

Decadal Forecast Exchange

Doug Smith and Adam Scaife plus the decadal prediction community

- Many groups are now developing decadal predictions
- Key experiments done and analysed for CMIP5
- What about *real time* predictions?

**15th session of the WMO Commission for Climatology
recommended action to start the coordination and
exchange of decadal predictions**

**Proposal went out to various groups to exchange decadal
prediction information**

***research exercise – we can learn a lot from this
prevent over-confidence from a single model
equal access, ownership and recognition***

We had an overwhelmingly positive response:

Uni. Tokyo – *Kimoto Masahide* **MRI** – Masayoshi Ishii
SMHI – *Klaus Wyser, Colin Jones* **KNMI** – *Wilco Hazeleger, Bert Wouters*
IC3 – *Francisco Doblas-Reyes, Virginie Guemas* **GFDL** – *Tony Rosatti*
MPI – *Daniela Matei, Wolfgang Muller, Holger Pohlman* **RSMAS** – *Ben Kirtman*
CCCMA – *George Boer, Bill Merryfield* **UKMO-Hadley** – *Doug Smith, Adam Scaife*
NRL – *Judith Lean, David Rind* **NOAA** – *Arun Kumar*

Are others planning to make regular decadal predictions? If so, would you like to take part?

We are exchanging very basic quantities:

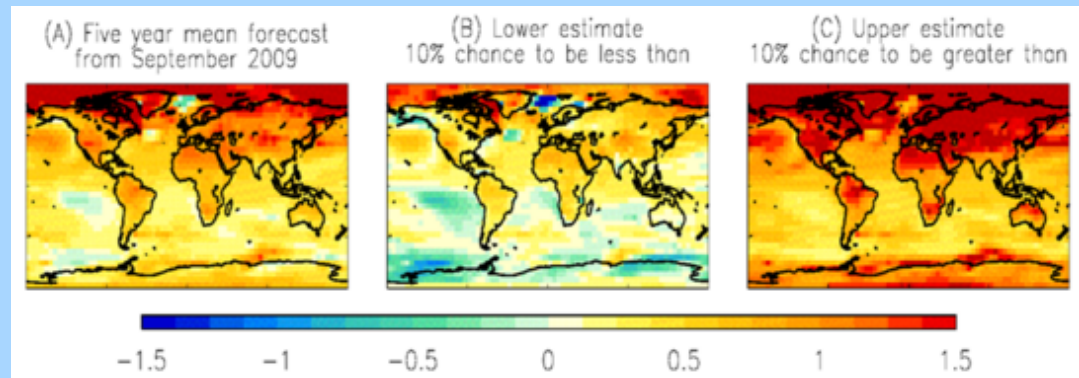
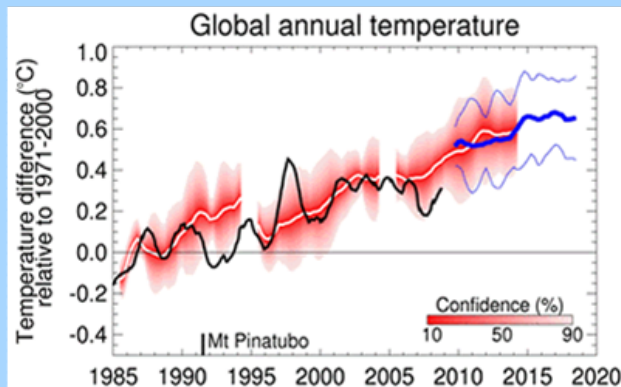
Global Annual Mean Temperature

One file for each year, each member

Exchanged once per year around November

Equal ownership

Example diagnostics:



