WCRP/CLIVAR Working Group on Coupled Modeling (WGCM)

Overview and Contribution to the WCRP Crosscut on Anthropogenic Climate Change

References: Selection of references arranged by subject that is relevant to the overview and contribution to the WCRP Crosscut Anthropogenic Climate Change (as of July 2009).

CMIP3

Lessons Learned from IPCC AR4: Scientific Developments Needed to Understand, Predict, and Respond to Climate Change
Doherty, S. J., S. Bojinski, A. Henderson-Sellers, K. Noone, D. Goodrich, N. L. Bindoff, J. A. Church, K. A. Hibbard, T. R. Karl, L. Kajfez-Bogataj, A. H. Lynch, D. E. Parker, I. C. Prentice, V. Ramaswamy, R. W. Saunders, M. Stafford Smith, K. Steffen, T. F. Stocker, P. W. Thorne, K. E. Trenberth, M. M. Verstraete, and F. W. Zwiers, (2009). Bull. Amer. Meteor. Soc., 90, 497–513.

The WCRP CMIP3 Multimodel Dataset: A New Era in Climate Change Research.
Meehl, G.A., C. Covey, T. Delworth, M. Latif, B. McAvaney, J.F.B. Mitchell, R.J. Stouffer, and K.E. Taylor (2007). Bull. Amer. Meteor. Soc., 88, 1383-1394.

Global Climate Projections
Meehl, G.A., T.F. Stocker, W.D. Collins, P. Friedlingstein, A.T. Gaye, J.M. Gregory, A. Kitoh, R. Knutti, J.M. Murphy, A. Noda, S.C.B. Raper, I.G. Watterson, A.J. Weaver and Z.-C. Zhao (2007): Global Climate Projections. Chapter 10 in: *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

Evaluation of climate models
Randall, D.A., R.A. Wood, S. Bony, R. Colman, T. Fichefet, J. Fyfe, V. Kattsov, A. Pitman, J. Shukla, J. Srinivasan, R.J. Stouffer, A. Sumi and K.E. Taylor 2007). Climate Models and Their Evaluation. In: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M.Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

The potential to narrow uncertainty in regional climate predictions
Hawkins E. and R. Sutton (2009). Bull. Amer. Meteorol. Soc., DOI: 10.1175/2009BAMS2607.1.

CMIP5 Experimental design and protocol

A Summary of the CMIP5 Experiment Design
Taylor, K. E., R. J. Stouffer and G. A. Meehl (2009), http://www-pcmdi.llnl.gov/

A Strategy for Climate Change Stabilization Experiments with AOGCMs and ESMs.
G. A. Meehl and K. Hibbard (2007), Report from the Aspen Global Change Institute 2006 Session - Earth System Models: The Next Generation, July 30 - August 5, 2006 and joint WGCM/AIMES Steering Committee Meeting 27 September 2006. WCRP Informal Report No 3/2007; ICPO Publication No. 112; IGBP Report No. 57.

A strategy for climate change stabilization experiments
Hibbard, K. A. , G. H. Meehl, P. Cox, and P. Friedlingstein (2007), EOS, 88, 217-221.

Near-term decadal experimentation

Coordinated experimentation to study multi-decadal prediction and near-term climate change
WGCM/WGSIP/CLIVAR/WCRP sub-group (Tim Stockdale, Gabi Hegerl , Jerry Meehl, James Murphy, Ron Stouffer, Marco Giorgetta, Masihide Kimoto, Tim Palmer, Wilco Hazeleger, Detlef Stammer, Ben Kirtman and George Boer) (2008).

Decadal prediction: Can it be skillful?
Meehl, G. A., L. Goddard, J. Murphy, R. J. Stouffer, G. Boer, G. Danabasoglu, K. Dixon, M. A. Giorgetta, A. Greene, E. Hawkins, G. Hegerl, D. Karoly, N. Keenlyside, M. Kimoto, B. Kirtman, A. Navarra, R. Pulwarty, D.

