

Decadal Forecast Exchange

Doug Smith and Adam Scaife

- **Many groups are now developing decadal predictions**
- **Key experiments are being done 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 earlier last year 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've had an overwhelmingly positive response:

GFDL – *Tony Rosati*

Uni. Tokyo – *Kimoto Masahide*

MRI – *Masayoshi Ishii*

SMHI – *Klaus Wyser, Colin Jones*

KNMI – *Wilco Hazeleger*

IC3 – *Francisco Doblas-Reyes*

MPI – *Daniela Matei*

RSMAS – *Ben Kirtman*

CCCMA-EC – *George Boer*

IfM-GEOMAR - *Mojib Latif*

CERFACS – *Laurent Terray*

UKMO-Hadley – *Doug Smith*

NCEP-*Arun Kumar*

Are others planning to make regular decadal predictions?

If so, would you like to take part?

We are exchanging very basic quantities:

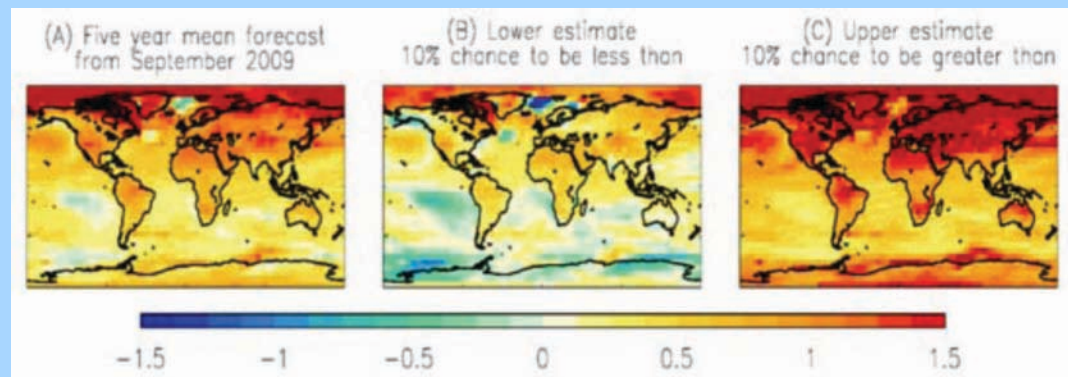
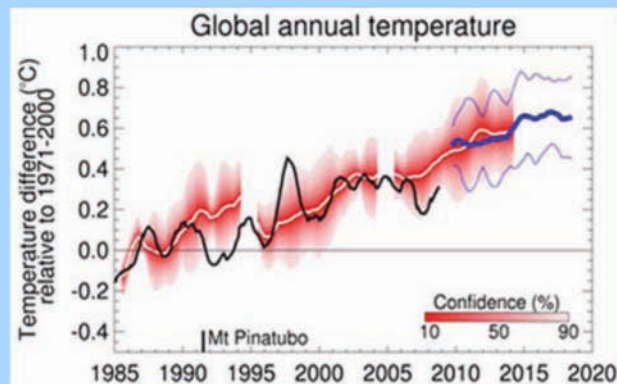
Global Annual Mean Temperature

