

Supporting Information for

An objective dynamic multivariable weighting method for reducing uncertainty in WRF parameterization scheme selection

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Table S1 The comparison results of daily meteorological elements in the arid region of Northwest each year with the 30-year average climate values

Year	cRMSE	R	Standard Deviation Ratio	MIEI
1991	0.50	0.88	1.05	0.58
1992	0.32	0.96	1.12	0.37
1993	0.59	0.85	1.09	0.62
1994	0.42	0.92	1.07	0.44
1995	0.51	0.91	1.22	0.51
1996	0.44	0.91	1.05	0.50
1997	0.34	0.94	1.02	0.37
1998	0.42	0.94	1.17	0.41
1999	0.26	0.98	1.14	0.24
2000	0.40	0.94	1.16	0.40
2001	0.61	0.85	1.17	0.63
2002	0.24	0.97	0.93	0.29
2003	0.49	0.92	1.21	0.54
2004	0.38	0.93	1.06	0.42
2005	0.50	0.90	1.16	0.54
2006	0.37	0.93	0.98	0.39
2007	0.20	0.98	1.08	0.23
2008	0.38	0.93	0.91	0.43
2009	0.46	0.90	1.06	0.50
2010	0.49	0.88	1.00	0.51
2011	0.46	0.92	1.17	0.46
2012	0.30	0.95	0.98	0.35
2013	0.43	0.90	0.97	0.53
2014	0.39	0.92	0.92	0.46
2015	0.54	0.88	1.11	0.59
2016	0.42	0.91	0.95	0.48
2017	0.46	0.91	1.09	0.54
2018	0.45	0.89	0.90	0.54
2019	0.69	0.84	1.29	0.76
2020	0.49	0.88	0.99	0.60

Table S2 The comparison results of daily meteorological elements in the coastal region of Southeast each year with the 30-year average climate values

Year	cRMSE	R	Standard Deviation Ratio	MIEI
1991	0.42	0.91	0.97	0.77
1992	0.65	0.85	1.24	0.80
1993	0.41	0.94	1.19	0.56
1994	0.59	0.88	1.24	0.86
1995	0.50	0.90	1.17	0.55
1996	0.43	0.92	1.12	0.89
1997	0.54	0.86	1.03	0.65
1998	0.58	0.89	1.23	0.70
1999	0.54	0.87	1.08	0.77
2000	0.60	0.84	1.08	0.76
2001	0.44	0.94	1.20	0.53
2002	0.58	0.83	1.00	0.74
2003	0.43	0.92	1.10	0.62
2004	0.49	0.88	0.98	0.53
2005	0.51	0.94	1.31	0.50
2006	0.43	0.93	1.17	0.61
2007	0.53	0.88	1.12	0.62
2008	0.61	0.89	1.31	0.60
2009	0.38	0.93	0.99	0.49
2010	0.67	0.86	1.30	0.84
2011	0.48	0.89	1.05	0.70
2012	0.48	0.90	1.10	0.57
2013	0.51	0.89	1.10	0.57
2014	0.51	0.92	1.25	0.66
2015	0.75	0.74	1.08	0.78
2016	0.60	0.83	1.05	0.61
2017	0.47	0.92	1.16	0.61
2018	0.56	0.84	0.99	0.68
2019	0.58	0.89	1.26	0.69
2020	0.50	0.87	0.99	0.75

Table S3 Summary of simulation experiment on dynamically weighted combination of parameterization schemes in the arid region of Northwest

	mp_physics	bl_pbl_physics	cu_physics	ra_physics	sf_surface_physics
1	8 Thompson	2 MYJ + 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
2	1 Kessler	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
3	2 Lin	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
4	3 WSM3	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
5	4 WSM5	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
6	5 Eta/Ferrier	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
7	6 WSM6	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
8	9 Milbrandt	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
9	10 Morrison	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
10	11 CAM	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
11	13 Lin-SBU	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
12	14 WDM5	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
13	16 WDM6	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
14	17 NSSL 2-17	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
15	18 NSSL 2-18	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
16	19 NSSL 1-19	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
17	21 NSSL 1-21	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
18	24 WSM7	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
19	26 WDM7	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
20	28 Thompson aerosol-aware	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
21	50 P3	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
22	50 P3	1 YSU + 1 MM5	6 Tiedtke	4 RRTMG	2 Noah LSM
23	50 P3	4 QNSE +4 QNSE	6 Tiedtke	4 RRTMG	2 Noah LSM

