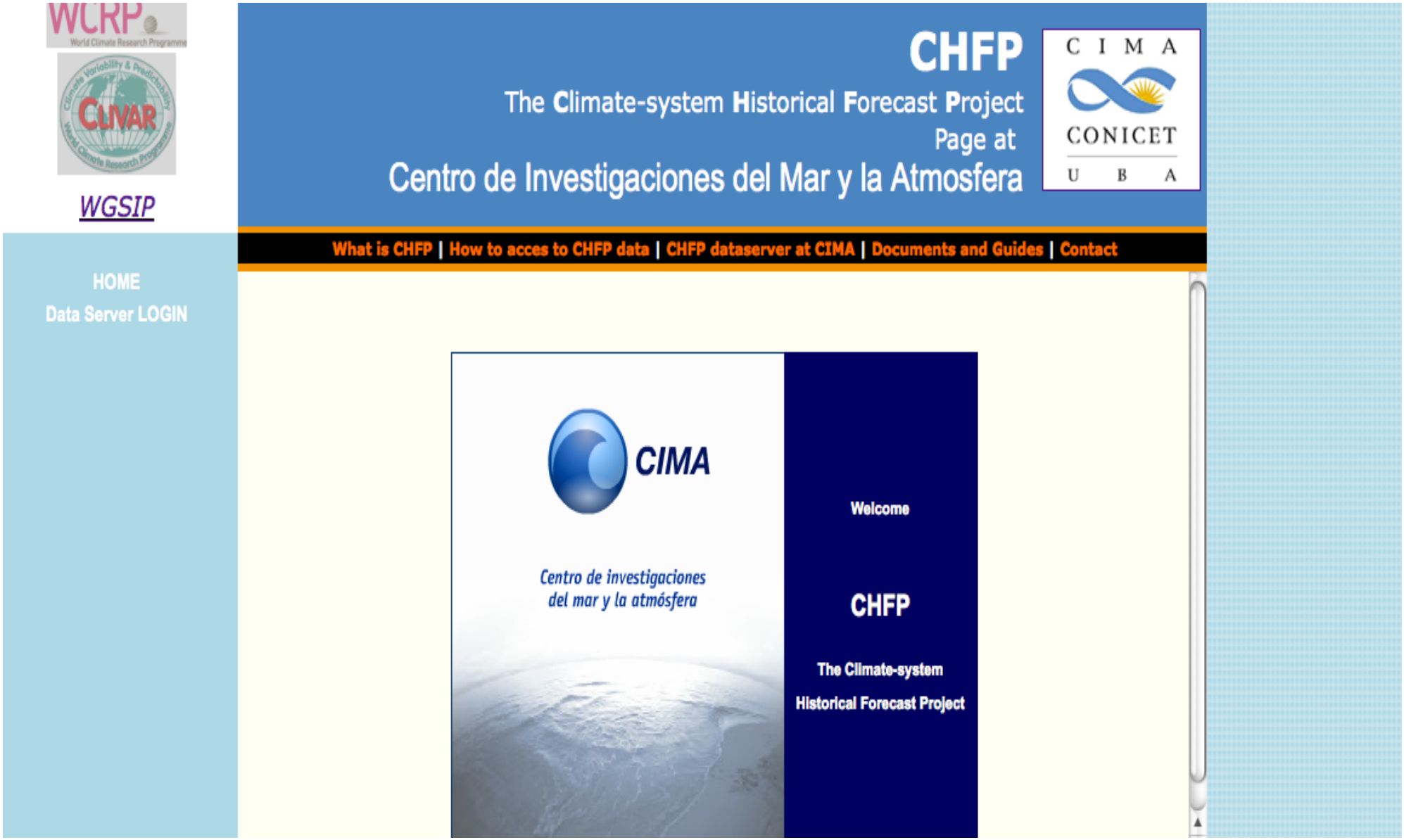
WGSIP

- **Seasonal/CHFP**
  - GLACE-2
  - Strat-HFP
  - Sea-Ice HFP
  - US NMME
- **Decadal**
- **Sub-Seasonal**

