CORDEX: A Coordinated Regional Downscaling Experiment

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Details at:
http://wcrp-cordex.ipsl.jussieu.fr/
(Search: “WCRP CORDEX climate”)
### CORDEX Science Advisory Team

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General Aims and Plans for CORDEX

Provide a set of *regional climate scenarios* covering the period 1950-2100, for the majority of the populated land-regions of the globe.

Make these *data sets readily available and useable* to the impact and adaptation communities.

Provide a *generalized framework for testing and applying* regional climate models and downscaling techniques for both the recent past and future scenarios.

Foster coordination between regional downscaling efforts around the world and *encourage participation* in the downscaling process of local scientists/organizations.
CORDEX Phase I experiment design

Model Evaluation Framework

Climate Projection Framework

Multiple regions (Initial focus on Africa)
50 km grid spacing

ERA-Interim BC
1989-2007

RCP4.5, RCP8.5

Multiple AOGCMs

Regional Analysis
Regional Databanks

1951-2100
1981-2010, 2041-2070, 2011-2040
Coordinated Regional Downscaling Experiment (CORDEX) ~ Regions ~
ERA-Interim Africa CORDEX multi-RCM matrix

Precipitation (pr) | JAS | 1998-2008

- GPCP11
- TRMM-3B42
- UDEL201
- GPCC5
- ERA-INTERIM
- ENSEM. MEAN (RCMs)
- SMHI-RCA35
- DMI-HIRHAM5
- CLMcom-CCLM48
- MPI-REMO
- KNMI-RACMO22
- CNRM-ARPEGE51
- ICTP-RegCM3
- UCT-PRECIS
- UC-WRF31
- UQAM-CRCM5

(C. Jones, 2012)
South America

7 RCMs using ERA-Interim boundary conditions (1990-2008)

Temperature Bias (°C)

Precipitation Bias (mm/month)

Ensemble vs. (CRU & UDEL)

Ensemble vs. (GPCC, CRU, UDEL & CPC)

(Solman et al., 2012 - submitted)
Other Regions

1. Euro-CORDEX
   - Runs at 0.44° and 0.11° in progress

2. CORDEX South Asia
   - Workshop Feb 2012

3. CORDEX Arctic
   - Workshop March 2012

4. Med-CORDEX built off funded program
What’s Been Done for North America?

1. UQAM (René Laprise) – 0.5°
   1989 – 2008: ERA-Interim
   1950 – 2100: CanESM & MPI GCMs
   Test runs at 0.11°

2. Météo-France (Philippe Lucas-Picher) – 0.5°
   1989 – 2008: ERA-Interim
   M-Fr may do GCM-driven case(s)

3. Related activities at UK Met Office, Argonne and Univ. AZ
CORDEX North America Program?

Executive Committee: Mearns, Gutowski (chairs) Behar, Buja, Garfin, Leung, Lettenmaier

Science Committee: Mearns, Gutowski, Hall, Anderson, Leung ...

Applications Committee: Behar, Kaatz, …

Services Committee: Barsugli, Ammann
Goals Today

1. Develop a proposal framework
   - Simulation plan
   - Archive and access plan
   - Analysis plan
   - Coordination with existing efforts

2. Target funding opportunities
   - Specific agencies/programs
   - Private sector opportunities?
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