24	50 P3	5 MYNN2.5 + 1 MM5	6 Tiedtke	4 RRTMG	2 Noah LSM
25	50 P3	5 MYNN2.5 + 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
26	50 P3	5 MYNN2.5 + 5 MYNN	6 Tiedtke	4 RRTMG	2 Noah LSM
27	50 P3	7 ACM2 + 1 MM5	6 Tiedtke	4 RRTMG	2 Noah LSM
28	50 P3	7 ACM2 + 7 Pleim- Xiu	6 Tiedtke	4 RRTMG	2 Noah LSM
29	50 P3	1 YSU + 1 MM5	2 BMJ	4 RRTMG	2 Noah LSM
30	50 P3	1 YSU + 1 MM5	3 GF	4 RRTMG	2 Noah LSM
31	50 P3	1 YSU + 1 MM5	5 Grell 3	4 RRTMG	2 Noah LSM
32	50 P3	1 YSU + 1 MM5	14 NSAS	4 RRTMG	2 Noah LSM
33	50 P3	1 YSU + 1 MM5	16 New Tiedtke	4 RRTMG	2 Noah LSM
34	50 P3	1 YSU + 1 MM5	93 GD	4 RRTMG	2 Noah LSM
35	50 P3	1 YSU + 1 MM5	99 Old KF	4 RRTMG	2 Noah LSM
36	50 P3	1 YSU + 1 MM5	6 Tiedtke	1 RRTM	2 Noah LSM
37	50 P3	1 YSU + 1 MM5	6 Tiedtke	3 CAM	2 Noah LSM
38	50 P3	1 YSU + 1 MM5	6 Tiedtke	5 New Goddard	2 Noah LSM
39	50 P3	1 YSU + 1 MM5	6 Tiedtke	99 GFDL	2 Noah LSM
40	50 P3	1 YSU + 1 MM5	6 Tiedtke	99 GFDL	1 SLAB
41	50 P3	1 YSU + 1 MM5	6 Tiedtke	99 GFDL	4 NoahMP
42	50 P3	1 YSU + 1 MM5	6 Tiedtke	99 GFDL	5 CLM4

Table S4 Summary of simulation experiment on equally weighted combination of parameterization schemes in the arid region of Northwest

	mp_physics	bl_pbl_physics	cu_physics	ra_physics	sf_surface_physics
1	8 Thompson	2 MYJ + 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
2	1 Kessler	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
3	2 Lin	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
4	3 WSM3	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
5	4 WSM5	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
6	5 Eta/Ferrier	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
7	6 WSM6	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
8	9 Milbrandt	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
9	10 Morrison	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
10	11 CAM	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
11	13 Lin-SBU	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
12	14 WDM5	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
13	16 WDM6	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
14	17 NSSL 2-17	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
15	18 NSSL 2-18	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
16	19 NSSL 1-19	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
17	21 NSSL 1-21	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
18	24 WSM7	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
19	26 WDM7	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
20	28 Thompson aerosol-aware	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
21	50 P3	2 MYJ+ 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
22	50 P3	1 YSU + 1 MM5	6 Tiedtke	4 RRTMG	2 Noah LSM
23	50 P3	4 QNSE +4 QNSE	6 Tiedtke	4 RRTMG	2 Noah LSM