One file for each year, each member

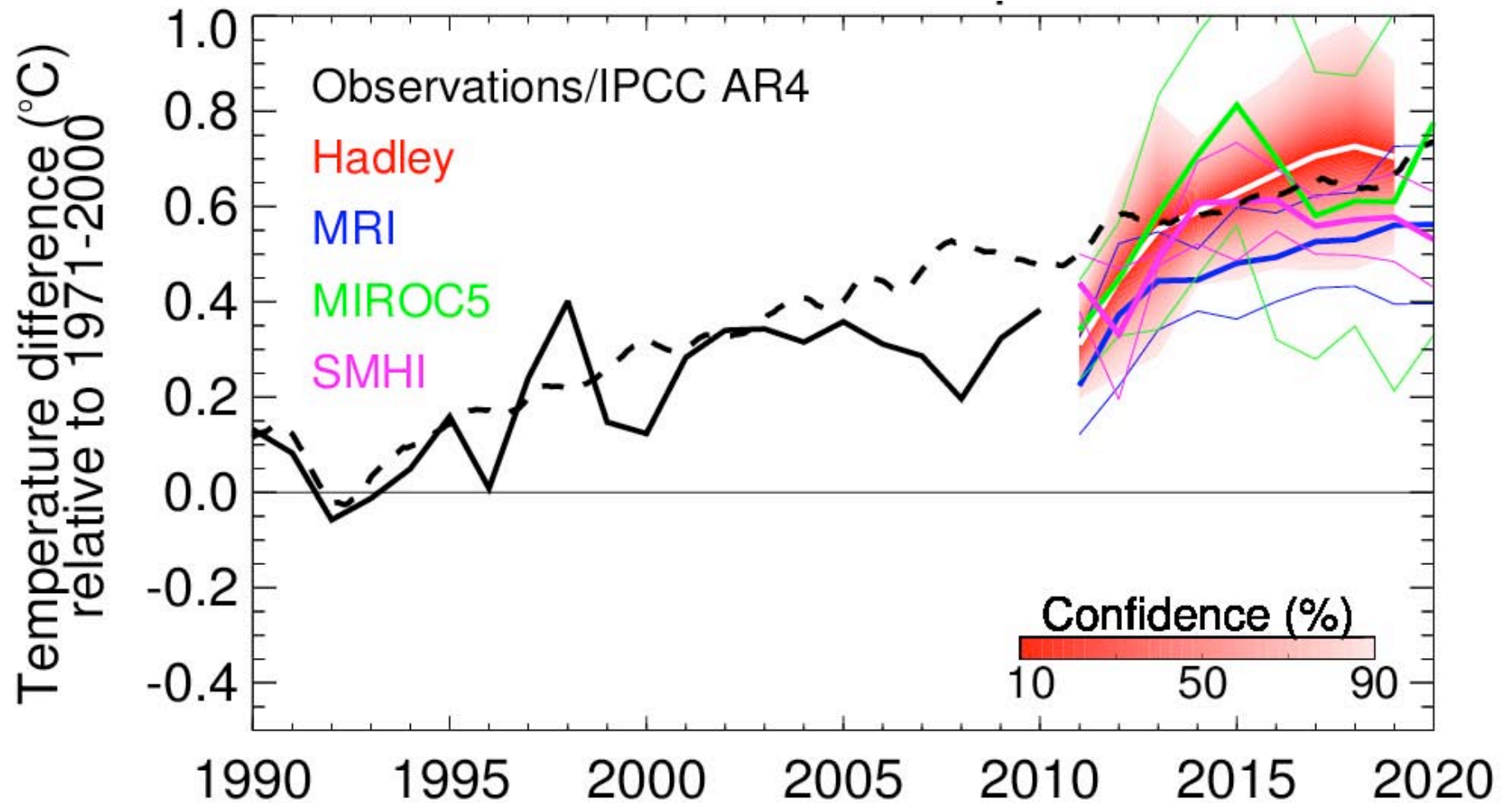
Exchanged once per year