Surface temperature: 2012-2016 relative to 1971-2000

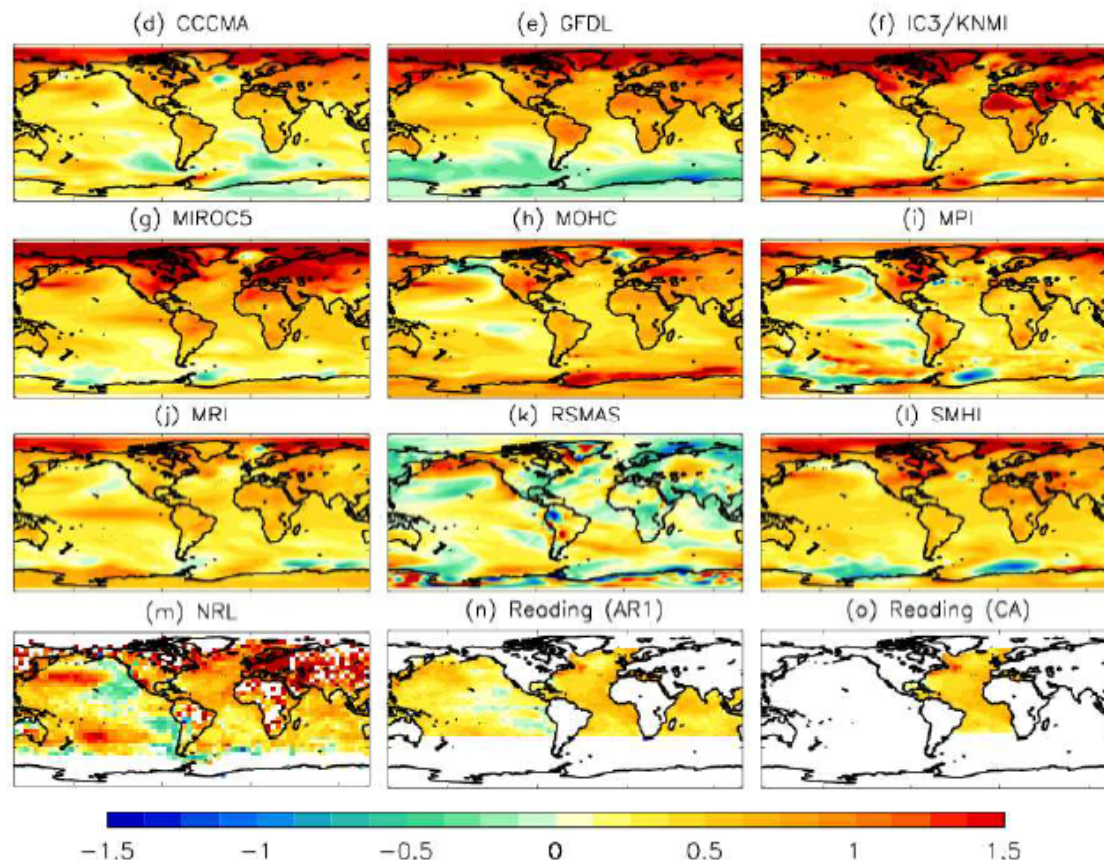


Figure 3: Forecast temperature anomalies (as Fig. 2) for the 5-year period 2012 to 2016.

Surface temperature: 2012-2016

effect of initialisation

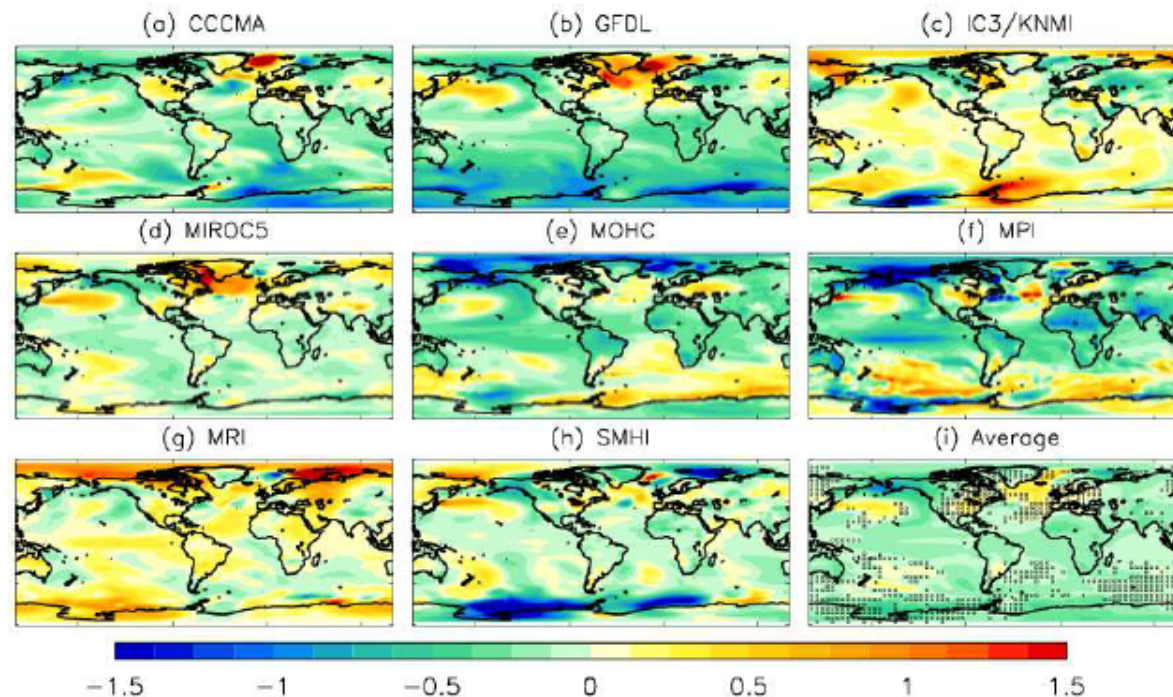


Figure 6: Impact of initialization (initialized minus uninitialized ensemble means) on forecasts of the period 2012 to 2016. Unstippled regions in (i) indicate a 90% or higher probability that differences between the initialized and uninitialized ensemble means did not occur by chance (based on a 2 tailed t-test of differences between the two ensemble means assuming the ensembles are normally distributed).

SUMMARY

Real-time multi-model decadal climate predictions

Doug M. Smith, Adam A. Scaife, George J. Boer, Mihaela Caian, Francisco J. Doblas-Reyes, Virginie Guemas, Ed Hawkins, Wilco Hazeleger, Leon Hermanson, Chun Kit Ho, Masayoshi Ishii, Viatcheslav Kharin, Masahide Kimoto, Ben Kirtman, Judith Lean, Daniela Matei, William J. Merryfield, Wolfgang A. Müller, Holger Pohlmann, Anthony Rosati, Bert Wouters and Klaus Wyser.

Climate Dynamics, submitted 2012. Also IPCC AR5...

Please contact Doug Smith or Adam Scaife to contribute your forecasts to the exchange for 2013...