Participating Groups

1. EU ENSEMBLES (Linked Server)
2. UKMET (CIMA)
3. APCC (Linked Server)
4. NOAA-NCEP
5. NOAA-GFDL
6. NASA-GMAO (Jan 2012)
7. COLA-UMiami-NCAR (September 2011)
8. BMRC
9. JMA (CIMA)
10. CCCma (CIMA)
11. CPTEC
12. IRI

Completed
Hindcasts Done, Data Transfer Pending
Hindcasts Nearly Completed
Black – Status Pending



http://chfps.cima.fcen.uba.ar/

CIMA CHFP Data Server

CHFP: Three major topics and (now) three experiments:

Land Surface: the GLACE experiment:

- **Soil moisture experiments in seasonal mode**
- **Led by R Koster**

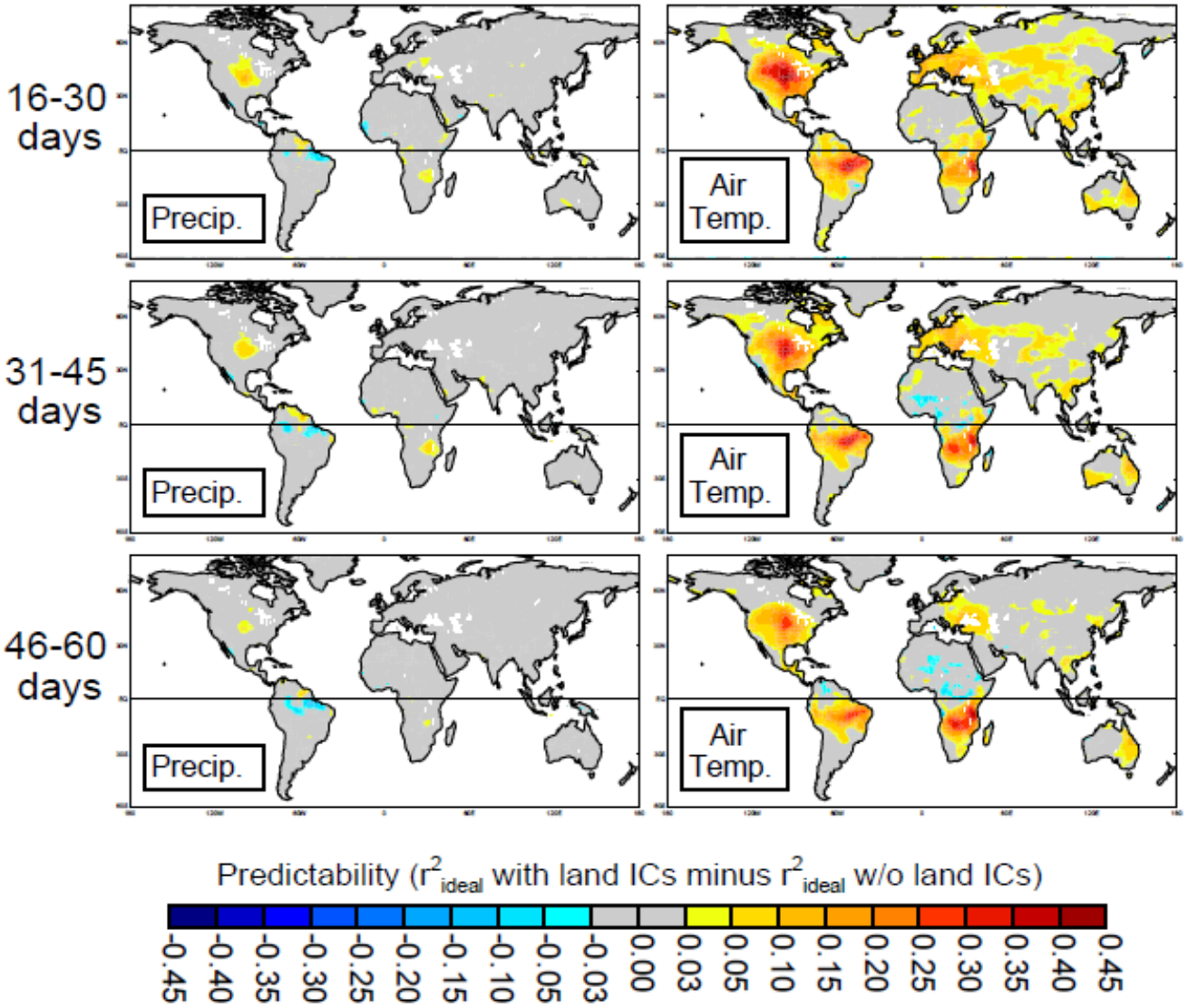
Stratosphere: Stratospheric Historical Forecast Project

