

Workshop on  
**Representing model uncertainty and  
error in numerical weather and climate  
prediction models**  
20-24 June 2011

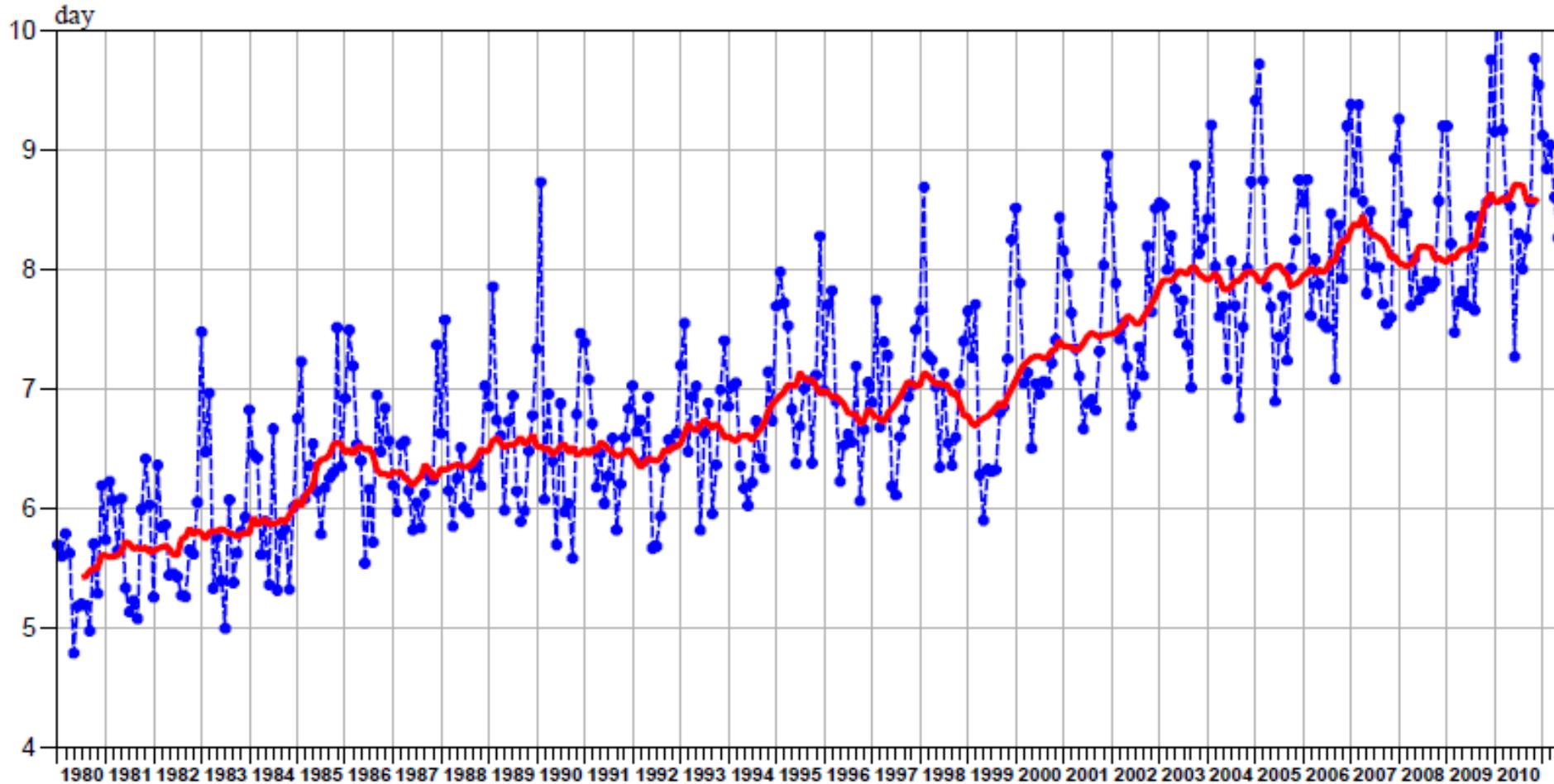
# Present medium range forecast models

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- Global forecast model
  - 16 km grid point distance
  - 91 vertical levels
  - Hydrostatic
  - Forecast range: 10 days
- Ensemble Prediction System
  - 51 parallel forecasts
  - Perturbed initial conditions and stochastic model error
  - 32 km grid point distance

