

Summary of the fitted operating models

ABT-MSE

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OM design

Factor 1: Future Recruitment

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- 1: West - Hockey stick, East - '83+ B-H $h=0.98$
 - 2: West - B-H h estimated, East - '83+ B-H $h=0.7$
 - 3: West - Hockey stock changes to B-H after 10 yrs, East - 83+ B-H with $h=0.98$ changes to '50-82 B-H with $h=0.98$ after 10 years
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Factor 2: Current Abundance

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- A: West - Best estimates of SSB
B: Western Area SSB matches VPA
C: Eastern Area SSB inc as VPA
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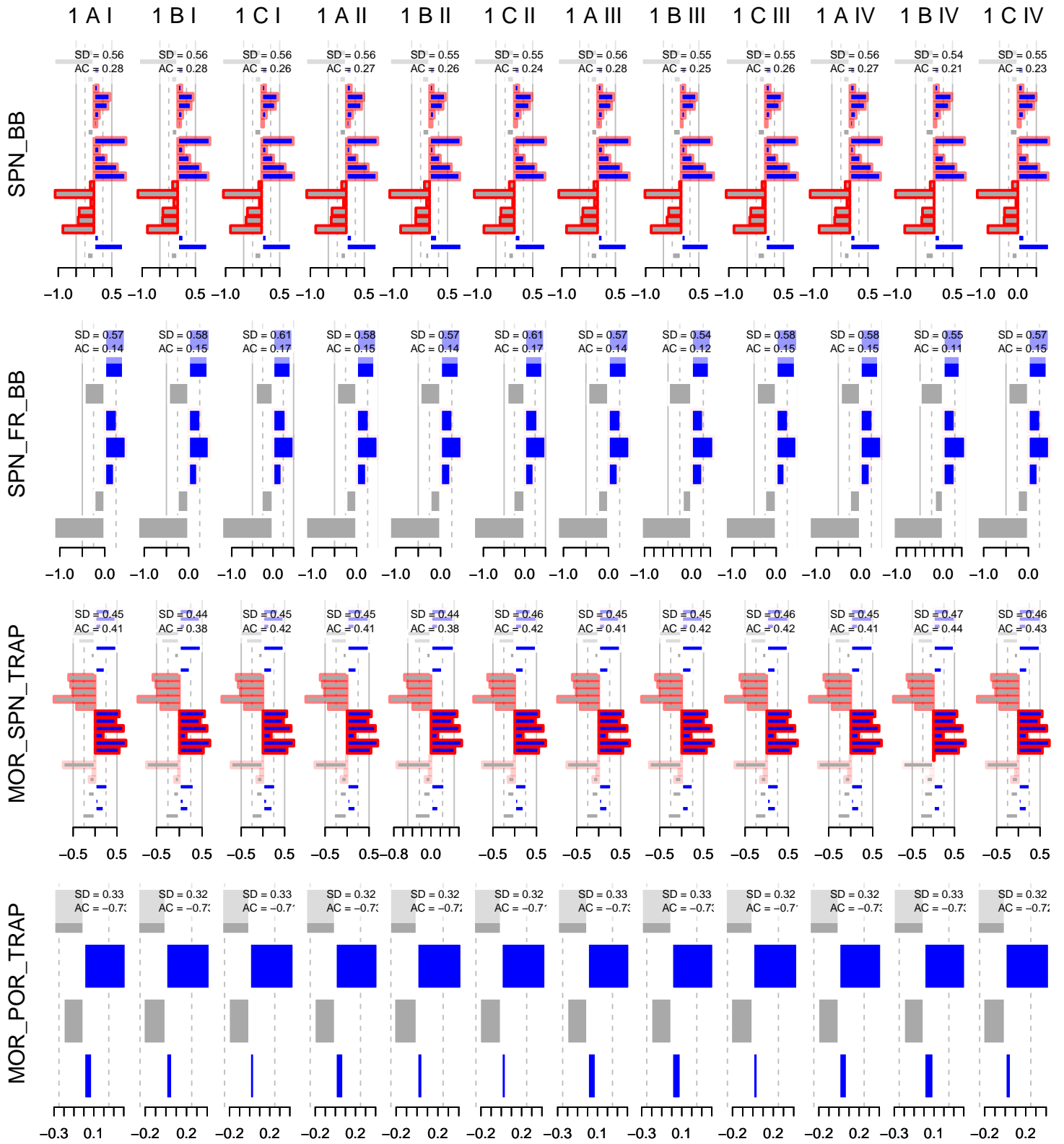
Factor 3: Natural Mortality / Maturity