24	50 P3	5 MYNN2.5 + 1 MM5	6 Tiedtke	4 RRTMG	2 Noah LSM
25	50 P3	5 MYNN2.5 + 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
26	50 P3	5 MYNN2.5 + 5 MYNN	6 Tiedtke	4 RRTMG	2 Noah LSM
27	50 P3	7 ACM2 + 1 MM5	6 Tiedtke	4 RRTMG	2 Noah LSM
28	50 P3	7 ACM2 + 7 Pleim- Xiu	6 Tiedtke	4 RRTMG	2 Noah LSM
29	50 P3	2 MYJ+ 2 MYJ	2 BMJ	4 RRTMG	2 Noah LSM
30	50 P3	2 MYJ+ 2 MYJ	3 GF	4 RRTMG	2 Noah LSM
31	50 P3	2 MYJ+ 2 MYJ	5 Grell 3	4 RRTMG	2 Noah LSM
32	50 P3	2 MYJ+ 2 MYJ	7 ZM	4 RRTMG	2 Noah LSM
33	50 P3	2 MYJ+ 2 MYJ	14 NSAS	4 RRTMG	2 Noah LSM
34	50 P3	2 MYJ+ 2 MYJ	16 New Tiedtke	4 RRTMG	2 Noah LSM
35	50 P3	2 MYJ+ 2 MYJ	93 GD	4 RRTMG	2 Noah LSM
36	50 P3	2 MYJ+ 2 MYJ	99 Old KF	4 RRTMG	2 Noah LSM
37	50 P3	2 MYJ+ 2 MYJ	6 Tiedtke	1 RRTM	2 Noah LSM
38	50 P3	2 MYJ+ 2 MYJ	6 Tiedtke	3 CAM	2 Noah LSM
39	50 P3	2 MYJ+ 2 MYJ	6 Tiedtke	5 New Goddard	2 Noah LSM
40	50 P3	2 MYJ+ 2 MYJ	6 Tiedtke	99 GFDL	2 Noah LSM
41	50 P3	2 MYJ+ 2 MYJ	6 Tiedtke	99 GFDL	1 SLAB
42	50 P3	2 MYJ+ 2 MYJ	6 Tiedtke	99 GFDL	4 NoahMP
43	50 P3	2 MYJ+ 2 MYJ	6 Tiedtke	99 GFDL	5 CLM4

Table S5 Summary of simulation experiment on dynamically weighted combination of parameterization schemes in the coastal region of Southeast

	mp_physics	bl_pbl_physics	cu_physics	ra_physics	sf_surface_physics
1	8 Thompson	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
2	1 Kessler	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
3	2 Lin	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
4	3 WSM3	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
5	4 WSM5	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
6	5 Eta/Ferrier	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
7	6 WSM6	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
8	9 Milbrandt	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
9	10 Morrison	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
10	11 CAM	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
11	13 Lin-SBU	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
12	14 WDM5	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
13	16 WDM6	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
14	17 NSSL 2-17	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
15	18 NSSL 2-18	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
16	19 NSSL 1-19	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
17	21 NSSL 1-21	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
18	24 WSM7	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
19	26 WDM7	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
20	28 Thompson aerosol-aware	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
21	50 P3	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
22	16 WDM6	1 YSU + 1 MM5	6 Tiedtke	4 RRTMG	2 Noah LSM
23	16 WDM6	3 GFS + 3 GFS	6 Tiedtke	4 RRTMG	2 Noah LSM
24	16 WDM6	4 QNSE + 4 QNSE	6 Tiedtke	4 RRTMG	2 Noah LSM
25	16 WDM6	5 MYNN2.5 + 1 MM5	6 Tiedtke	4 RRTMG	2 Noah LSM
26	16 WDM6	5 MYNN2.5 + 2	6 Tiedtke	4 RRTMG	2 Noah LSM