# Forecast quality – Days of useful skill

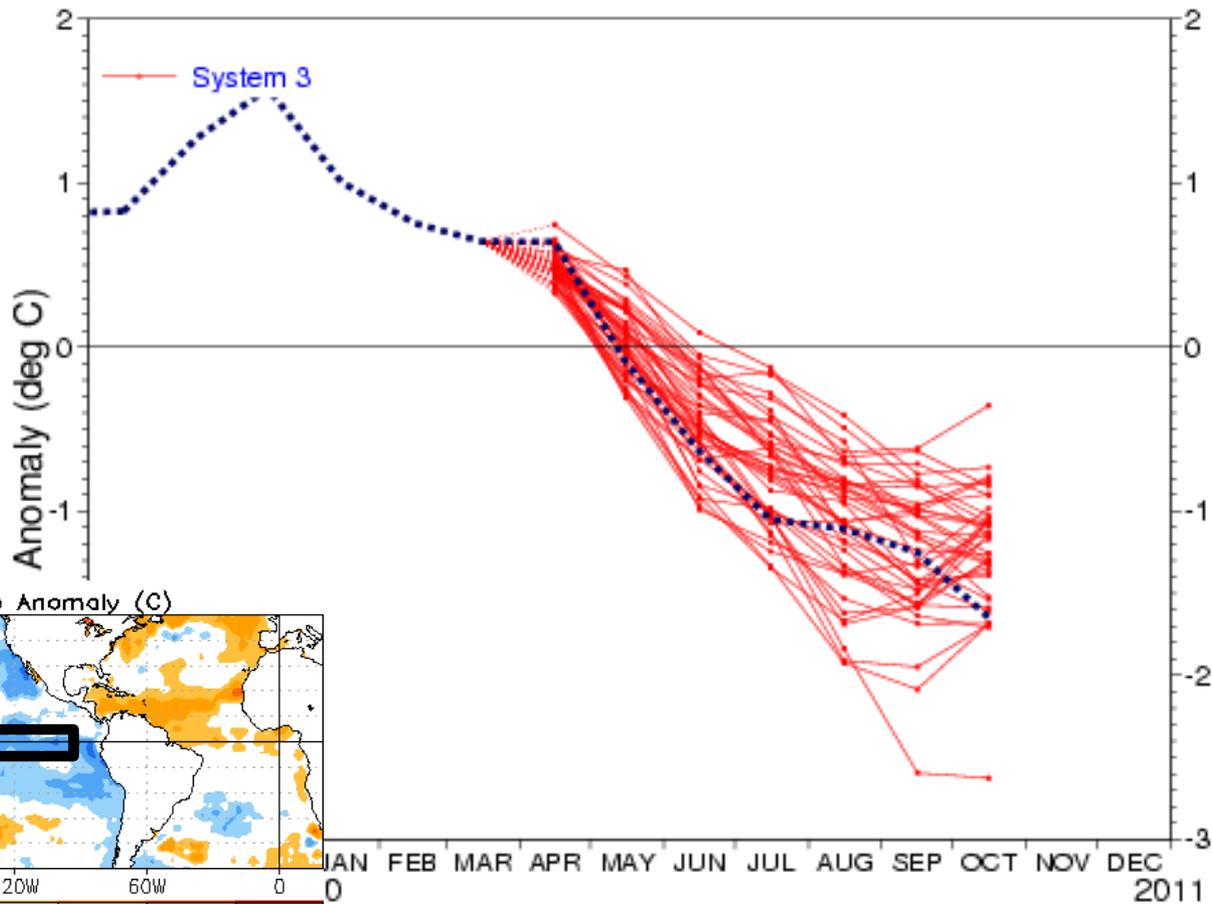
(500 hPa height, anomaly correlation > 0.6, N. Hemisphere)