Smith, D. Stammer, and T. Stockdale (2009), Bull. Amer. Meteorol. Soc., DOI: 10.1175/2009BAMS2778.1.

CMIP5 Model Output

Sampling Physical Ocean Fields in WCRP CMIP5 Simulations
Griffies, S. M., A. J. Adcroft, H. Aiki, V. Balaji, M. Bentson, F. Bryan, G. Danabasoglu, S. Denvil, H. Drange, M. England, J. Gregory, R. W. Hallberg, S. Legg, T. Martin, T. McDougall, A.Pirani, G. Schmidt, D. Stevens, K. E. Taylor, and H. Tsujino (2009), ICPO Publication Series 137, WCRP Informal Report No. 3/2009.

IPCC Standard Output from Coupled Ocean-Atmosphere GCMs
WGCM Climate Simulation Panel with the assistance of PCMDI, 34pp., 2007.

The Earth System Grid: Enabling Access to Multimodel Climate Simulation Data
D. N. Williams, R. Ananthakrishnan, D. E. Bernholdt, S. Bharathi, D. Brown, M. Chen, A. L. Chervenak, L. Cinquini, R. Drach, I. T. Foster, P. Fox, D. Fraser, J. Garcia, S. Hankin, P. Jones, D. E. Middleton, J. Schwidder, R. Schweitzer, R. Schuler, A. Shoshani, F. Siebenlist, A. Sim, W. G. Strand, M. Su, and N. Wilhelmi (2009). Bull. Amer. Meteorol. Soc., DOI: 10.1175/2008BAMS2459.1.

Emissions scenarios and future climate forcings

Towards New Scenarios for Analysis of Emissions, Climate Change, Impacts, and Response Strategies
Moss R., Babiker, M., Brinkman, S., Calvo, E., Carter, T., Edmonds, J., Elgizouli, I., Emori, S., Erda, L., Hibbard, K., Jones, R., Kainuma, M., Kelleher, J., Lamarque, J.F., Manning, M., Matthews, B., Meehl, G., Meyer, L., Mitchell, J., Nakicenovic, N., O'Neill, B., Pichs, T., Riahi, K., Rose, S., Runci, P., Stouffer, R., van Vuuren, D., Weyant, J., Wilbanks, T., van Ypersele, J.P., and M. Zurek (2008). Intergovernmental Panel on Climate Change, Geneva, 132 pp.

Representative Concentration 1 Pathways: A New Approach to Scenario Development for the IPCC Fifth Assessment Report.
Moss, R., Edmonds, J., Hibbard, K., Carter, T., Emori, S., Kainuma, M., Kram, T., Manning, M., Meehl, J., Mitchell, J., Nakicenovic, N., Riahi, K., Rose, S., Smith, S., Stouffer, R., Thomson, A., van Vuuren, D., Weyant, J., and T. WIllbanks, (2009). Nature. in press.

Special Report on Emissions Scenarios: A Special Report of Working Group III of the Intergovernmental Panel on Climate Change
Nakicenovic, N., J. Alcamo, G. Davis, B. de Vries, J. Fenhann, S. Gaffin, K. Gregory, A. Grübler, T. Yong Jung, T. Kram, E. Lebre La Rovere, L. Michaelis, S. Mori, T. Morita, W. Pepper, H. Pitcher, L. Price, K. Riahi, A. Roehrl, H.-H. Rogner, A. Sankovski, M. Schlesinger, P. Shukla, S. Smith, R. Swart, S. van Rooijen, N. Victor, Z. Dadi, (2000), Cambridge University Press, Cambridge, U.K., 599 pp. Available online at: http://www.grida.no/climate/ipcc/emission/index.htm.

