

SUPPLEMENT

HOW WELL DO COUPLED MODELS SIMULATE TODAY'S CLIMATE?

Model Identifiers and Characteristics

BY THOMAS REICHLER AND JUNSU KIM

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Tables S1 to S3 list the names and identifiers of the different models investigated in this study along with some of their main characteristics.

TABLE S1. Identifiers and characteristics of the CMIP-I models included in this study. Grid resolution: longitude x latitude. *L* denotes number of vertical layers. The column for flux adjustment uses the following notation: **H: heat; **M**: momentum; **W**: water; **X**: none.**

ID	Short Name	Model	Atmosphere	Ocean	Reference	Flux Adj.
01	BMRC	BMRCI, Australia	R21 (5.6 × 3.2), L9	5.6 × 3.2, L12	Power et al. 1993	X
02	CCCMA	CCCmaI, Canada	T32 (3.8 × 3.8), L10	1.8 × 1.8, L29	Boer et al. 2000	H, W
03	CCSR	CCSR, Japan	T21 (5.6 × 5.6), L20	2.8 × 2.8, L17	Emori et al. 1999	H, W
04	CERFACS	CERFACSI, France	T21 (5.6 × 5.6), L30	2.0 × 2.0, L31	Guilyardi and Madec 1997	X
05	COLA	COLAI, United States	R15 (7.5 × 4.5), L9	1.5 × 1.5, L20	Schneider and Zhu 1998	X
06	CSIRO	CSIRO, Australia	R21 (5.6 × 3.2), L9	5.6 × 3.3, L21	Gordon and O'Farrell 1997	H, W, M
07	GFDL	GFDL_R15_a, United States	R15 (7.5 × 4.5), L9	3.7 × 4.5, L12	Manabe and Stouffer 1996	H, W
08	GISSM	GISS (Miller), United States	5.0 × 4.0, L9	5.0 × 4.0, L16	Miller and Jiang 1996	X
09	GISSR	GISS (Russell), United States	5.0 × 4.0, L9	5.0 × 4.0, L13	Russell et al. 1995	X
10	IAP	IAP/LASGI, China	R15 (7.5 × 4.5), L9	5.0 × 4.0, L20	Zhang et al. 2000	H, W, M
11	LMD	LMD/IPSLI, France	3.8 × 5.6, L15	2.0 × 2.0, L31	Braconnot et al. 1997	X
12	MPIE3	ECHAM3+LSG, Germany	T21 (5.6 × 5.6), L19	4.0 × 4.0, L11	Voss et al. 1998	H, W, M
13	MPIE4	ECHAM4+OPYC3	T42 (2.8 × 2.8), L19	2.8 × 2.8, L11	Roeckner et al. 1996	H, W, M
14	MRI	MR11, Japan	5.0 × 4.0, L15	2.5 × 2.0, L21	Tokioka et al. 1996	H, W
15	NCARCSM	NCAR (CSM), United States	T42 (2.8 × 2.8), L18	2.4 × 2.0, L45	Boville and Gent 1998	X
16	NCARWM	NCAR (WM), United States	R15 (7.5 × 4.5), L9	1.0 × 1.0, L20	Washington et al. 2000	X
17	NRL	NRLI, United States	T47 (2.5 × 2.5), L18	2.0 × 1.0, L25	Li and Hogan 1999	H, W
18	UKMO	UKMO (HadCM2), United Kingdom	3.75 × 2.5, L19	3.75 × 2.5, L20	Johns et al. 1997	H, W

TABLE S2. As in Table S1 but for CMIP-2 models.