around November

Equal ownership

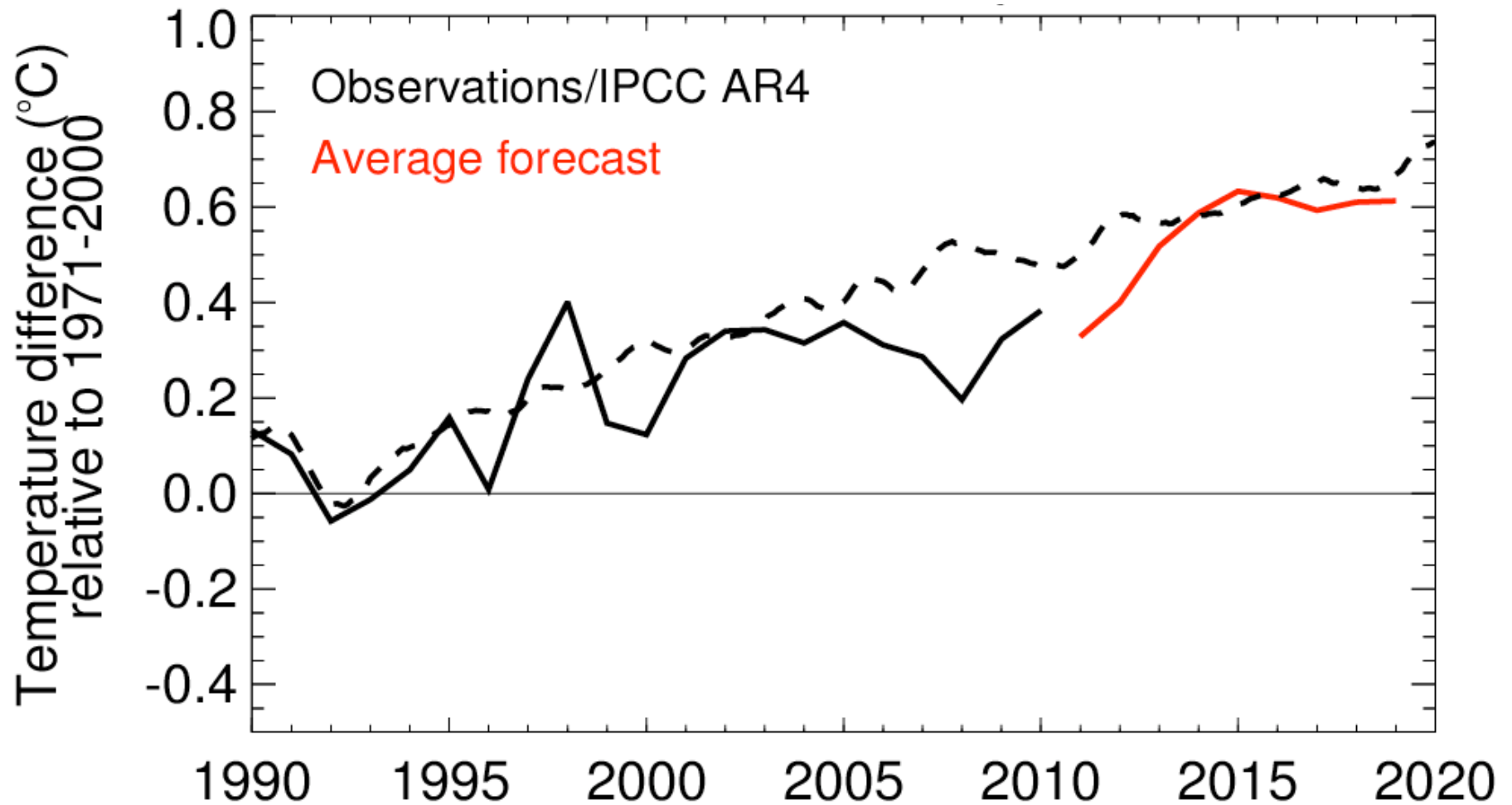
Example diagnostics:



