WCRP Grand Challenge Workshop: Earth's Climate Sensivities

Ringberg, 22-27 March 2015

World Climate Research Programme

SUNDAY 22 March Arrival participants – Informal discussions and drinks

MONDAY 23 March

		Setting the scene Chair : Bjorn Stevens
09:00	09:15	**Bjorn Stevens** and organizing committee: *Welcome and goals of the workshop*
09:15	09:30	**Steve Sherwood** (UNSW, AU): *Introduction: the forcing-feedback paradigm*
09:30	09:45	**Reto Knutti** (ETH, CH): *Limitations of forcing feedback frameworks*
09:45	10:00	**Jonathan Gregory** (Univ Reading, UK): *The inconstancy of the climate feedback parameter*
10:00	10:30	Discussion
10:30	11:00	**Coffee break**
		Limitations in the forcing-feedback paradigm Chair : TBD
11:00	11:15	**Kyle Armour** (MIT, US): *Robust increase in effective climate sensitivity with transient warming*
11:15	11:30	**Tim Andrews** (MetOffice, UK): *Feedbacks and SST patterns*
11:30	11:45	**Rowan Sutton** (Univ Reading, UK): *TCR and near-term climate change*
11:45	12:00	**Nicolas Bellouin** (Univ Reading, UK): *Fast Adjustments*
12:00	12:30	Discussion
12:30	14:00	**Lunch**
		Energy Budget and Balance Chair: TBD
14:00	14:15	**John Church** (CSIRO, AU): *Estimates of Ocean warming since 2006*
14:15	14:30	**John Fasullo** (NCAR, US): *Understanding Sea Level as a Constraint on Climate Variability and Sensitivity*
14:30	14:45	**Piers Forster** (Univ Leeds ,UK): *Climate sensitivity and aerosol forcing diagnosed from near past and near term future surface temperature and energy budget changes*
14:45	15:00	**Yu Kosaka** (Univ Tokyo, JA): *Earth's energy budget in the presence of internal climate variability*
15:00	15:30	Discussion
15:30	16:00	**Coffee break**
		Break-Out Groups
16:00	16:15	Introduction to BOG discussion
16:15	17:45	Breakout sessions
17:45	18:00	Free time
18:00	19:00	**Dinner, followed by Ice breaker**

TUESDAY 24 March

		Inferences from recent observations Chair : TBD
09:00	09:15	**Myles Allen** (Oxford Univ, UK): *Do we actually need better probability distribution functions for equilibrium and transient climate response?*
09:15	09:30	**Andrew Dessler** (Texas A&M, US): *What can we learn about ECS from short-term interannual variations*
09:30	09:45	**Gabi Hegerl** (U. Edinburgh, UK): *What observed and reconstructed climate change can and can't tell about equilibrium and transient climate sensitivity*
09:45	10:00	**Nic Lewis** (Independent, UK): *Pitfalls in climate sensitivity estimation*
10:00	10:30	Discussion
10:30	11:00	**Coffee break**
		Inferences from recent observations (cont'ed) Chair : TBD
11:00	11:15	**Steve Sherwood** (UNSW, AU): *Trends in tropical troposphere temperatures, winds, and a possible forcing on recent climate*
11:15	11:30	**Graeme Stephens** (JPL, US): *Prospects for observational constraints on climate sensitivity*
11:30	11:45	**Bjorn Stevens** (MPI-M, DE): *Some (not yet entirely convincing) reasons why 2.0 < ECS < 3.5*
11:45	12:00	**Trude Storelvmo** (Yale U., US): *Disentangling aerosol cooling and greenhouse warming to reveal climate sensitivity*
12:00	12:30	Discussion
12:30	14:00	**Lunch**
14:00	15:30	***Plenum discussion of breakout discussions***
15:30	16:00	**Coffee break**
16:00	17:30	Breakout sessions
17:30	18:00	Free time
18:00	19:00	**Dinner**
19:00	21:00	Informal discussions

WEDNESDAY 25 March

		Inferences from the paleo record Chair : TBD
08:45	09:00	**Ayako Abe-Ouchi** (U. Tokyo, JA): *Challenge of paleoclimate GCM modelling for climate sensitivity studies*
09:00	09:15	**Rodrigo Caballero** (Stockholm U., SE): *What do we learn about climate sensitivity from deep-time warm climates?*
09:15	09:30	**Tamsin Edwards** (The Open University, Milton Keynes): *Whatever happened to PalaeoQUMP?*
09:30	09:45	**James Annan** (Blueskies Research, UK): *The LGM and climate sensitivity*
09:45	10:00	**Michel Crucifix** (U.C.Louvain, Belgium): *(Paleo-)Climate sensitivity: definitions and ideas from the NPG literature*
10:00	10:30	Discussion
10:30	11:00	**Coffee break**
		Fingerprints of climate sensitivities Chair : TBD
11:00	11:15	**Christopher Golaz** (GFDL, US): *Tuning the indirect effect, engineering the climate sensitivity: what should modelers do with these newly found powers?*
11:15	11:30	**Olivier Geoffroy** (UNSW, AU): *Tropical fingerprints of low and high sensitivities in CMIP5 models*
11:30	11:45	**Gavin Schmidt** (GISS, US): *Use of GCMs in constraining sensitivity*
11:45	12:00	**Mojib Latif** (GEOMAR, DE): *The Challenge of Climate Model Verification*
12:00	12:30	Discussion
12:30	14:00	**Lunch**
14:00	15:00	***Plenary discussion/presentation of issues identified in breakout groups***
15:00	19:00	**Hike**
19:00	20:00	**Dinner**
20:00	21:00	Informal Discussion (report on hike conversations?)

THURSDAY 26 March

		Model insights into sensitivity and feedbacks mechanisms Chair : TBD
09:00	09:15	**Jessica Vial** (LMD, France): *On the role of convection and circulation in cloud feedbacks*
09:15	09:30	**Mark Webb** (MetOffice, UK): *Investigation of the mechanisms underlying dffering cloud feedbacks in climate models*
09:30	09:45	**Thorsten Mauritsen** (MPI-M, DE): *What if the Earth had an adaptive IRIS?*
09:45	10:00	**Sandrine Bony** (CNRS LMD/IPSL, FR): *Do models over-estimate cloud feedbacks?*
10:00	10:15	**Mark Zelinka** (LLNL, US): *Don't count on it: Reasons to doubt a strong negative cloud feedback*
10:00	10:15	Discussion
10:30	11:00	**Coffee break**
		Inferences from multiple constraints and communicating advances in understanding Chair : TBD
11:00	11:15	**Lennart Bengtsson** (MPI-M (Emeritus), DE): *A more robust method for climate sensitivity studies*
11:15	11:30	**James Annan** (Blueskies Research, UK): *How to synthesise multiple constraints*
11:30	11:45	**Dave Sexton** (MetOffice, UK): *The key principles in dealing with multiple observational constraints and imperfect models, and their implications for constraining equilibrium climate sensitivity*
11:45	12:33	Discussion
12:30	14:00	**Lunch**
14:00	15:30	Breakout sessions
15:30	16:00	**Coffee break**
16:00	18:00	Free Time
18:00	19:00	***Plenary discussion/presentation of issues identified in breakout groups***
19:00	20:00	**Dinner**
20:00	22:00	Open discussion

FRIDAY 27 March

09:00	12:00	***Wrap up and next steps***