



**The Abdus Salam
International Centre for Theoretical Physics**



2148-Presentations

**Fifth ICTP Workshop on the Theory and Use of Regional Climate
Models**

31 May - 11 June, 2010

Southern Africa simulations

MDOKA M.L. and Munishi P.K.T.

Group 4

Southern Africa simulations

Marshall & Munishi

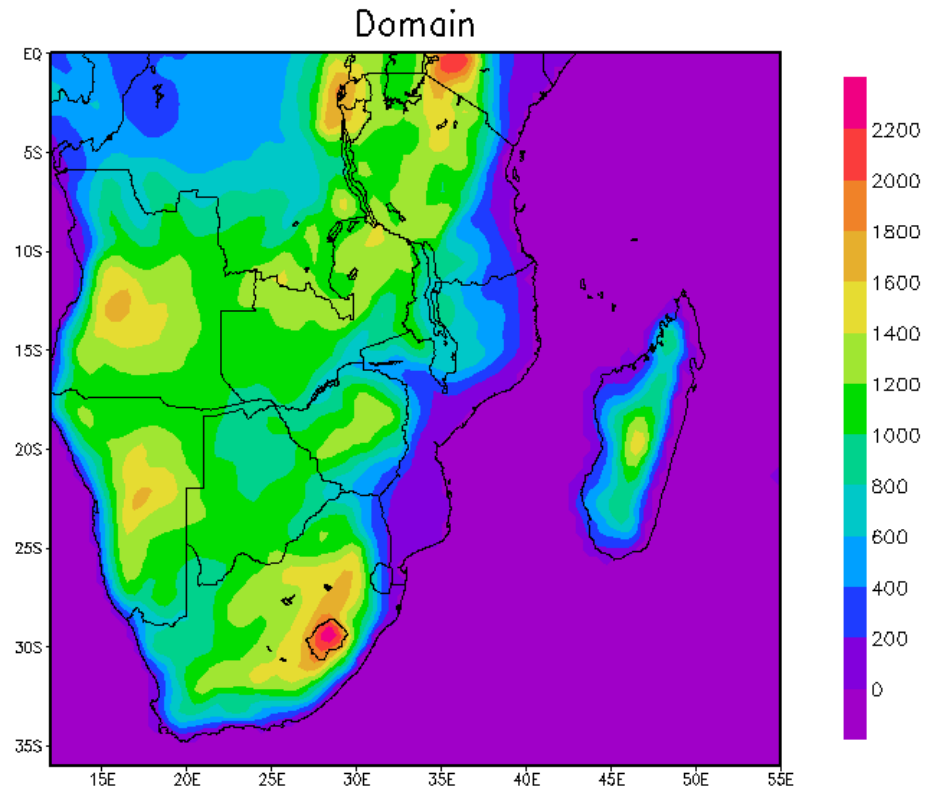
Group 4



*Sokoine University of Agriculture
Tanzania*

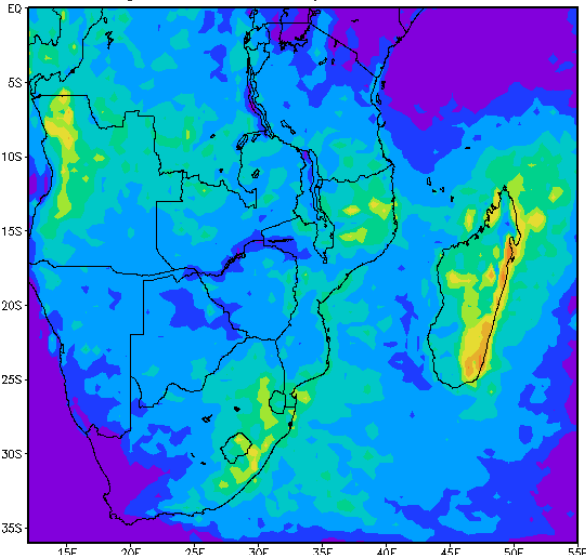
Experiments

- DJF 1991/92 and DJF 1995/96 simulations with Grell and Emanuel schemes.
- Lateral and Boundary conditions – EIN, OI_WK SST, BATS
- 50km resolution