- **High Top – Low Top hindcasts**
- **Led by A Scaife**

Sea Ice: Ice Historical Forecast Project

- **Case studies with/without initial sea-ice data (2007/1996)**
- **Led by D Peterson**

GLACE-2: An international project aimed at quantifying soil moisture impacts on prediction skill



(Koster et al. 2011, in press)

GLACE-2: An international project aimed at quantifying soil moisture impacts on prediction skill

1. The individual models vary in their ability to extract forecast skill from land initialization (not shown). In general,
   -- Low skill for precipitation
   -- Moderate skill (in places) for temperature, even out to two months.

2. Land initialization impacts on skill increase dramatically when conditioned on the size of the initial local soil moisture anomaly.

If you know the local soil moisture anomaly at time 0 is large, you can expect (in places) that initializing the land correctly will improve your temperature forecast significantly, and your precipitation forecast slightly, even out to 2 months.

3. The results highlight the potential usefulness of improved observational networks for prediction.

Ice HFP – experiment & first results

Initial focus on 1996 and 2007

Six month forecasts from May, August and November

With Sea-Ice initialised and evolving

Without Sea-Ice initialised and evolving

Data NOT to be on the server

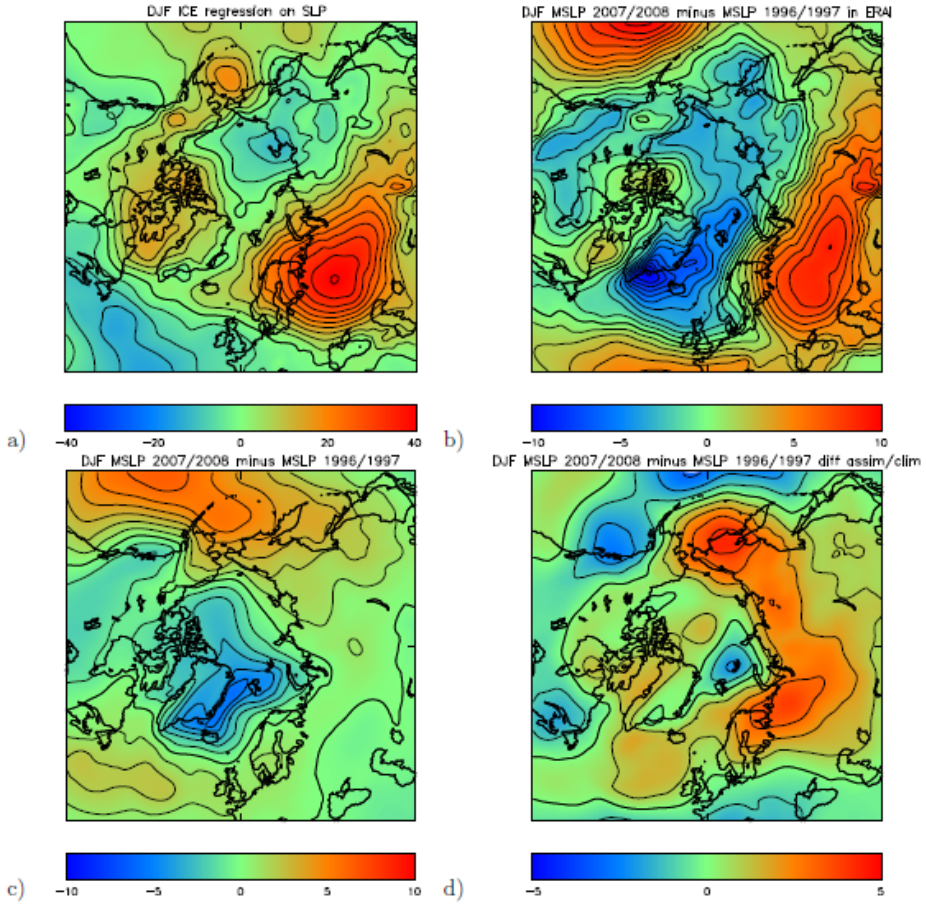


Figure 1: a) Regression of observed (NSIDC) October sea ice extent onto winter (DJF) SLP from ERA-I for the years 1996 through 2009 (winter of 1996/7 through 2009/10). The sign of the sea ice extent has been flipped, so the regression represents the SLP associated with **low** sea ice. Winter (DJF) mean SLP difference between winter 2007/8 and 1996/7 b) in ERA-I analysis, and c) GloSea4 forecast (November start date) with initialized ice. d) The contribution to