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- I: Younger spawning, High M
II: Younger spawning, Low M
III: Older spawning, High M
IV: Older spawning, Low M
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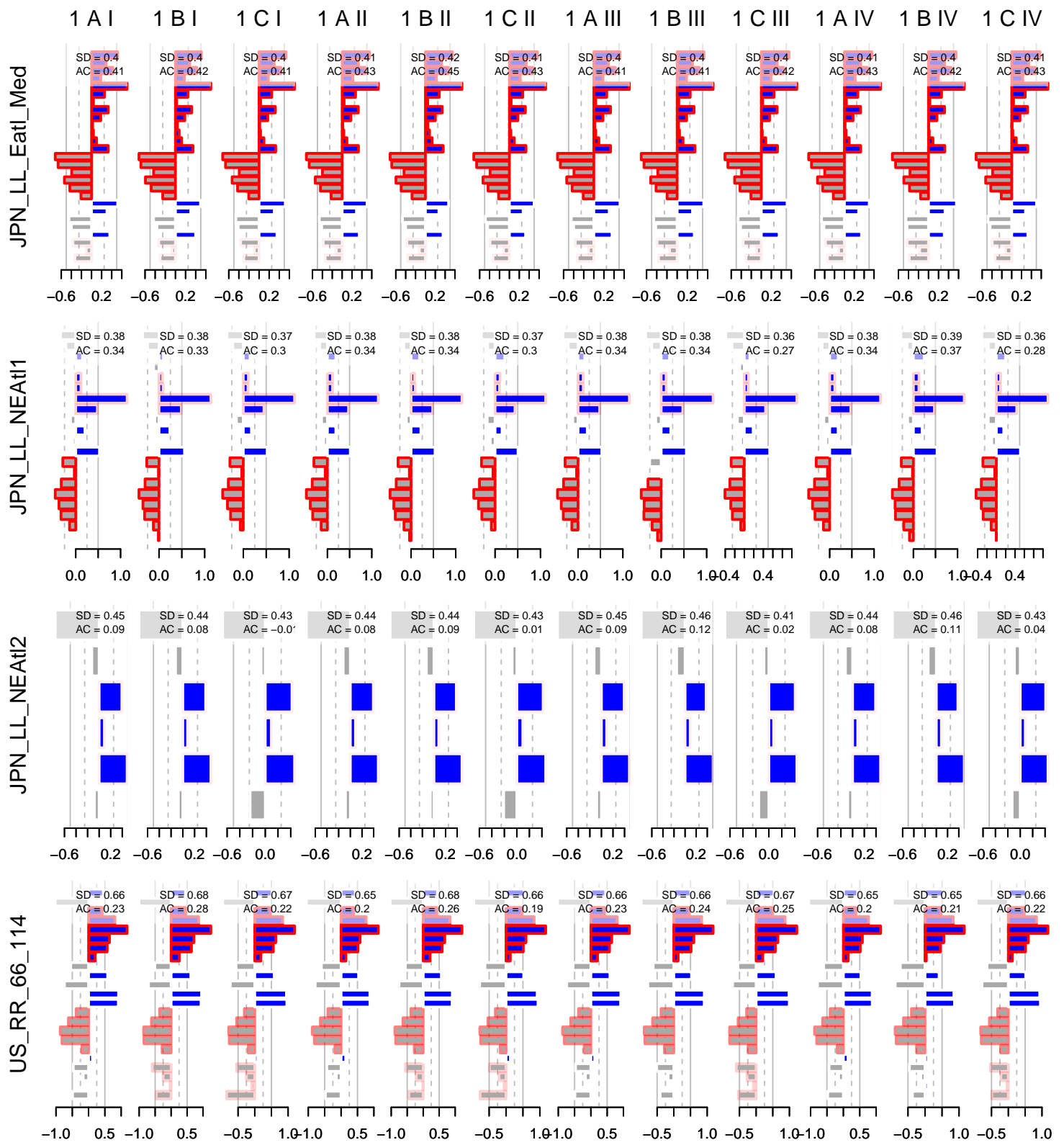
Design matrix