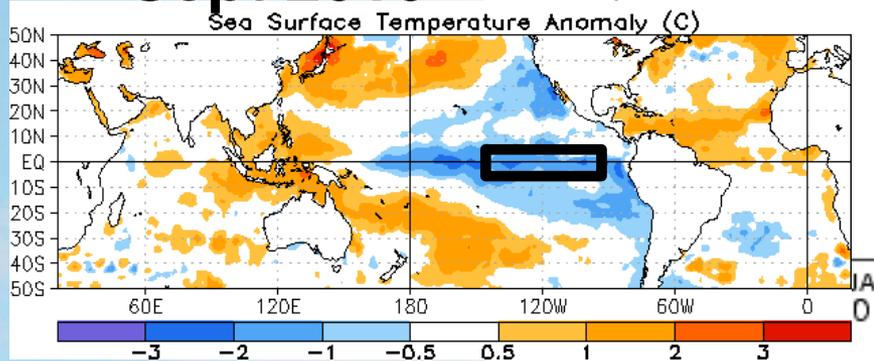
# Seasonal forecast

## NINO3 SST anomaly plume ECMWF forecast from 1 Apr 2010

Monthly mean anomalies relative to NCEP adjusted OIv2 1971-2000 climatology



### Sept 2010

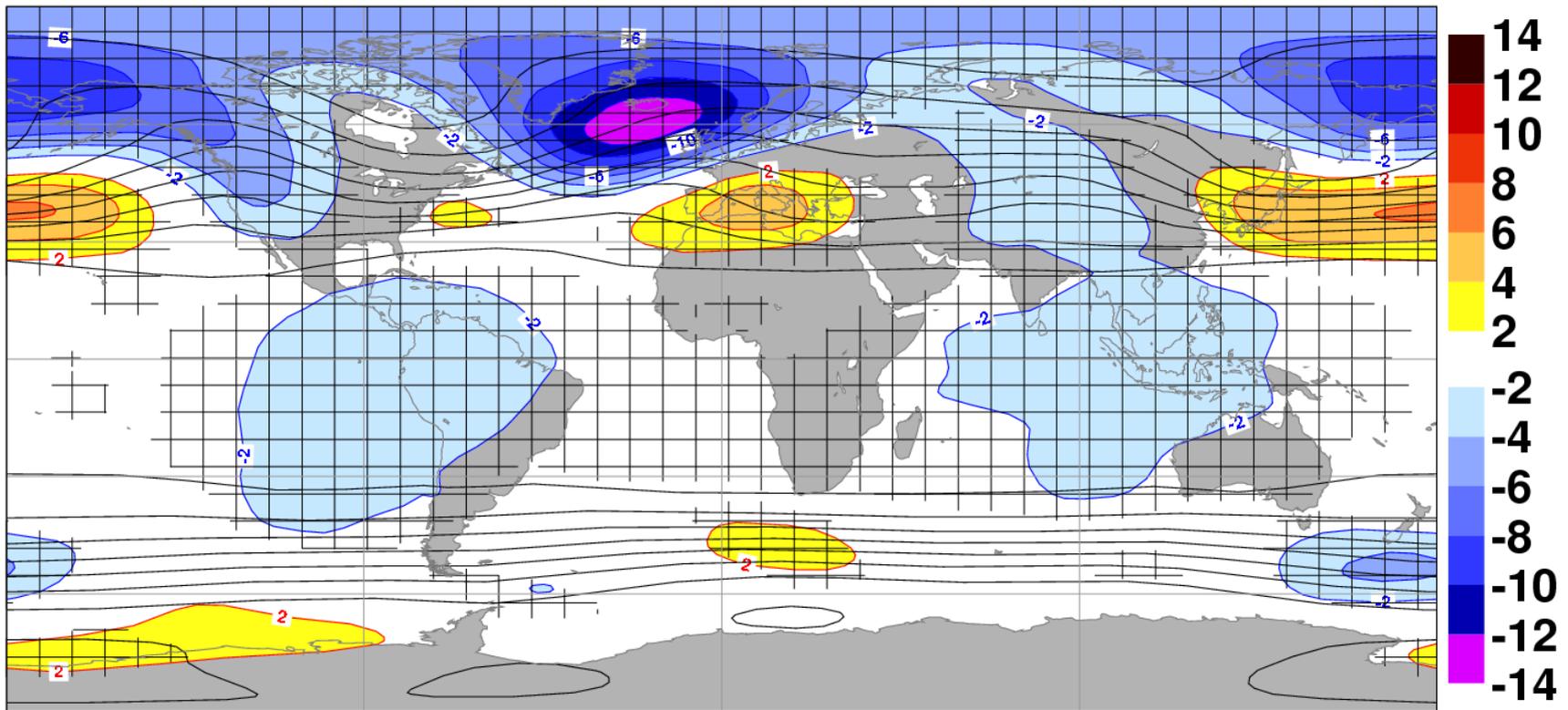


Forecast issue date: 15 Apr 2010

# Model climate error DJF

Cy 31r1 introduced September 2006

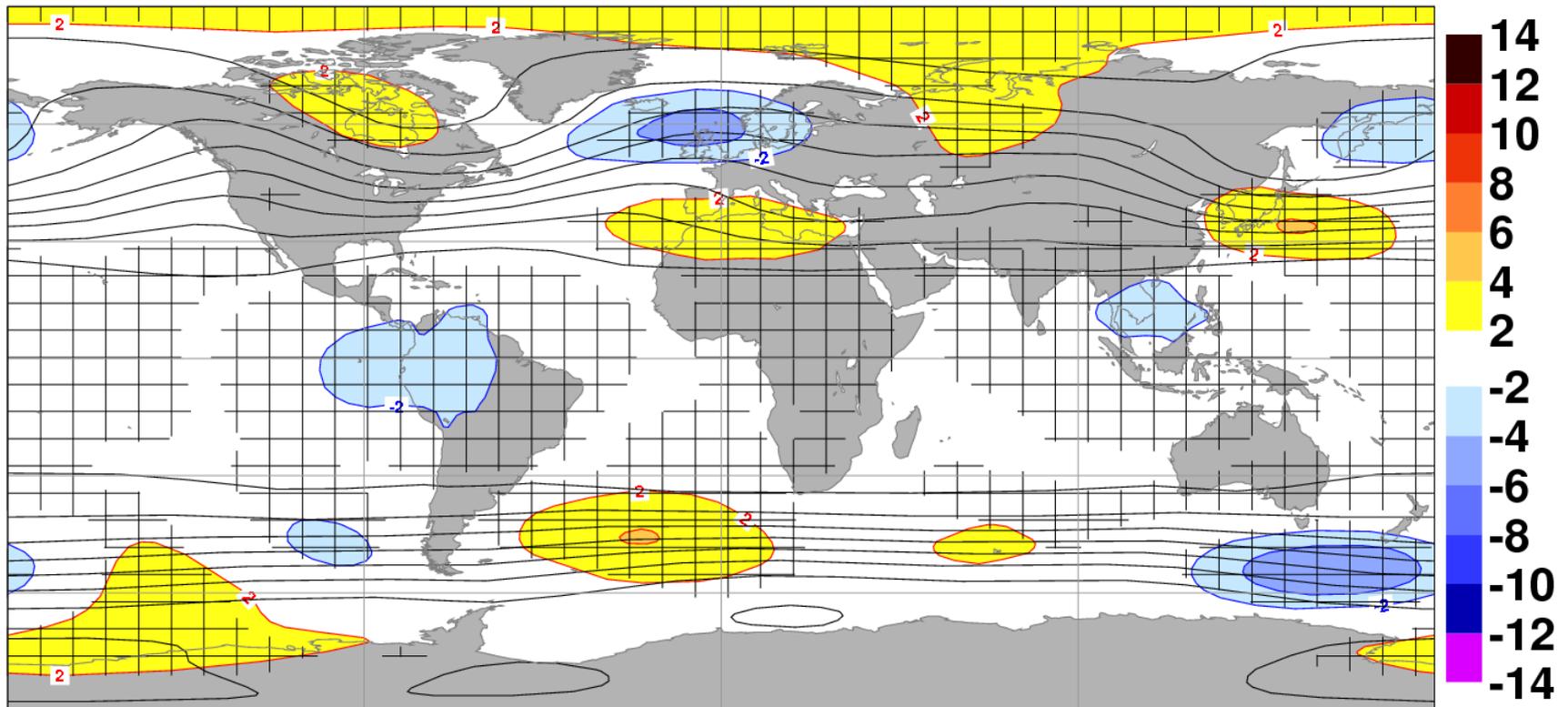
## Z500 Difference 31R1-er40 (12-2 1963-2006)