c) due to the initialized ice, obtained by taking the difference between the 2007/8 minus 1996/7 difference seen in c) and subtracting a similar 2007/8 minus 1996/7 SLP difference in a run where both years have been initialized with an ice climatology. Contour intervals for solid black lines are a) 4, b/c/d) 1 hPa.

Participants and Status

Institute	Model	Status	Contact
Met Office HC	HadGEM	DONE	drew.peterson@metoffice.gov.uk
Meteo France	Arpege + OPA?	DONE	matthieu.chevallier@meteo.fr
ECMWF	IFS+NEMO	?	Linus.Magnusson@ecmwf.int
Max Planck Inst	ECHAM5 + MPIOM	DONE	dirk.notz@zmaw.de

Other groups to take part? contact drew.peterson@metoffice.gov.uk

Stratospheric extension of the CHFP

Hi Top Hindcasts

- Parallel to WGSIP-CHFP
- Extended models
- Initialising extra atmosphere, better represented stratosphere

- **Integrations**
  - 4 month lead times (1st November and 1st May start dates)
  - 2 seasons (DJF and JJA)
  - Case study years: 1989 onwards
  - At least 6 members per year, preferably more

Participants and Status

Institute	Model	Resolution	Reference	Status	Contact
Met Office HC	HadGEM	N96L85, 85km N96L38, 40km	Martin et al 2006, J. Clim., 19, 1217-1301	DONE IN SERVER	Adam.scaife@metoffice.gov.uk
Meteo France	Arpege 4.4 + OPA	L91, 0.01hPa L31, 10hPa	Gueremy et al, 2005, Tellus, 57A, p308-319	DONE IN SERVER	Michel.deque@meteo.fr jean.philippe.piedelievre@meteo.fr
ECMWF	IFS	L91, 0.01hPa L62, 5hPa			t.stockdale@ecmwf.int
CCCMA	CMAM	T63L71,~100km T63L41,~31km	Scinocca et al 2008, ACP, 8, 7055-7074	DONE IN SERVER	John.Scinocca@ac.gc.ca George.Boer@ec.gc.ca
NCEP	CFS v1	L64, 0.2hPa	Saha et al, J.Clim., vol.19, no.15, p3483-3517		Amy.Butler@noaa.gov Arun.Kumar@noaa.gov
CPTEC	CPTEC				pnobre@cptec.inpe.br
IFM-GEOMAR	ECHAM5	T63L31,10hPa T63L47,0.01hPa	Roeckner et al 2003, MPI report No. 349, 127pp Manzini et al 2006, J.		nkeenlyside@ifm-geomar.de