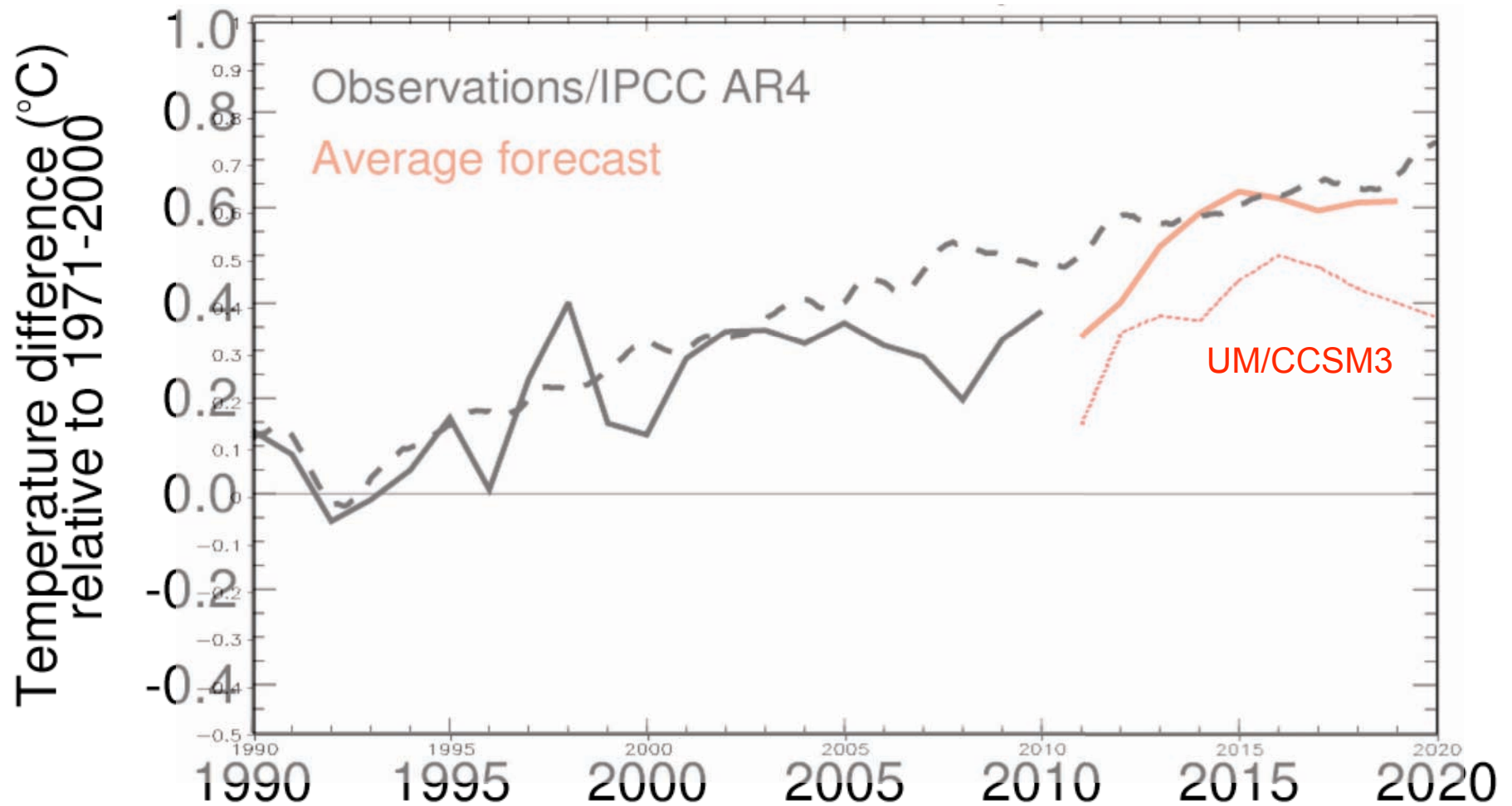
Annual global temperature



Annual global temperature

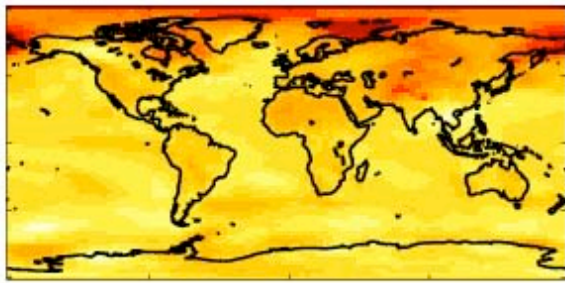


Annual global temperature

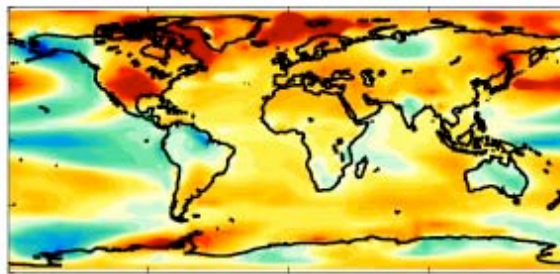


Surface temperature: 2011 relative to 1971-2000

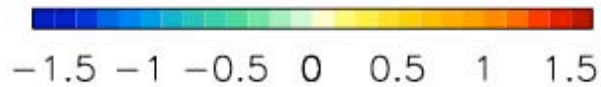
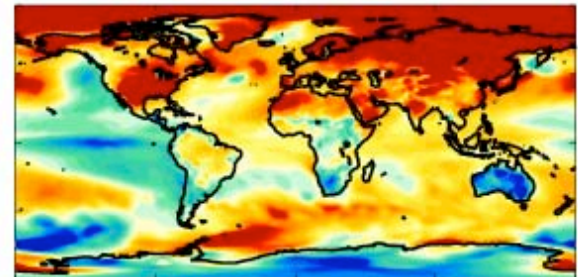
IPCC AR4 : 2011