		MYJ			
27	16 WDM6	5 MYNN2.5 + 5 MYNN	6 Tiedtke	4 RRTMG	2 Noah LSM
28	16 WDM6	6 MYNN3+ 1 MM5	6 Tiedtke	4 RRTMG	2 Noah LSM
29	16 WDM6	6 MYNN3 + 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
30	16 WDM6	6 MYNN3 + 5 MYNN	6 Tiedtke	4 RRTMG	2 Noah LSM
31	16 WDM6	7 ACM2 + 1 MM5	6 Tiedtke	4 RRTMG	2 Noah LSM
32	16 WDM6	7 ACM2 + 7 Pleim-Xiu	6 Tiedtke	4 RRTMG	2 Noah LSM
33	16 WDM6	8 BouLac + 1 MM5	6 Tiedtke	4 RRTMG	2 Noah LSM
34	16 WDM6	8 BouLac + 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
35	16 WDM6	9 UW + 1 MM5	6 Tiedtke	4 RRTMG	2 Noah LSM
36	16 WDM6	9 UW + 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
37	16 WDM6	11 Shin-Hong + 1 MM5	6 Tiedtke	4 RRTMG	2 Noah LSM
38	16 WDM6	12 GBM + 1 MM5	6 Tiedtke	4 RRTMG	2 Noah LSM
39	16 WDM6	99 MRF + 1 MM5	6 Tiedtke	4 RRTMG	2 Noah LSM
40	16 WDM6	11 Shin-Hong + 1 MM5	1 KF	4 RRTMG	2 Noah LSM
41	16 WDM6	11 Shin-Hong + 1 MM5	2 BMJ	4 RRTMG	2 Noah LSM
42	16 WDM6	11 Shin-Hong + 1 MM5	5 Grell 3	4 RRTMG	2 Noah LSM
43	16 WDM6	11 Shin-Hong + 1 MM5	11 MsKF	4 RRTMG	2 Noah LSM
44	16 WDM6	11 Shin-Hong + 1 MM5	14 NSAS	4 RRTMG	2 Noah LSM
45	16 WDM6	11 Shin-Hong +	16 New	4 RRTMG	2 Noah LSM

		1 MM5	Tiedtke		
46	16 WDM6	11 Shin-Hong + 1 MM5	93 GD	4 RRTMG	2 Noah LSM
47	16 WDM6	11 Shin-Hong + 1 MM5	99 Old KF	4 RRTMG	2 Noah LSM
48	16 WDM6	11 Shin-Hong + 1 MM5	5 Grell 3	1 RRTM	2 Noah LSM
49	16 WDM6	11 Shin-Hong + 1 MM5	5 Grell 3	3 CAM	2 Noah LSM
50	16 WDM6	11 Shin-Hong + 1 MM5	5 Grell 3	5 New Goddard	2 Noah LSM
51	16 WDM6	11 Shin-Hong + 1 MM5	5 Grell 3	99 GFDL	2 Noah LSM
52	16 WDM6	11 Shin-Hong + 1 MM5	5 Grell 3	99 GFDL	1 SLAB
53	16 WDM6	11 Shin-Hong + 1 MM5	5 Grell 3	99 GFDL	4 NoahMP
54	16 WDM6	11 Shin-Hong + 1 MM5	5 Grell 3	99 GFDL	5 CLM4

Table S6 Summary of simulation experiment on equally weighted combination of parameterization schemes in the coastal region of Southeast

	mp_physics	bl_pbl_physics	cu_physics	ra_physics	sf_surface_physics
1	8 Thompson	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
2	1 Kessler	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
3	2 Lin	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
4	3 WSM3	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
5	4 WSM5	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
6	5 Eta/Ferrier	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
7	6 WSM6	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
8	9 Milbrandt	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
9	10 Morrison	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
10	11 CAM	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
11	13 Lin-SBU	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
12	14 WDM5	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
13	16 WDM6	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
14	17 NSSL 2-17	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
15	18 NSSL 2-18	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
16	19 NSSL 1-19	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
17	21 NSSL 1-21	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
18	24 WSM7	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
19	26 WDM7	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
20	28 Thompson aerosol-aware	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
21	50 P3	2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
22	16 WDM6	1 YSU + 1 MM5	6 Tiedtke	4 RRTMG	2 Noah LSM
23	16 WDM6	3 GFS + 3 GFS	6 Tiedtke	4 RRTMG	2 Noah LSM
24	16 WDM6	4 QNSE + 4 QNSE	6 Tiedtke	4 RRTMG	2 Noah LSM
25	16 WDM6	5 MYNN2.5 + 1 MM5	6 Tiedtke	4 RRTMG	2 Noah LSM
26	16 WDM6	5 MYNN2.5 + 2	6 Tiedtke	4 RRTMG	2 Noah LSM