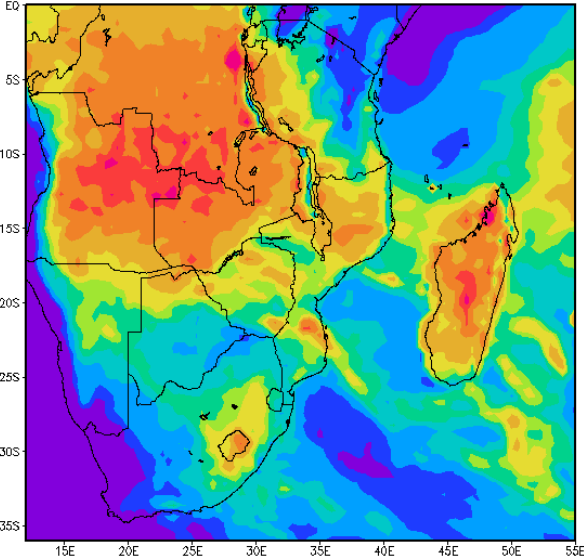


Precipitation

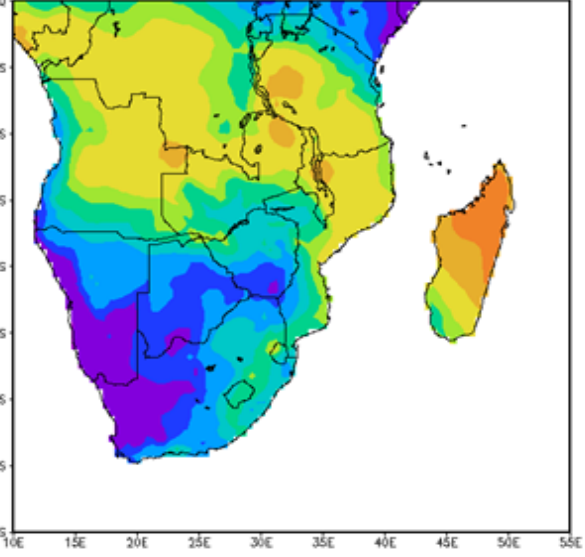
RegCM4 - Precip DJF9192 Grell



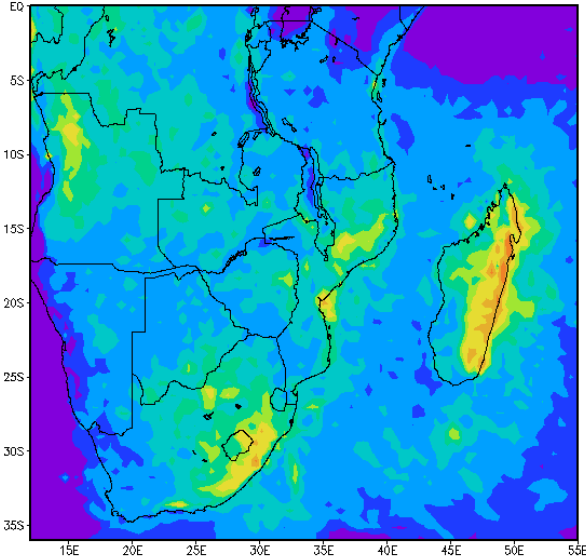
RegCM4 - Precip DJF9192 Eman



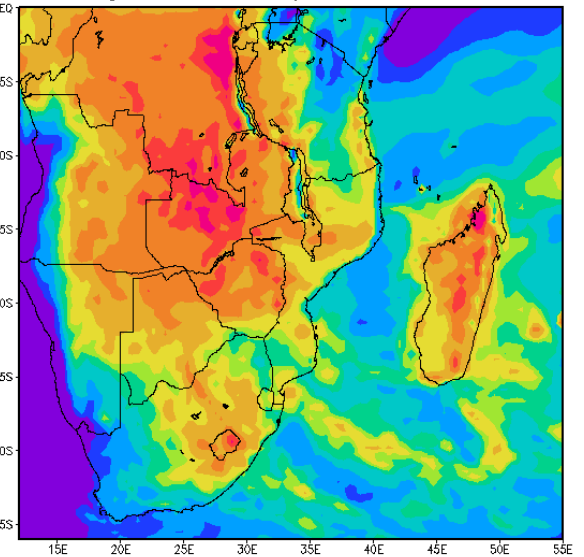
DJF9192 - CRU



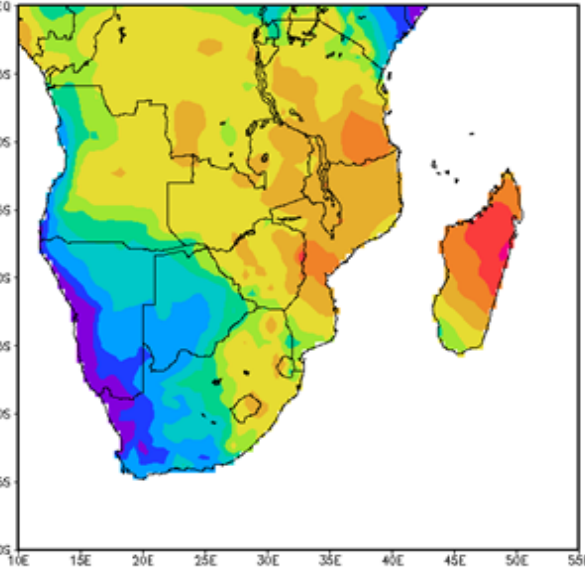
RegCM4 - Precip DJF9596 Grell



RegCM4 - Precip DJF9596 Eman

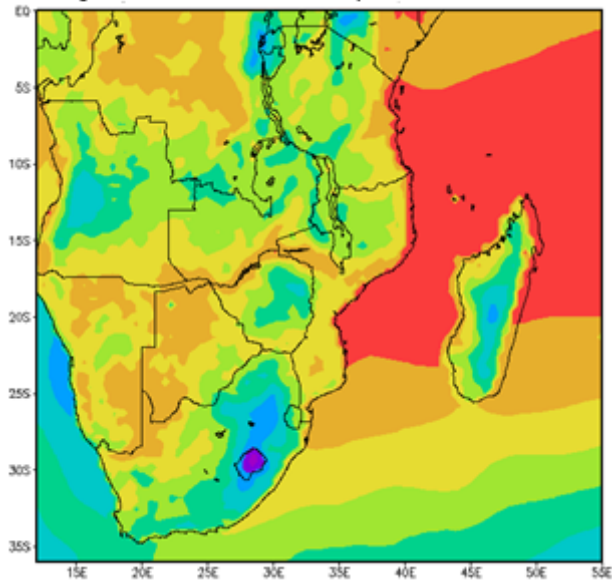