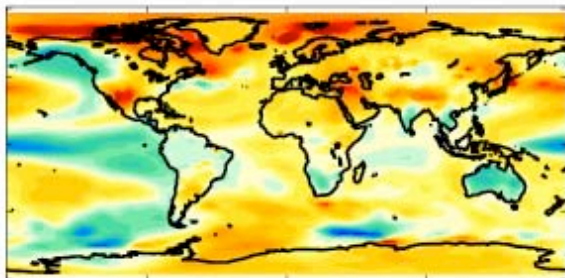
Hadley: 2011



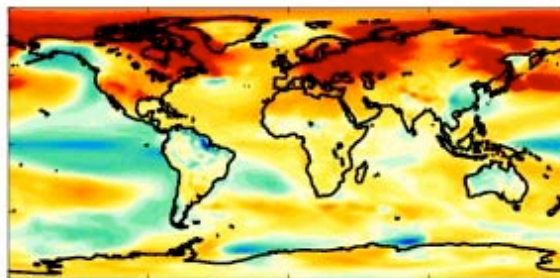
SMHI: 2011



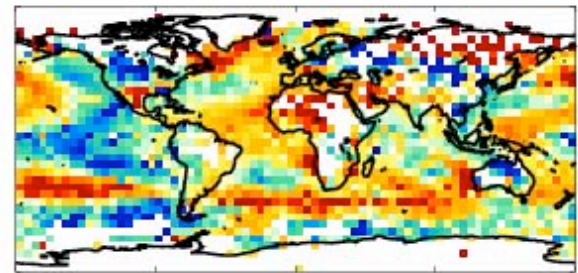
MRI: 2011



MIROC5: 2011

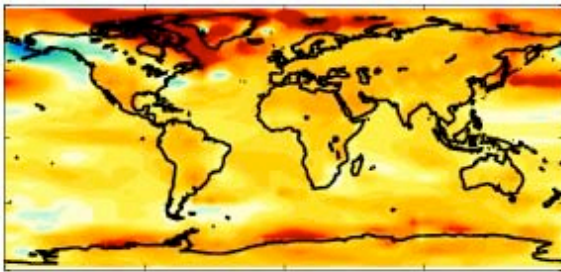


Observations
Jan – April 2011

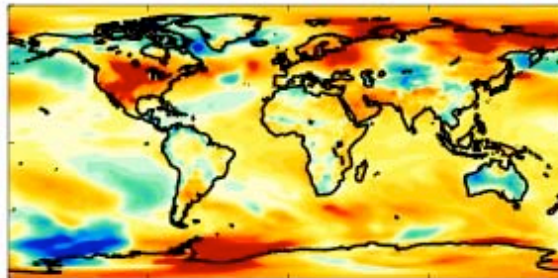


Surface temperature: 2012

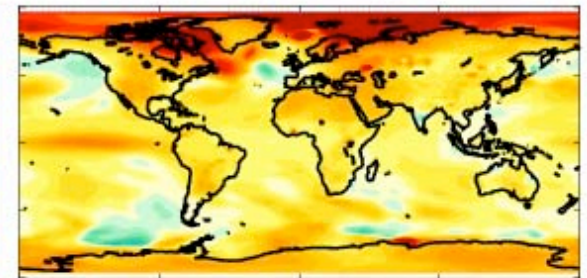
Hadley: 2012



SMHI: 2012

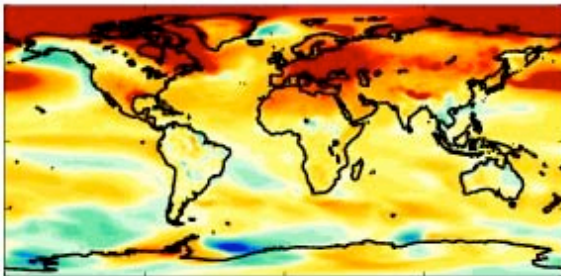


MRI: 2012