OM No.	Future Recruitment	Current Abundance	Maturity / M
1	1	A	I
2	2	A	I
3	3	A	I
4	1	B	I
5	2	B	I
6	3	B	I
7	1	C	I
8	2	C	I
9	3	C	I
10	1	A	II
11	2	A	II
12	3	A	II
13	1	B	II
14	2	B	II
15	3	B	II
16	1	C	II
17	2	C	II
18	3	C	II
19	1	A	III
20	2	A	III
21	3	A	III
22	1	B	III
23	2	B	III
24	3	B	III
25	1	C	III
26	2	C	III
27	3	C	III
28	1	A	IV
29	2	A	IV
30	3	A	IV
31	1	B	IV
32	2	B	IV
33	3	B	IV
34	1	C	IV
35	2	C	IV
36	3	C	IV

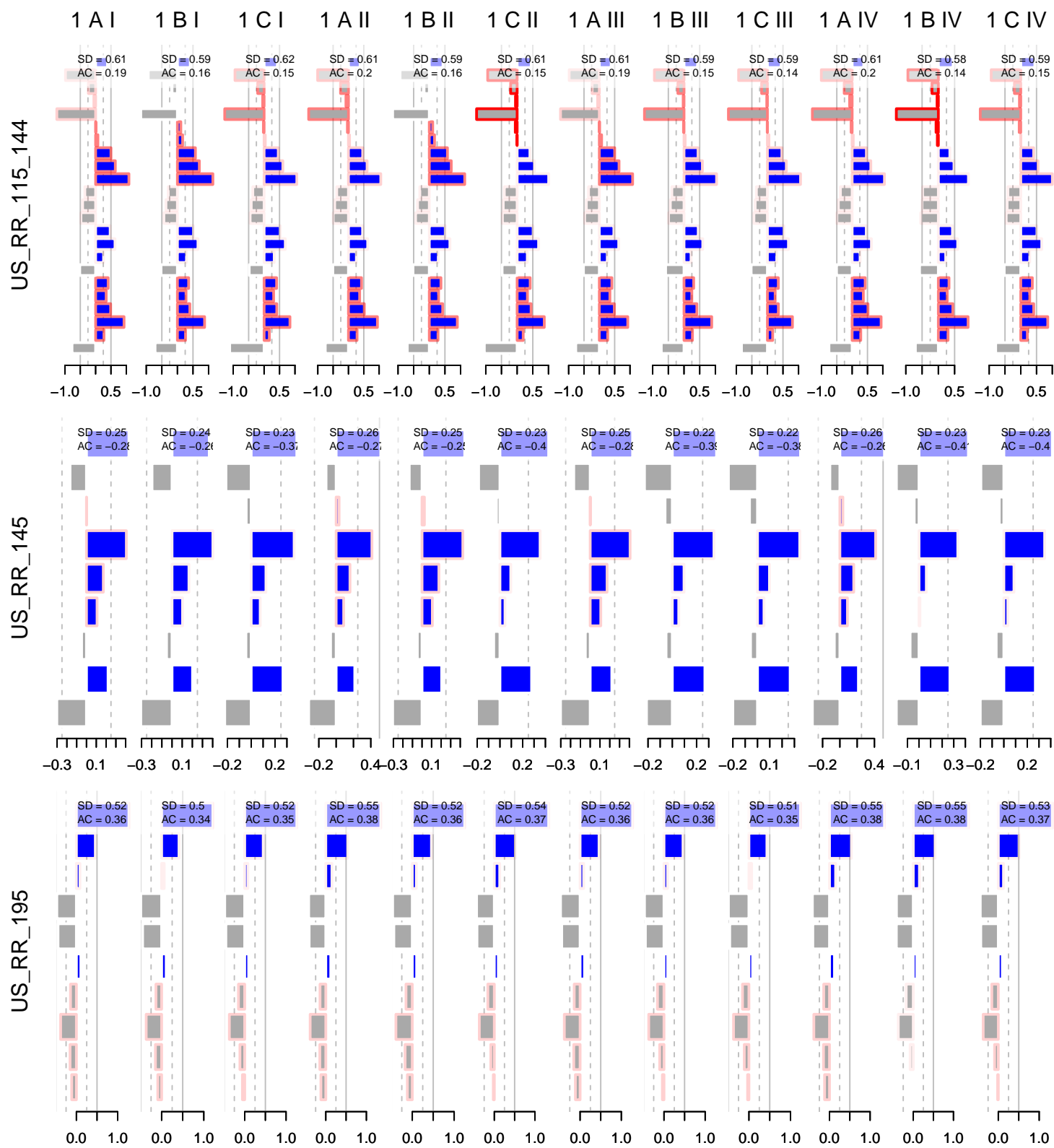
Residuals in indices



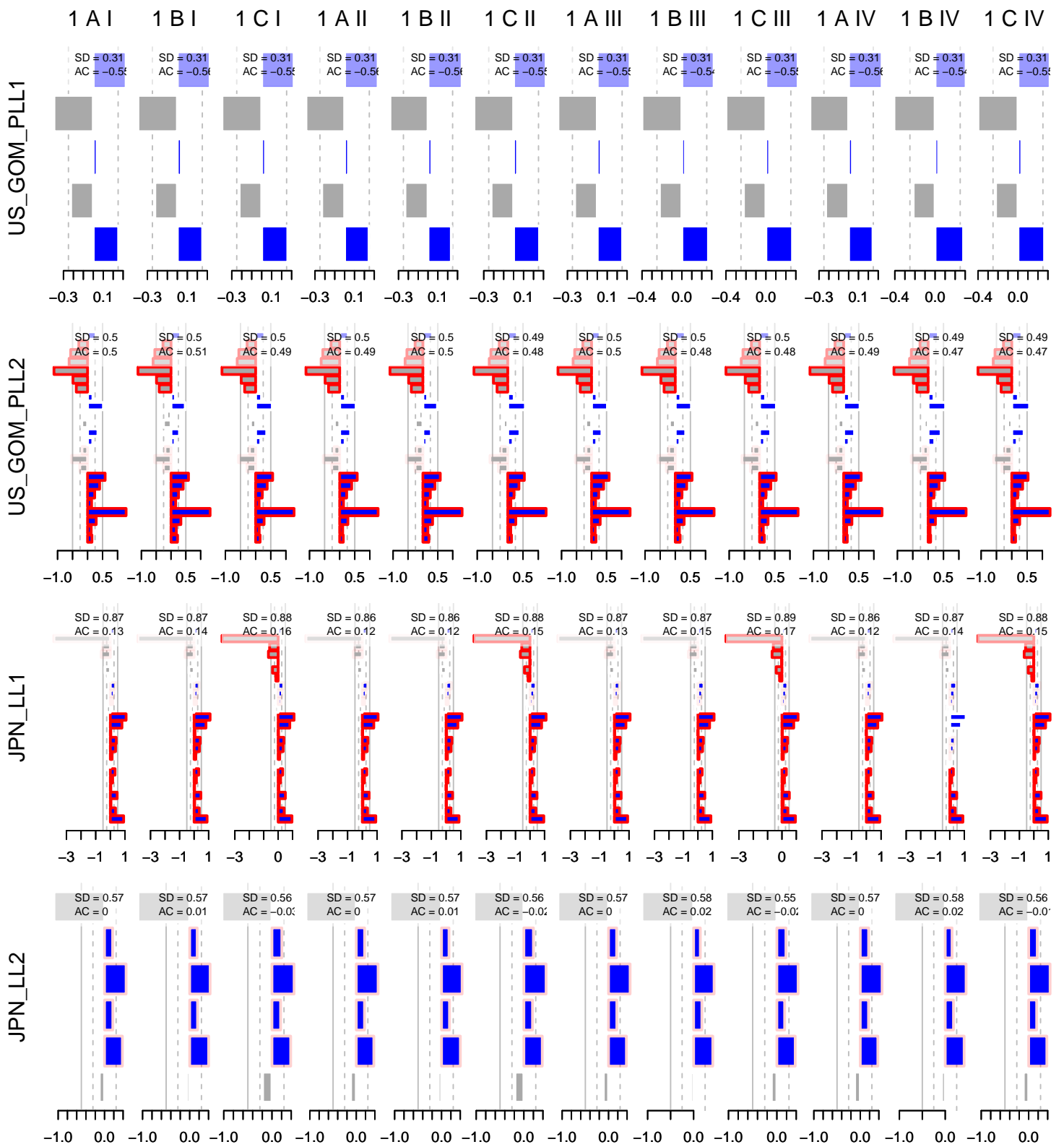
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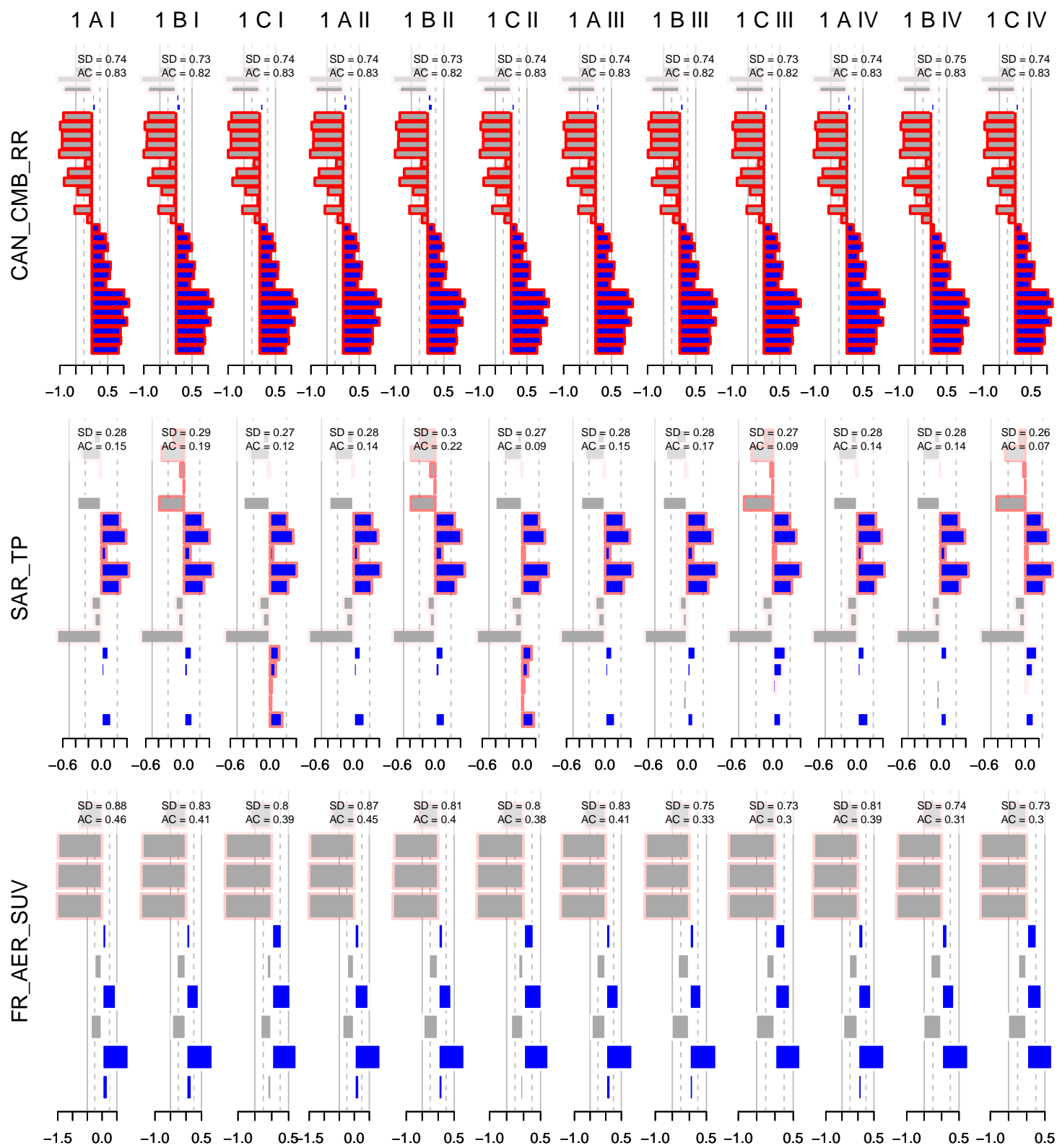