DJF9596 - CRU

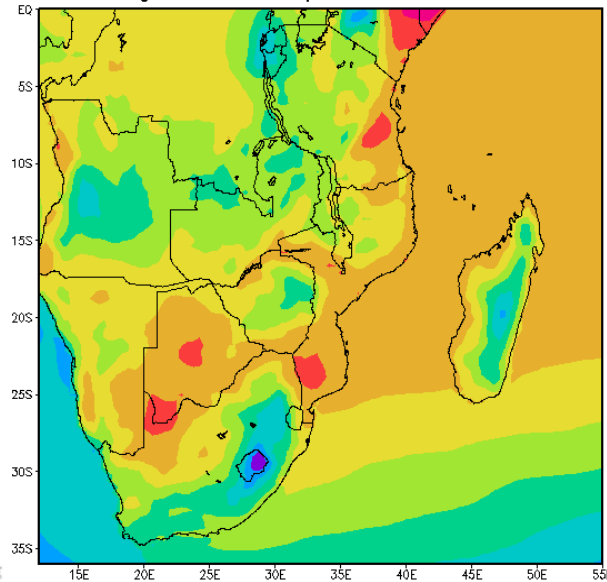


Temperature

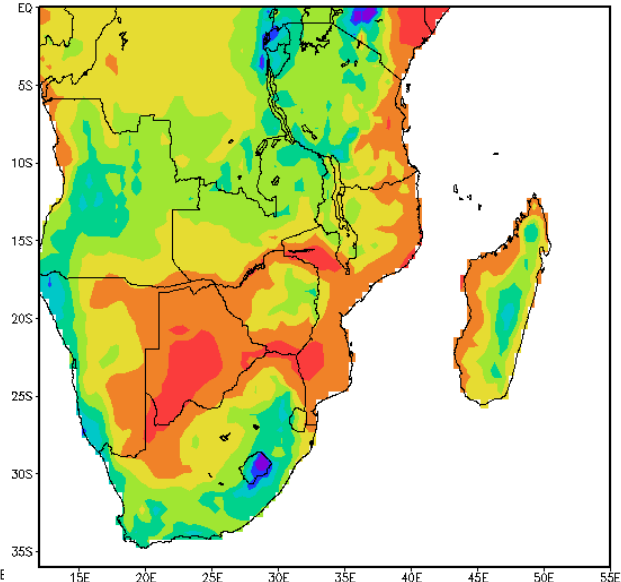
RegCM4 – Surface Temp DJF9192 Grell



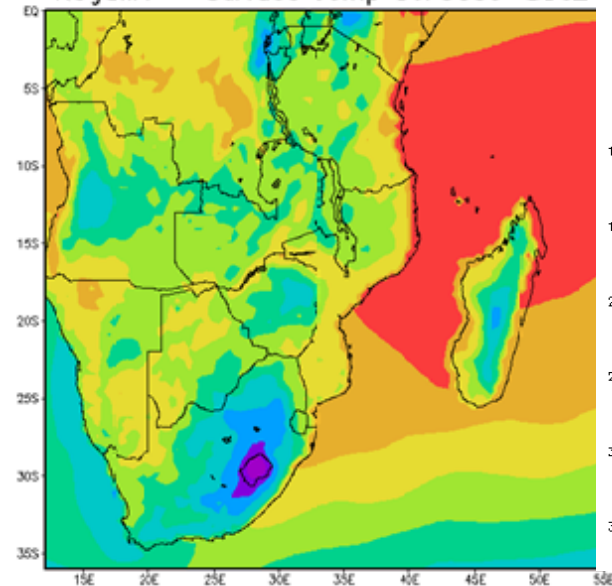
RegCM4 – Temp. DJF9192 Eman



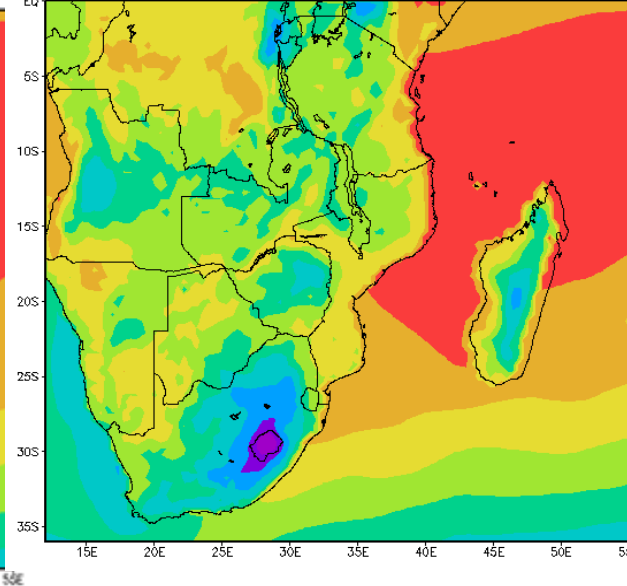
CRU – Air Temp DJF9192



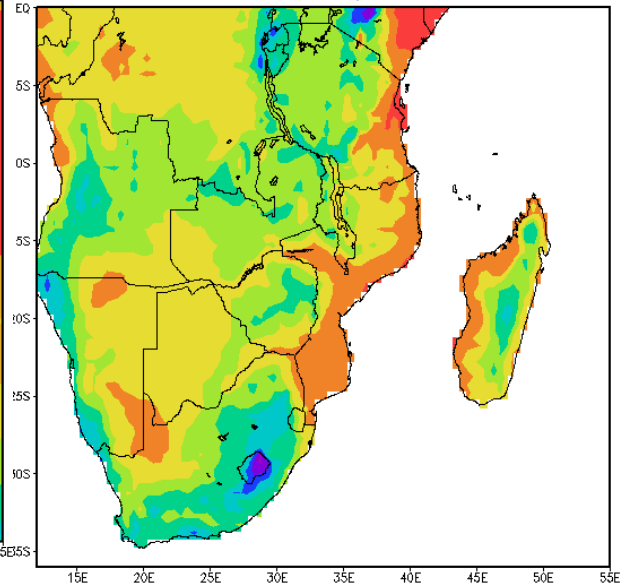
RegCM4 – Surface Temp DJF9596 Grell