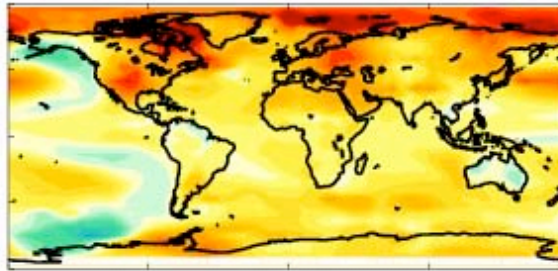


-1.5 -1 -0.5 0 0.5 1 1.5

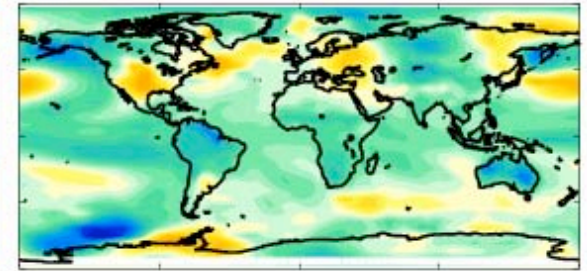
MIROC5: 2012



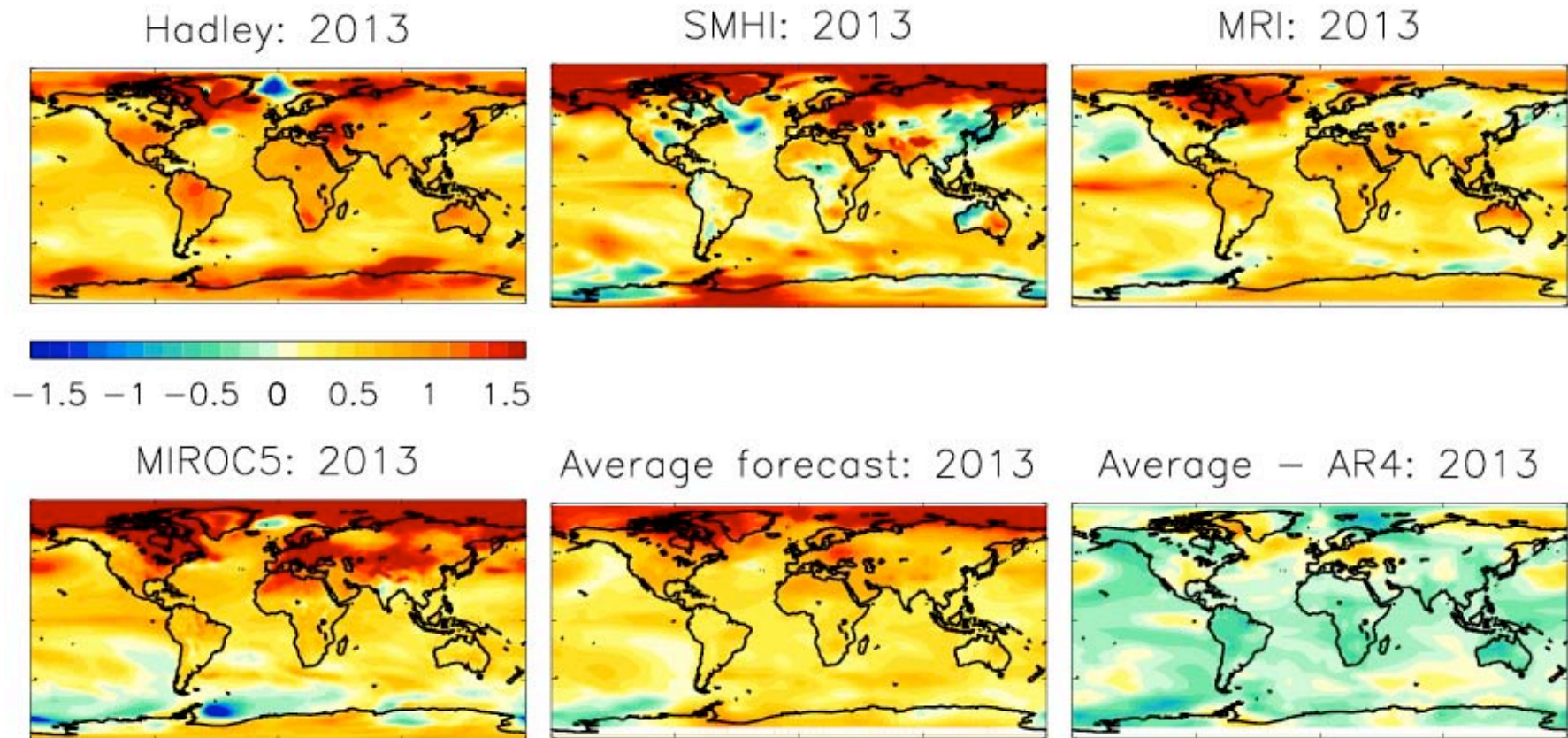
Average forecast: 2012



Average - AR4: 2012

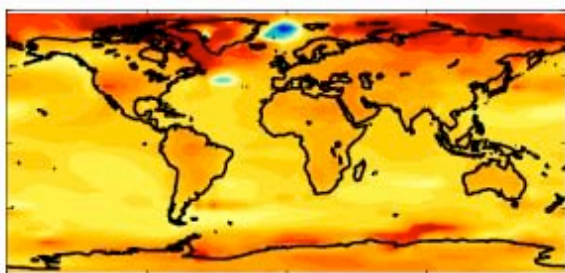


Surface temperature: 2013

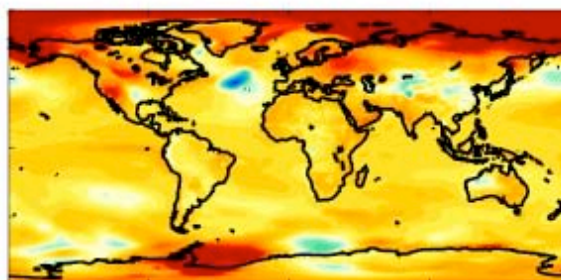


Surface temperature: 2012-16

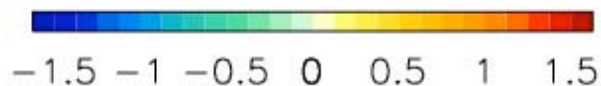
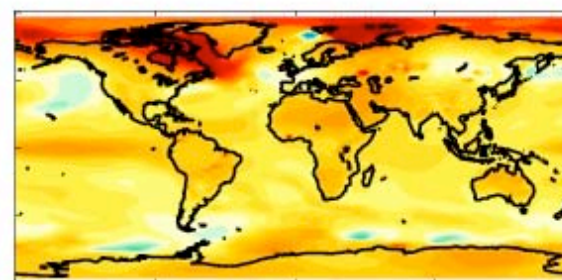
Hadley: 2012–2016



