Seasonal Forecasting at the South African Weather Service

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Modelling Structure

**Seasonal Forecast Modelling**

- **Global SSTs**
  - CCA forecasts

- **GCMs**
  - COLA T30 (T62)
  - ECHAM4.5
  - CCAM
  - HadAM3 (UCT)

- **RCMs**
  - RegCM3
  - RSM

- **Post-Processing**
  - MOS
  - MOS-PP
  - Multi-model ensemble
CCA Forecast Skill (Nino3.4)
GCM probability forecast: DJF 2004/05

Percentage of Normal Rainfall for the Period
December 2004 to February 2005

(based on preliminary data)

75% - 125%
January, February and March 2004
(based on preliminary data)
Combining Forecasts

Multi-Model vs Single-Model Simulation Skill of DJF Rainfall

RPSS

TRA KZC LOW NEI CIN WIN
Extreme Season Forecasting

![Graph showing RPSS for DJF and MAM seasons, with Wet and Dry categories for SWC, SCO, TRA, KZC, LOW, NEI, CIN, WIN, and NWB regions.](image)
DJF Rain vs DJF SST

Sea-surface Temps DJF mode 1

Cold  Warm

Wet

0.93  0.90  0.89  0.85  0.99  0.86

0.66  0.69

First Canonical Vector; Predictor dashed, Predictand solid

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MAM Rain vs MAM SST

Sea-surface Temps MAM mode 1

- Cold
- Warm

Wet

0.93
0.99
0.88
0.83
0.91
0.65
0.25
0.27

First Canonical Vector; Predictor: dashed, Predictand: solid