RegCM4 – Surface Temp DJF9596



CRU – Air Temp DJF9596



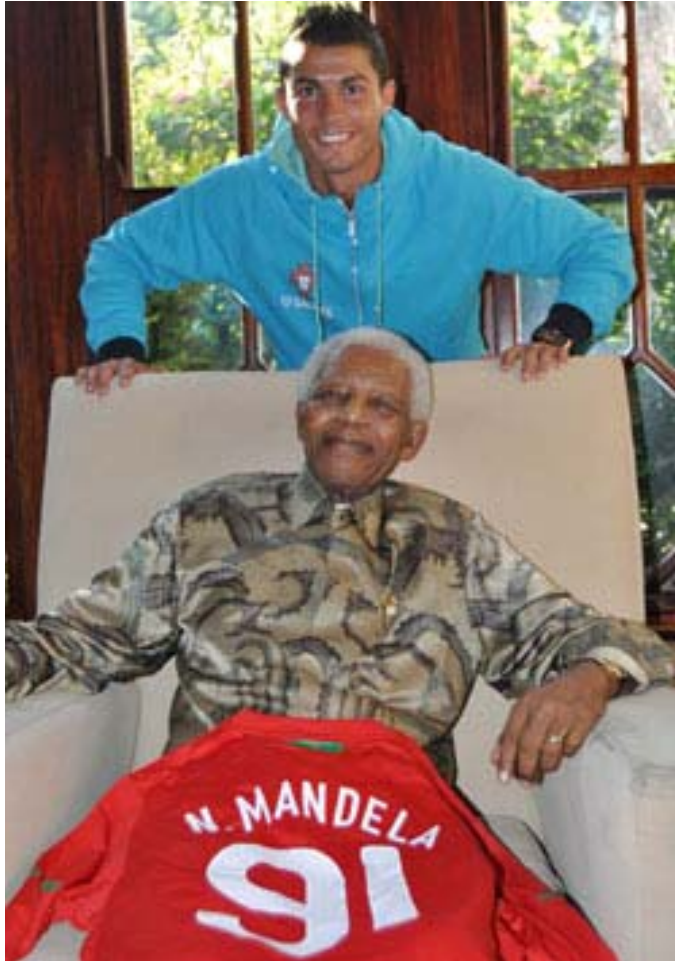
Preliminary Results

- Grell scheme does well with temperature but tends to underestimate precipitation especially in the sub-tropics.
- Eman scheme does well with temperature but tends to overestimate precipitation although it captures the spatial distribution.

Problems

- Failed to complete some CLM simulations during the “Fabian’s aerosol-bug era” - always hanging after first month simulation.
- No response to soil perturbation change in code as final simulation similar to control.
- Post-processing – some of the quick ones like rcm2netcdf have so many missing variables if trying to view with Grads, Bi’s process is what I will adopt.

Grazie



ENJOY WORLD CUP SOCCER 2010!