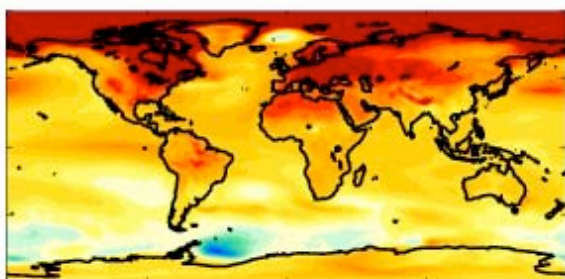
SMHI: 2012–2016



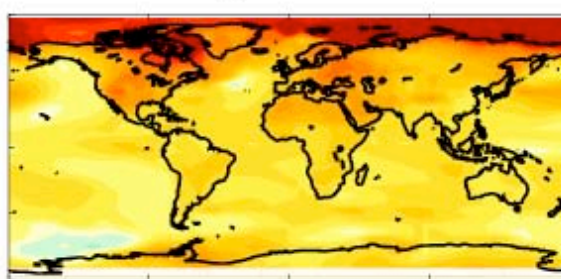
MRI: 2012–2016



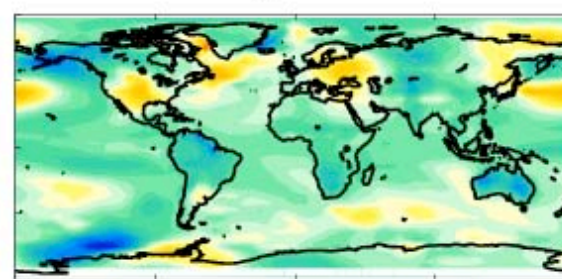
MIROC5: 2012–2016



Average forecast

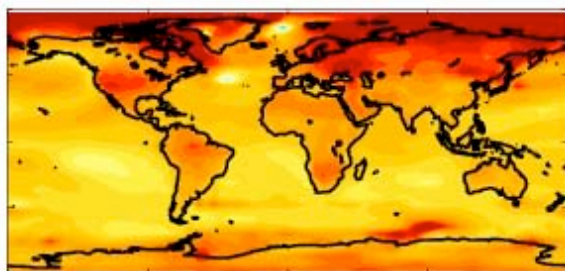


Average – AR4

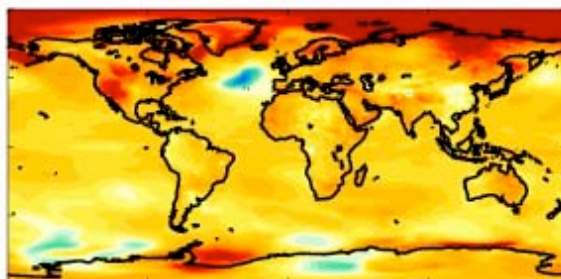


Surface temperature: 2015-19

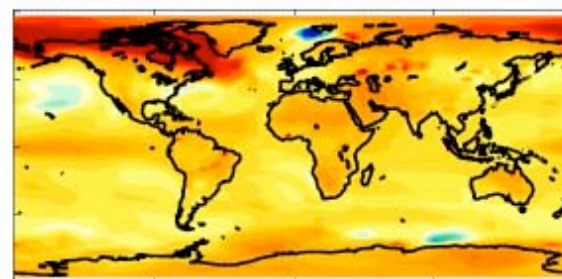
Hadley: 2015-2019



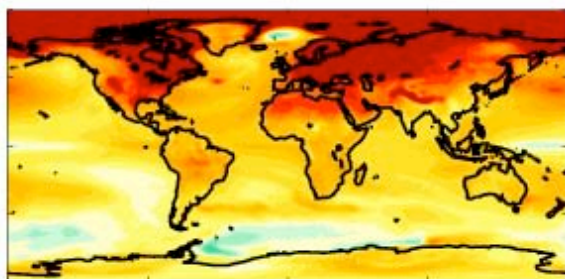
SMHI: 2015-2019



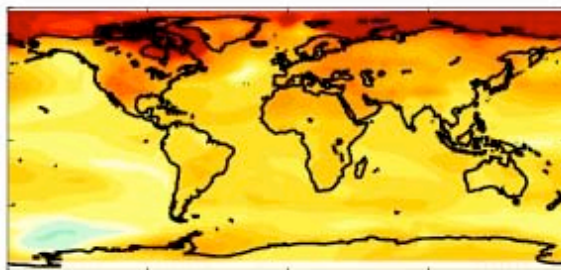
MRI: 2015-2019



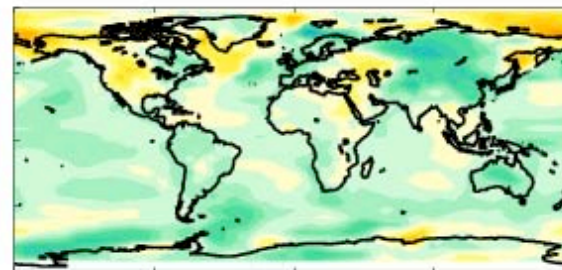
MIROC5: 2015-2019



Average forecast

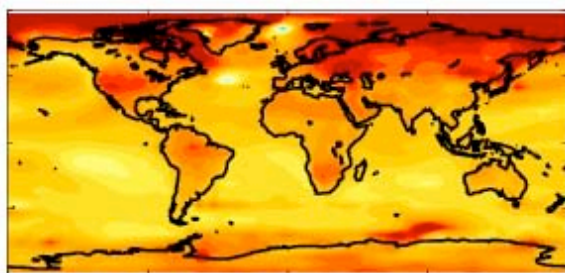


Average - AR4

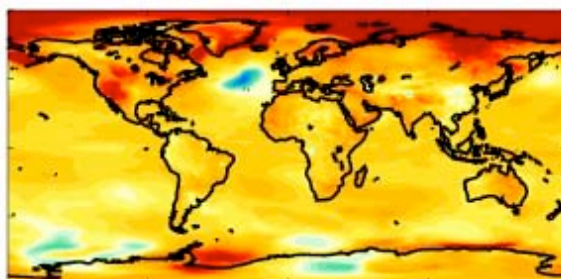


Surface temperature: 2015-19

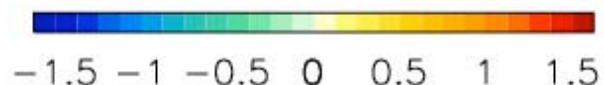
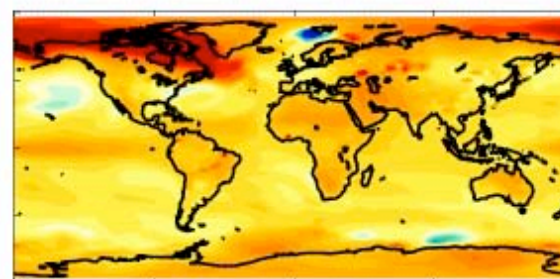
Hadley: 2015-2019