Multimodel projections of stratospheric ozone in the 21st Century
Eyring, V., D. W. Waugh, G. E. Bodeker, E. Cordero, H. Akiyoshi, J. Austin, S. R. Beagley, B. Boville, P. Braesicke, C. Bru.hl, N. Butchart, M. P. Chipperfield, M. Dameris, R. Deckert, M. Deushi, S. M. Frith, R. R. Garcia, A. Gettelman, M. Giorgetta, D. E. Kinnison, E. Mancini, E. Manzini, D. R. Marsh, S. Matthes, T. Nagashima, P. A. Newman, J. E. Nielsen, S. Pawson, G. Pitari, D. A. Plummer, E. Rozanov, M. Schraner, J. F. Scinocca, K. Semeniuk, T. G. Shepherd, K. Shibata, B. Steil, R. Stolarski, W. Tian, and M. Yoshiki, (2007) J. Geophys. Res., 112, D16303, doi:10.1029/2006JD008332.

Climate Feedbacks

How well do we understand and evaluate climate change feedback processes?
Bony S, R Colman, V M Kattsov, R P Allan, C S Bretherton, J-L Dufresne, A Hall, S Hallegatte, M M Holland, W Ingram, D A Randall, B J Soden, G Tselioudis and M J Webb, (2006): J. Climate,19 (15), 3445-3482.

CFMIP-GCSS plans for advancing assessments of cloud-climate feedbacks.
Bony S, M Webb, B Stevens, C Bretherton, S Klein and G Tselioudis (2008): GEWEX News, 18, No. 4, 10-12.

An assessment of the primary sources of spread of global warming estimates from coupled atmosphere-ocean models.
Dufresne J.-L.,and S. Bony.
J. Climate , Oct. 2008, Vol. 21, No. 19, p. 5135-5144, doi: 10.1175/2008JCLI2239.1.

Climate-carbon cycle feedback analysis: Results from the C4MIP Model Intercomparison
Friedlingstein, P., P. Cox, R. Betts, L. Bopp, W. vonBloh, V. Brovkin, P. Cadule, S. Doney, M.Eby, Kato, M. Kawamiya, W. Knorr, K. Lindsay, H.D. Mathews, T. Raddatz, P. Rayner, C. Reick, E. Roeckner, K.G. Schnitzler, R. Schnur, K. Strassmann, A.J. Weaver, C. Yoshikawa, and N. Zeng, (2006), J. Climate, 19, 3337-3353, doi:10.1175/JCLI3800.1.

Efficacy of climate forcings
Hansen, J., Mki. Sato, R. Ruedy, L. Nazarenko, A. Lacis, G.A. Schmidt, G. Russell, I. Aleinov, M. Bauer, S. Bauer, N. Bell, B. Cairns, V. Canuto, M. Chandler, Y. Cheng, A. Del Genio, G. Faluvegi, E. Fleming, A. Friend, T. Hall, C. Jackman, M. Kelley, N. Kiang, D. Koch, J. Lean, J. Lerner, K. Lo, S. Menon, R. Miller, P. Minnis, T. Novakov, V. Oinas, Ja. Perlwitz, Ju. Perlwitz, D. Rind, A. Romanou, D. Shindell, P. Stone, S. Sun, N. Tausnev, D. Thresher, B. Wielicki, T. Wong, M. Yao, and S. Zhang, (2005), J. Geophys. Res. 110, D18104, doi:10.1029/2005JD005776.

A new method for diagnosing radiative forcing and climate sensitivity
Gregory, J. M., W. J. Ingram, M. A. Palmer, G. S. Jones, P. A. Stott, R. B. Thorpe, J. A. Lowe, T. C. Johns, and K. D. Williams, (2004), Geophys. Res. Lett., 31, L03205, doi:10.1029/2003GL018747.

Tropospheric adjustment induces a cloud component in CO2 forcing
Gregory, J.M., and M. J. Webb, (2008), J. of Climate, 21, 58-71, doi:10.1175/2007JCLI1834.1.
.1.