ID	Short Name	Model	Atmosphere	Ocean	Reference	Flux Adj.
a	BMRC	BMRC, Australia	R21 (5.6 × 3.2), L17	5.6 × 3.2, L12	Colman 2001	H, W, sfc SW rad.
b	CCCM	CCCma, CGCMI, Canada	T32 (3.8 × 3.8), L10	1.8 × 1.8, L29	Kim et al. 2003	H, W
c	CCSR	CCSR, Japan	T21 (5.6 × 5.6), L20	2.8 × 2.8, L17	Emori et al. 1999	H, W
d	CERF	CERFACS2 (ARPEGE/OPA2), France	T31 (3.9 × 3.9), L19	2.0 × 2.0, L31	Barthelet et al. 1998	X
e	CSIRO	CSIRO(Mk2), Australia	R21 (5.6 × 3.2), L9	5.6 × 3.2, L21	Hirst et al. 2000	H, W, M
f	MPIE3	ECHAM3+LSG, Germany	T21 (5.6 × 5.6), L19	4.0 × 4.0, L11	Voss et al. 1998	H, W, M
g	GFDL	GFDL_R15_a, United States	R15 (7.5 × 4.5), L9	3.7 × 4.5, L12	Dixon et al. 2003	H, W
h	GISS	GISS (Russell), United States	5.0 × 4.0, L9	5.0 × 4.0, L13	Russell and Rind 1999	X
i	IAP	IAP/LASG2, China	R15 (7.5 × 4.5), L9	5.0 × 4.0, L20	Zhang et al. 2000	H, W, M
j	LMD	LMD/IPSL2, France	5.6 × 3.8, L15	2.0 × 2.0, L31	Laurent et al. 1998	X
k	MRI	MRI2 (Tokioka), Japan	5.0 × 4.0, L15	2.5 × 2.0, L21	Tokioka et al. 1996	H, W
l	NCARC	NCAR(CSM), United States	T42 (2.8 × 2.8), L26	1.0 × (0.3–1.0), L40	Buja and Craig 2002	X
m	NCARW	NCAR-WM, United States	R15 (7.5 × 4.5), L9	1.0 × 1.0, L20	Washington and Meehl 1996	X
n	NRL	NRL2, Monterey	T47 (2.5 × 2.5), L18	1.0 × 1.0, L25	Li and Hogan 1999	H, W
o	PCM	DOE-PCM, United States	T42 (2.8 × 2.8), L18	0.67 × 0.67, L32	Washington et al. 2000	X
p	UKMO	UKMO (HadCM2), United Kingdom	3.75 × 2.5, L19	3.75 × 2.5, L20	Johns et al. 1997	H, W
q	UKMO3	UKMO (HadCM3), United Kingdom	3.75 × 2.5, L19	1.25 × 1.25, L20	Gordon et al. 2000	X

TABLE S3. As in Table S1 but for CMIP-3 models.

ID	Short name	Model	Atmosphere	Ocean	Reference	Flux Adj.
C	MIRCH	MIROC3.2 (hires), Japan	T106, L56	0.28 × 0.19, L47	K-I-model-developers 2004	X
D	MIRCM	MIROC3.2 (medres), Japan	T42, L20	1.4 × (0.5–1.4) L43	K-I-model-developers 2004	X
F	BCCRC	BCCR-BCM2.0, Norway	T63, L31	1.5 × 0.5, L35	Furevik et al. 2003	X
G	C3T47	CGCM3.1 (T47), Canada	T47 (3.75 × 3.75), L31	1.85 × 1.85, L29	Kim et al. 2002	H,W
H	C3T63	CGCM3.1 (T63), Canada	T63 (2.8 × 2.8), L 31	1.4 × 0.94, L29	Flato and Boer 2001	H,W
I	CNRMC	CNRM-CM3, France	T63 (2.8 × 2.8), L45	1.875 × (0.5–2), L31	Salas-Melia et al. 2005, manuscript submitted to <i>Climate Dyn.</i>	X
J	CSIRO	CSIRO-Mk3.0, Australia	T63, L18	1.875 × 0.84, L31	Gordon et al. 2002	X
K	GFD20	GFDL-CM2.0, United States	2.5 × 2.0, L24	1.0 × (1/3–1), L50	Delworth et al. 2006	X
L	GFD21	GFDL-CM2.1, United States	2.5 × 2.0, L24	1.0 × (1/3–1), L50	Delworth et al. 2006	X
M	GISSA	GISS-AOM, United States	4 × 3, L12	4 × 3, L16	Lucarini and Russell 2002	X
N	GISSH	GISS-EH, United States	5 × 4, L20	5 × 4, L13	Schmidt et al. 2006	X
O	GISSR	GISS-ER, United States	5 × 4, L20	5 × 4, L13	Schmidt et al. 2006	X
P	IAPFG	IAP-FGOALS1-0-G, China	2.8 × 2.8, L26	1 × 1, L16	Yu et al. 2004	X
Q	INMCM	INM-CM3.0, Russia	5 × 4, L21	2.5 × 2, L33	Volodin and Diansky 2004	W
R	IPSLC	IPSL-CM4, France	2.5 × 3.75, L19	2 × (1–2), L30	Marti et al. 2005	X
S	MPICM	ECHAM5/MPI-OM	T63, L32	1 × 1, L41	Min et al. 2005	X
T	MRICM	MRI-CGCM2-3-2A, Japan	T42, L30	2.5 × (0.5–2.0)	Yukimoto and Noda 2002	H,M,W
U	NCARC	NCAR-CCSM3, United States	T85L26, 1.4 × 1.4	1 × (0.27–1), L40	Collins et al. 2005	X
V	NCARP	NCAR-PCM, United States	T42 (2.8 × 2.8), L18	1 × (0.27–1), L40	Kiehl and Gent 2004	X
W	UKMOC	UKMO-HadCM3, United Kingdom	3.75 × 2.5, L19	1.25 × 1.25, L20	Gordon et al. 2000	X
X	UKMOG	UKMO-HadGEM1, United Kingdom	1.875 × 1.25, L38	1.25 × 1.25, L20	Johns et al. 2004	X
Y	INGVE	INGV-SXG, Italy	T42, L19	2 × (0.5–2), L31	Gualdi et al. 2003	X

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