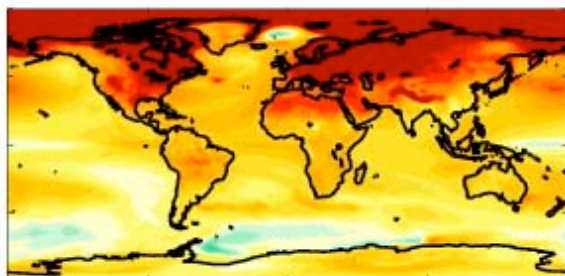
SMHI: 2015-2019



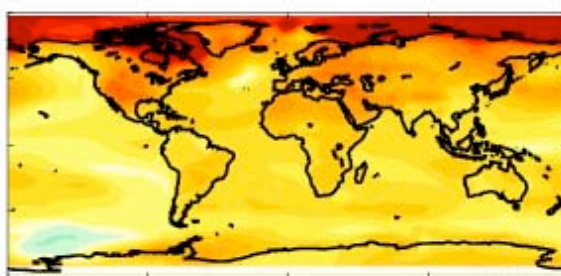
MRI: 2015-2019



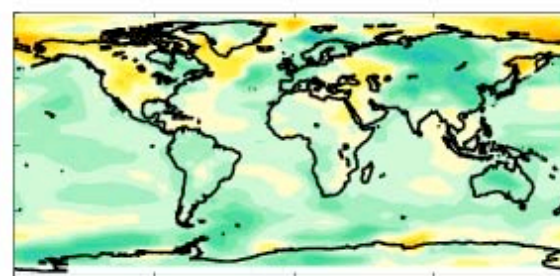
MIROC5: 2015-2019



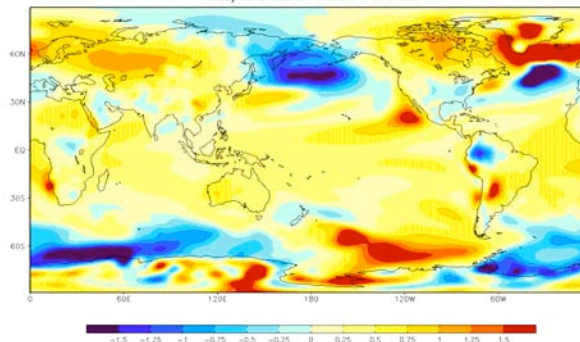
Average forecast



Average - AR4



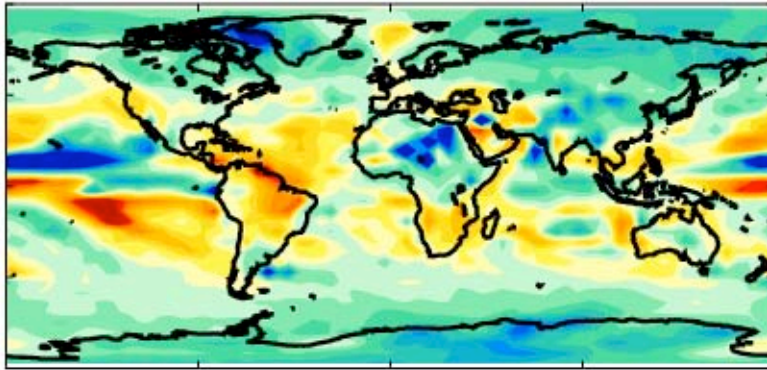
UM/CCSM3 2015-2019



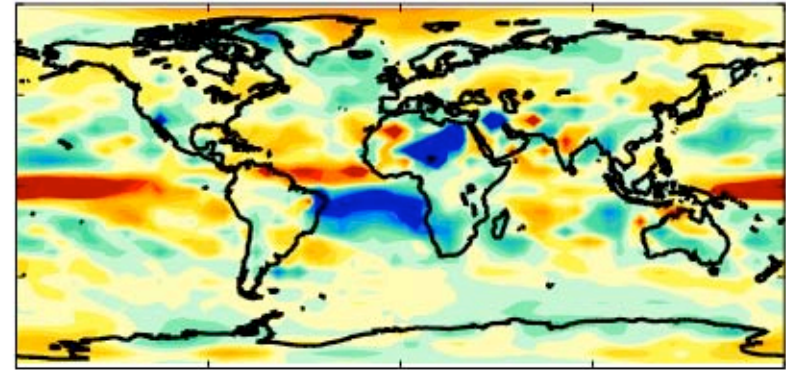
Precipitation?

Precipitation

DePreSys : 2012–2016

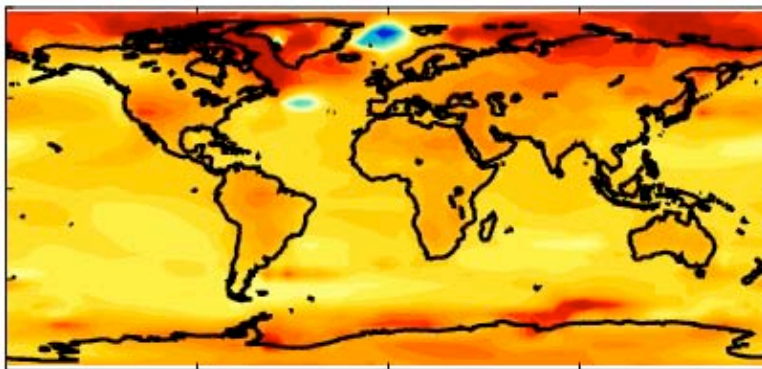


DePreSys–Transient : 2012–2016



Temperature

DePreSys : 2012–2016



DePreSys–Transient : 2012–2016