US National Multi-Model Ensemble Hindcasts and Real-time Prediction

Model	Period	Members	Leads	Arrangement of Members
CFSv1	1981-2009	15	0-8 months	1st 0Z +/-2days, 21st0Z+/-2d, 11th0Z+/-2d
CFSv2	1982-2009	24(28)	0-9	4 members (0,6,12,18Z) every 5th day
GFDL-CM2.2	1982-2010	10	0-11	All 1st of the month 0Z
IRI-Echam4-f	1982-2010	12	0-7	All 1st of the month
IRI-Echam4-a	1982-2010	12	0-7	All 1st of the month
CCSM3.0	1982-2010	6	0-11	All 1st of the month

http://origin.cpc.ncep.noaa.gov/products/people/wd51yf/NMME/

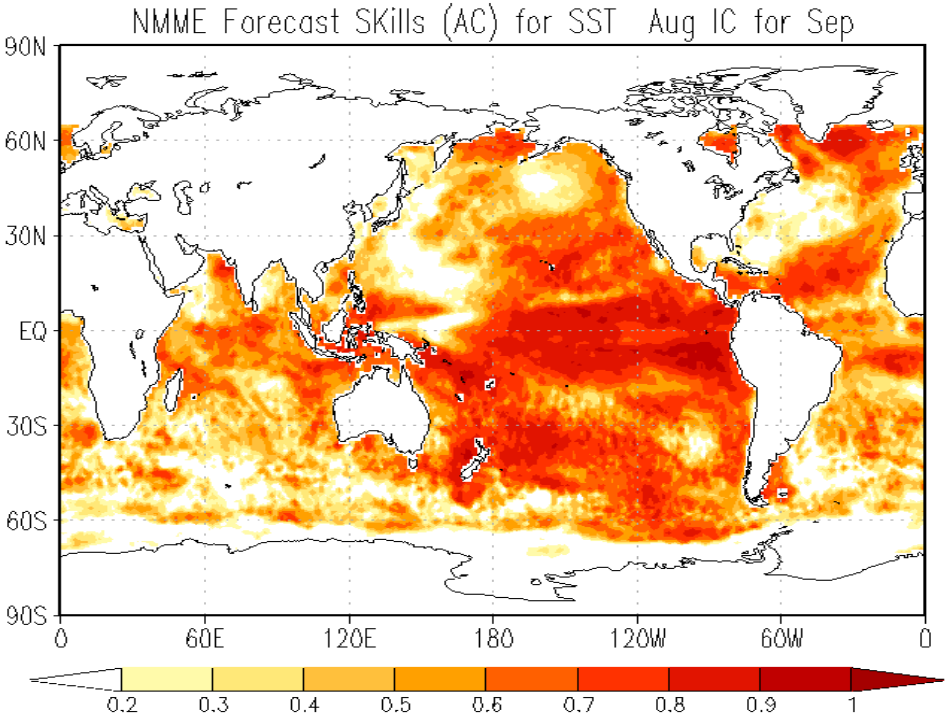
IRI to Host Hindcasts and Real-Time Forecasts (Minimal Data Set)

