I0006	Poly	0.193	0.050	0.304	348.20	4.806	9	0.850920	0.571	9	430	0.821132
15	I0015	Poly	-0.234	0.056	-1.119	348.20	11.065	9	0.271249	1.631	9	430	0.104052
24	I0024	Poly	-0.050	0.054	-1.030	348.20	16.231	9	0.062215	2.526	9	430	0.007895
37	I0037	Poly	-0.070	0.060	0.387	348.20	6.388	9	0.700587	0.799	9	430	0.616995



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