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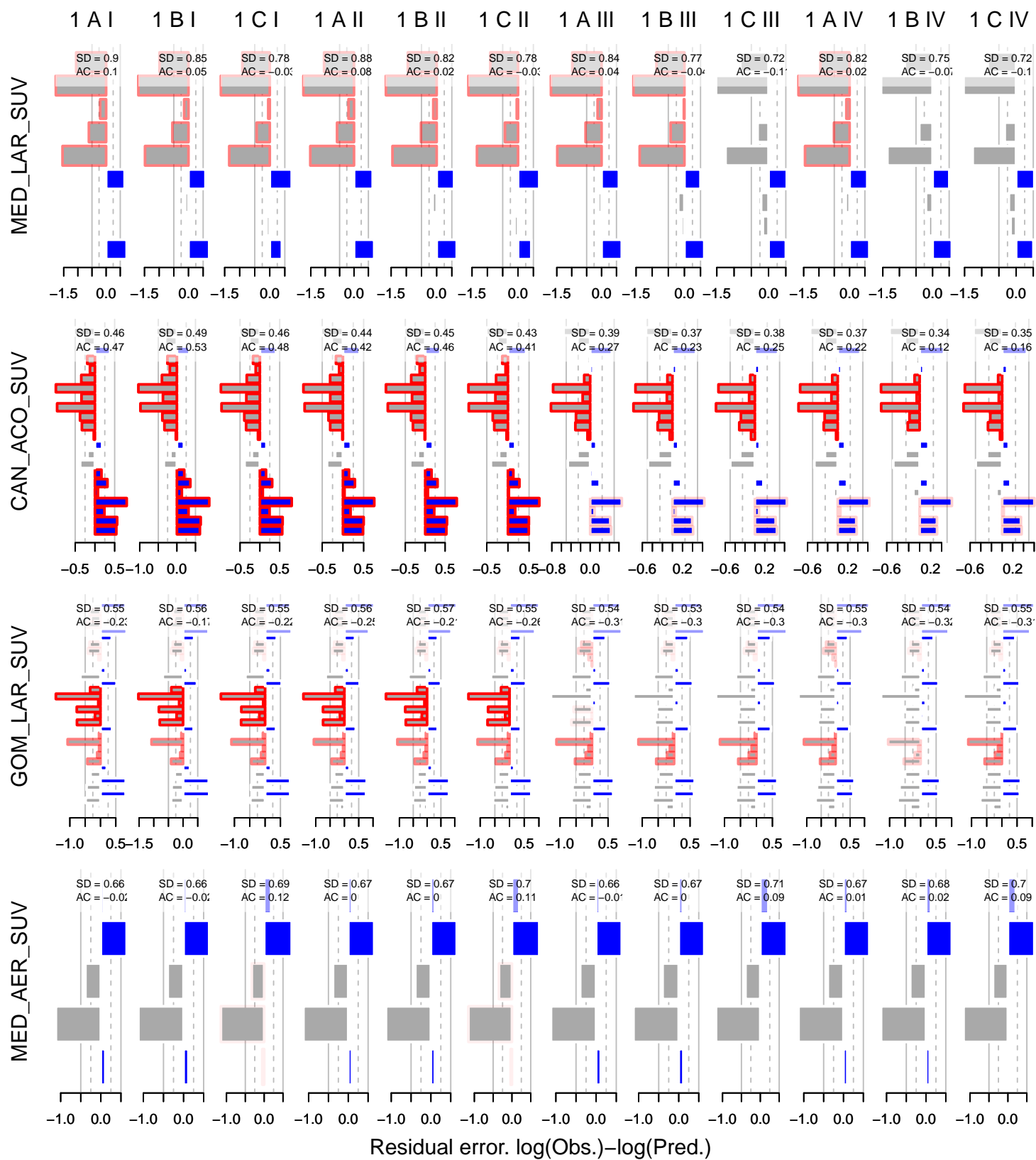
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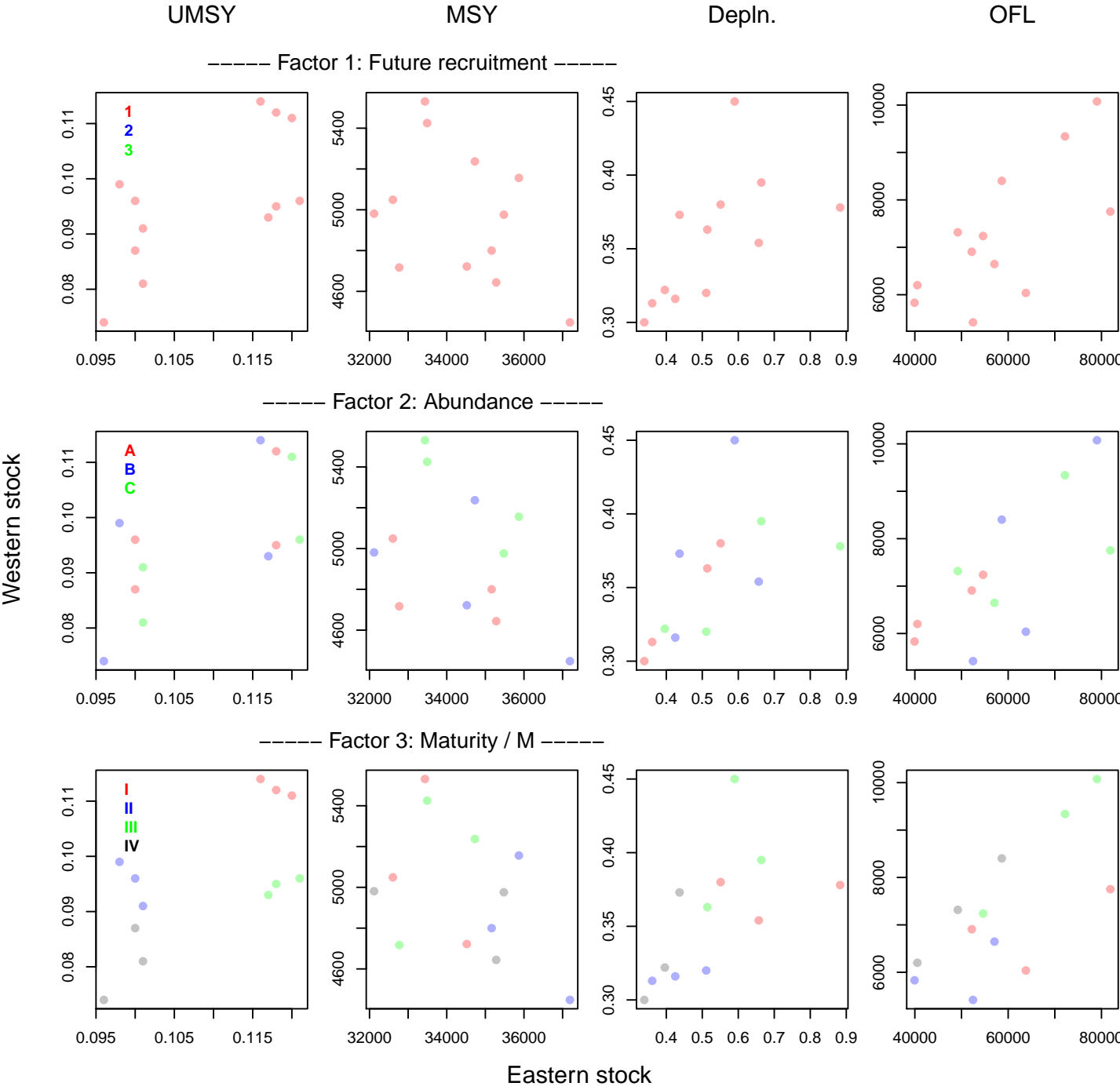
Model estimates / reference points for Eastern stock