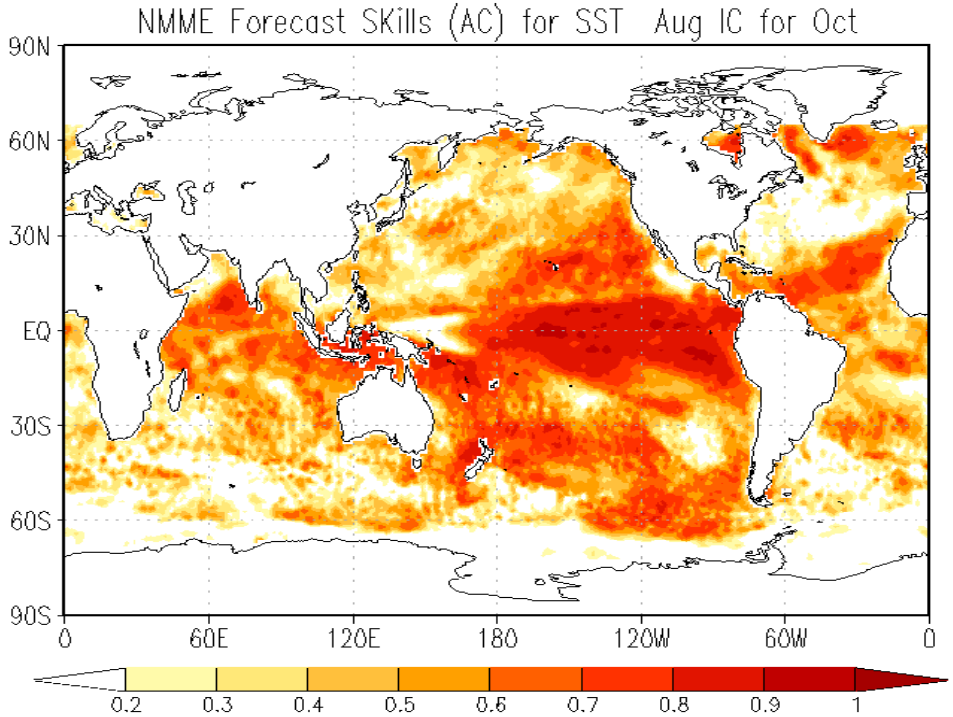
NASA to Join September 8th

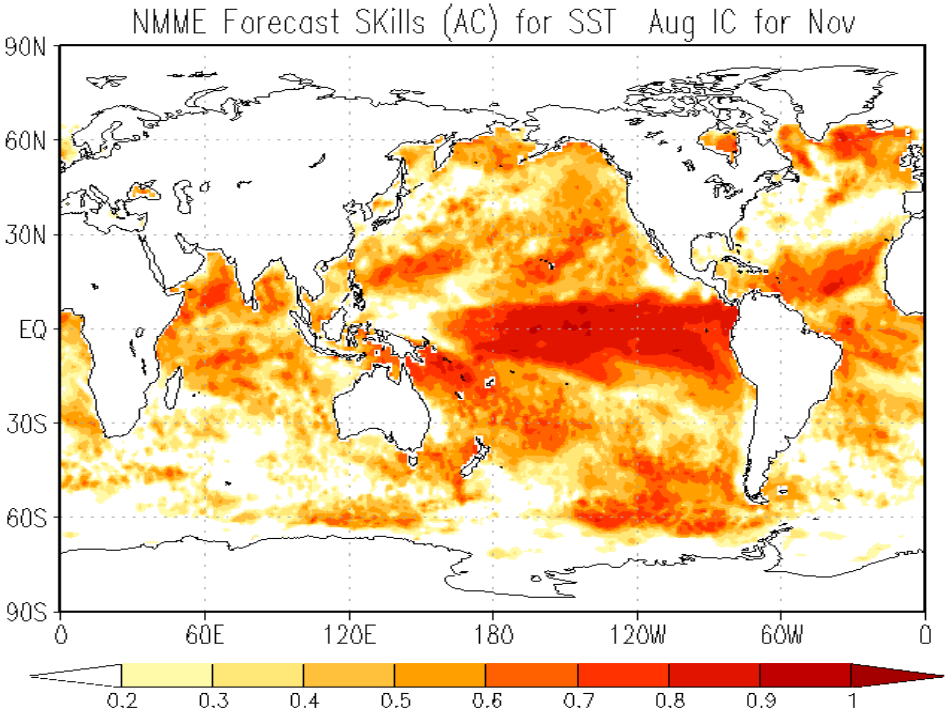
Sea Surface Temperature

Verification observation:

