Influence of lateral boundary forcing on regional model simulations of mean and extreme climates over Southern Africa

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Regional climate model simulations over Southern Africa

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Outline

I/ Introduction

II/ Model and simulations design

III/ Results

- Precip, temp, low-level winds …
- Synoptic variables
- Surface radiation
- Extremes

IV/ Conclusion and perspectives
I/ Introduction

- Land features

- Namib and Kalahari Deserts
- Great Rift Valley
- Lake Victoria
- Congo River Basin
- Uplands everywhere
- Elevation boundary
- Escarpment
Rational for SOCOCA

CORDEX (Giorgi et al. 2009)

- Global climate
- Regional climate
- Hydrology
- Agriculture
- Economy
II/ Model description and simulations

- RegCM3: Limited area model (Pal et al. 2007)
  - Grell convection scheme
  - Fritch and Chapel closure

- 2 Simulations: 10 years
  - NCEP
  - ERA-Interim

Boundary forcings: Basic comparisons
III/ Results

- Precip, temp, low-level winds ...
- Surface radiation
- Synoptic variables
- Extremes
Precip
Wind magnitudes and vectors
Relative Humidity
 Mean Temperature
Maximum daily Temperature
Minimum daily Temperature
III/ Results

- Precip, temp, low-level winds …
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- Surface radiation
- Extremes
Mean sea level pressure
Mean geopotential height
III/ Results

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Annual mean surface shortwave Radiation
● Annual mean surface Longwave Radiation
III/ Results

- Precip, temp, low-level winds …
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Conclusion: to be completed

- Mean intraseasonal and interannual variability
- More analysis in synoptic features
- ……

Thanks for your Attention