OM	MSY	FMSYa	UMSY	BMSY	SSBMSY	BMSY_B0	SSBrel	recMSY	D	Dep	SSB	OFL
1	32605	0.277	0.118	244111	217423	0.304	0.278	0.963	0.507	0.551	394007	52200
4	34520	0.31	0.116	262779	234704	0.31	0.284	0.962	0.608	0.657	491194	63794
7	33436	0.264	0.12	245120	217755	0.299	0.272	0.965	0.807	0.883	606383	81910
10	35163	0.149	0.1	317989	296088	0.31	0.29	0.98	0.338	0.361	371817	39932
13	37190	0.151	0.098	340547	317520	0.315	0.294	0.975	0.4	0.425	499195	52469
16	35868	0.142	0.101	319035	296418	0.302	0.282	0.981	0.475	0.511	524929	57063
19	32771	0.279	0.118	244228	185949	0.304	0.249	0.968	0.474	0.514	352464	54626
22	34728	0.209	0.117	261131	198600	0.298	0.243	0.955	0.548	0.59	513767	79037
25	33492	0.268	0.121	243756	184201	0.298	0.242	0.971	0.613	0.664	450784	72180
28	35281	0.15	0.1	317545	266656	0.31	0.27	0.983	0.318	0.339	340483	40546
31	32118	0.124	0.096	301929	254350	0.307	0.268	0.968	0.413	0.437	514510	58632
34	35479	0.141	0.101	314764	263064	0.302	0.261	0.984	0.371	0.396	407162	49205