		MYJ			
27	16 WDM6	5 MYNN2.5 + 5 MYNN	6 Tiedtke	4 RRTMG	2 Noah LSM
28	16 WDM6	6 MYNN3+ 1 MM5	6 Tiedtke	4 RRTMG	2 Noah LSM
29	16 WDM6	6 MYNN3 + 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
30	16 WDM6	6 MYNN3 + 5 MYNN	6 Tiedtke	4 RRTMG	2 Noah LSM
31	16 WDM6	7 ACM2 + 1 MM5	6 Tiedtke	4 RRTMG	2 Noah LSM
32	16 WDM6	7 ACM2 + 7 Pleim-Xiu	6 Tiedtke	4 RRTMG	2 Noah LSM
33	16 WDM6	8 BouLac + 1 MM5	6 Tiedtke	4 RRTMG	2 Noah LSM
34	16 WDM6	8 BouLac + 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
35	16 WDM6	9 UW + 1 MM5	6 Tiedtke	4 RRTMG	2 Noah LSM
36	16 WDM6	9 UW + 2 MYJ	6 Tiedtke	4 RRTMG	2 Noah LSM
37	16 WDM6	11 Shin-Hong + 1 MM5	6 Tiedtke	4 RRTMG	2 Noah LSM
38	16 WDM6	12 GBM + 1 MM5	6 Tiedtke	4 RRTMG	2 Noah LSM
39	16 WDM6	99 MRF + 1 MM5	6 Tiedtke	4 RRTMG	2 Noah LSM
40	16 WDM6	11 Shin-Hong + 1 MM5	1 KF	4 RRTMG	2 Noah LSM
41	16 WDM6	11 Shin-Hong + 1 MM5	2 BMJ	4 RRTMG	2 Noah LSM
42	16 WDM6	11 Shin-Hong + 1 MM5	5 Grell 3	4 RRTMG	2 Noah LSM
43	16 WDM6	11 Shin-Hong + 1 MM5	11 MsKF	4 RRTMG	2 Noah LSM
44	16 WDM6	11 Shin-Hong + 1 MM5	14 NSAS	4 RRTMG	2 Noah LSM
45	16 WDM6	11 Shin-Hong +	16 New	4 RRTMG	2 Noah LSM

		1 MM5	Tiedtke		
46	16 WDM6	11 Shin-Hong + 1 MM5	93 GD	4 RRTMG	2 Noah LSM
47	16 WDM6	11 Shin-Hong + 1 MM5	99 Old KF	4 RRTMG	2 Noah LSM
48	16 WDM6	11 Shin-Hong + 1 MM5	16 New Tiedtke	1 RRTM	2 Noah LSM
49	16 WDM6	11 Shin-Hong + 1 MM5	16 New Tiedtke	3 CAM	2 Noah LSM
50	16 WDM6	11 Shin-Hong + 1 MM5	16 New Tiedtke	5 New Goddard	2 Noah LSM
51	16 WDM6	11 Shin-Hong + 1 MM5	16 New Tiedtke	99 GFDL	2 Noah LSM
52	16 WDM6	11 Shin-Hong + 1 MM5	16 New Tiedtke	99 GFDL	1 SLAB
53	16 WDM6	11 Shin-Hong + 1 MM5	16 New Tiedtke	99 GFDL	5 CLM4