- SST OISST-QD
- 1982-2009

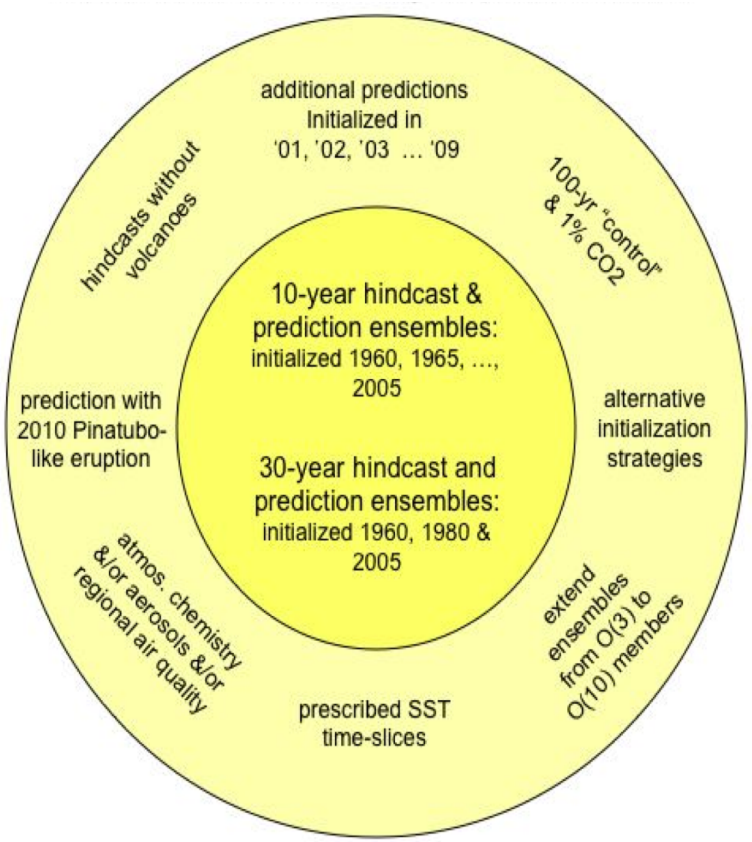






Decadal Predictions

CMIP5 Protocol



- CMIP-WGCM-WGSIP group to oversee this framework
- WGSIP is active participant in upcoming CLIVAR AIP workshop on ocean initialization for decadal predictions

Active meeting and workshop schedule

- OceanObs09 (Venice, Sept 09)
- 8th Workshop on Decadal Climate Variability (Maryland, Oct 09)
- Earth-System Initialization for Decadal Prediction (deBilt, Nov 09)
- Predicting Climate of the Coming Decades (Miami, Jan 10)
- *WGSIP-13 (Buenos Aires, July 10)*

- Conference on Decadal Predictability (Triest, Aug, 10)
- Workshop on Decadal Variability, Predictability and Predictions: understanding the role of the oceans (NCAR, Sept 10)
- WGCM-14 (Exeter, Oct 10)
- Seasonal to Multi-decadal Predictability of the Polar Climate (Bergen, Oct 10)
- IPCC 1st LA Meeting (Kunming, Nov 10)
- Making sense of the multi-model prediction experiments from CMIP5 (Aspen, June 11)
- IPCC 2nd LA Meeting (Brest, July 11)
- *WGSIP-14 (Trieste, Sept 11)*