# Model climate error DJF

Cy 32r3 introduced March 2008

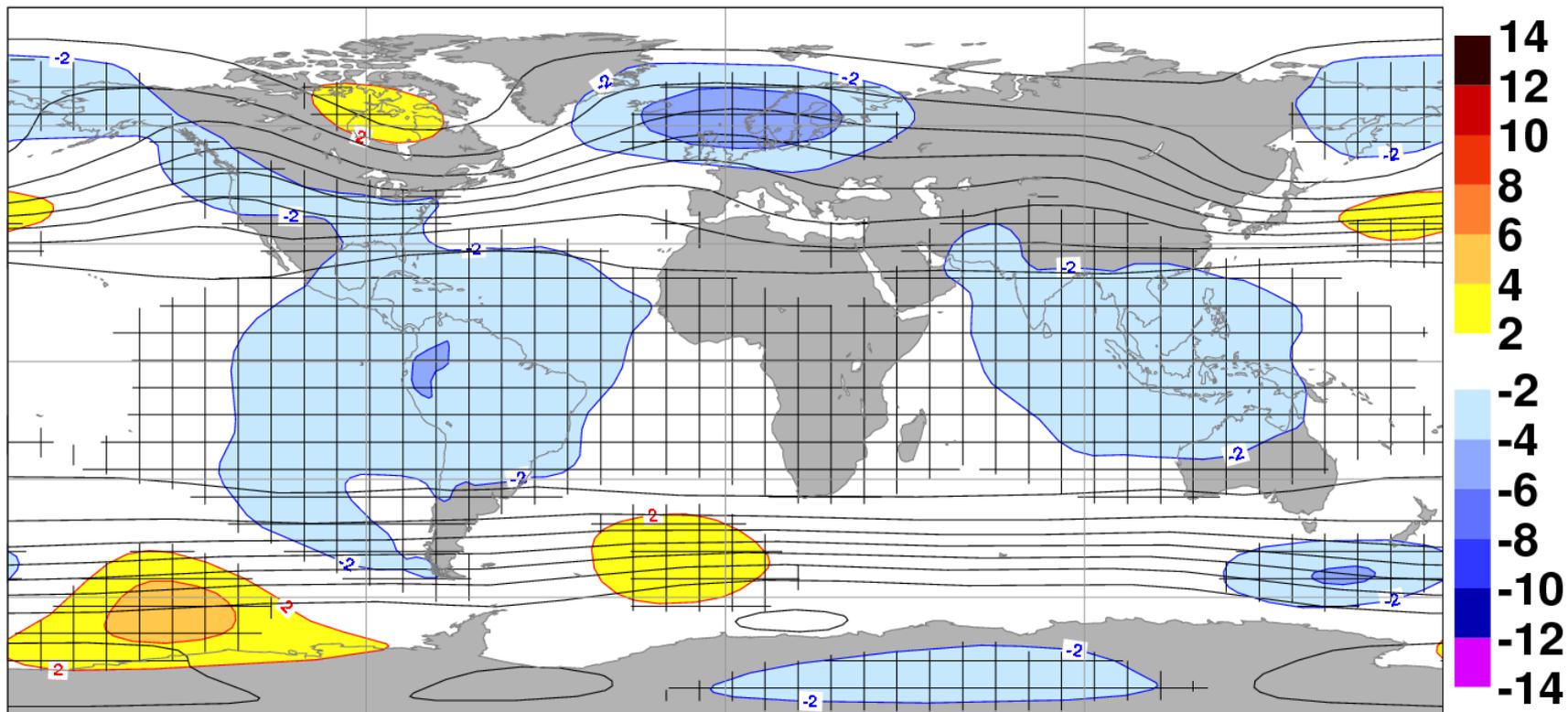
## Z500 Difference 32R3-er40 (12-2 1963-2006)



# Model climate error DJF

Cy 36r4 introduced November 2010

## Z500 Difference 36R4-er40 (12-2 1963-2006)



# Temperature and wind error

## 850 hPa D+5 fcsts March-May 2011