Model estimates / reference points for Western stock

OM	MSY	FMSYa	UMSY	BMSY	SSBMSY	BMSY_B0	SSBrel	recMSY	D	Dep	SSB	OFL
1	5049	0.209	0.112	40180	37643	0.325	0.309	0.882	0.347	0.38	57777	6907
4	4722	0.235	0.114	36728	34387	0.324	0.308	0.89	0.323	0.354	49593	6038
7	5531	0.195	0.111	44495	41705	0.325	0.309	0.874	0.346	0.378	65470	7753
10	4800	0.131	0.096	45416	43553	0.327	0.314	0.898	0.291	0.313	58249	5831
13	4448	0.141	0.099	40635	38929	0.323	0.31	0.908	0.294	0.316	52424	5417
16	5156	0.115	0.091	51779	49733	0.334	0.321	0.881	0.299	0.32	70153	6647
19	4717	0.165	0.095	44871	27547	0.363	0.268	0.858	0.332	0.363	46782	7239
22	5237	0.134	0.093	50999	31518	0.359	0.267	0.852	0.417	0.45	66957	10076
25	5425	0.157	0.096	51281	31368	0.36	0.265	0.858	0.363	0.395	59508	9339
28	4644	0.116	0.087	48734	34257	0.352	0.279	0.886	0.278	0.3	50103	6201
31	4981	0.085	0.074	62701	46076	0.372	0.309	0.844	0.352	0.373	83438	8402
34	4976	0.1	0.081	56349	40387	0.36	0.292	0.867	0.301	0.322	64746	7317

MSY reference points



SSB trends