Decadal Forecast Exchange

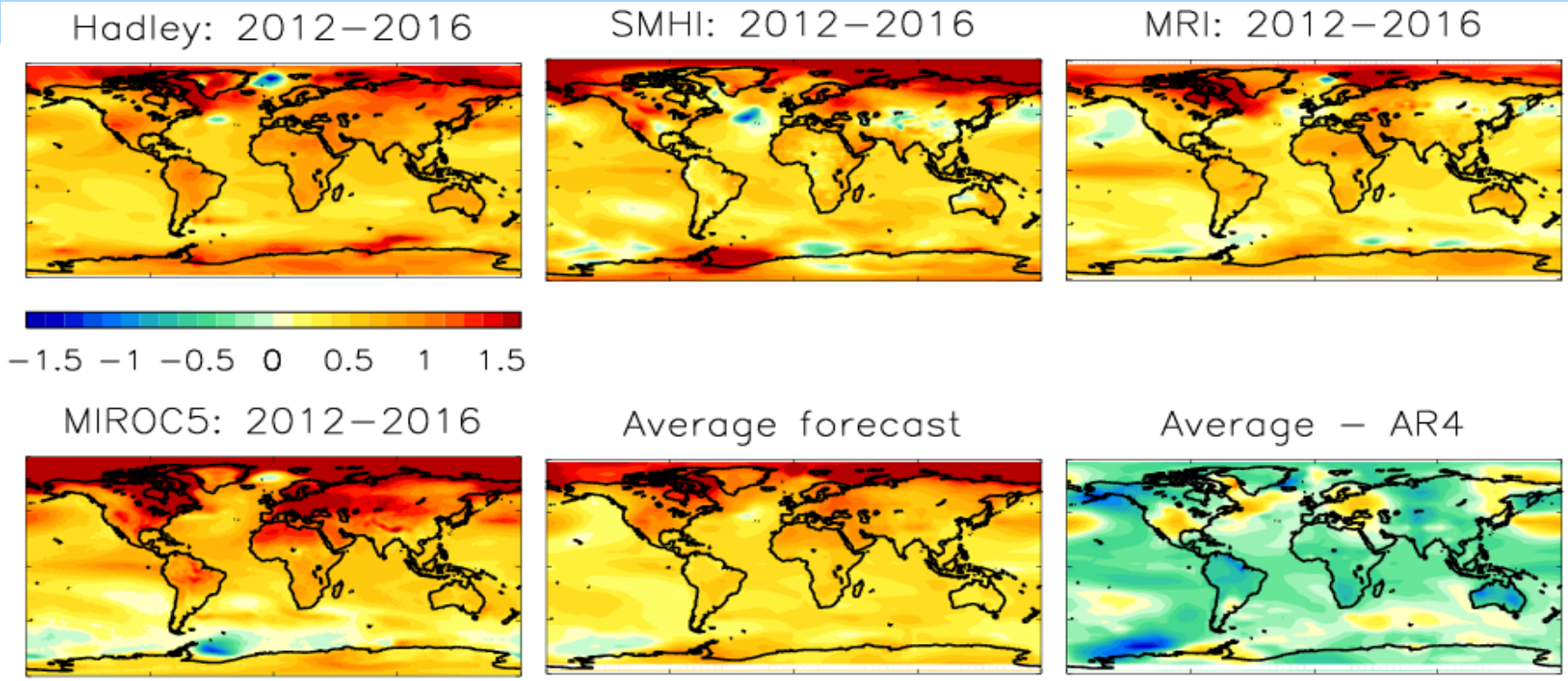
We are exchanging very basic quantities:

Global Annual Mean Temperature

One file for each year, each member

<u>Exchanged</u> once per year around November

Equal ownership



Links across WMO

THORPEX
A World Weather Research Programme

TIGGE Representation (P. Silva Dias) at WGSIP-13
Several Area of Potential Collaboration Identified

- Ocean-atmosphere coupling impact sub-seasonal forecast skill
- Role of resolution on forecast skill
- Scale interactions
- **Ensemble techniques**

WCRP
World Climate Research Programme