Validation of Different NARCCAP-RCMs in the Southern Part of the Domain

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• Datasets
  NARCCAP (phase I) and CRU (obs)

• Results: **Srf Temp & Precip** (DJF & JAS)
  – Bias (%)
  – Climatology Correlation
  – Temporal Correlation (Yr to Yr)
  – RCMs Trends
  – Bias Trend

• Final Comments
CLIMATOLOGY
1980-1989
Precipitation (mm/d)

Observations
GPCP, Global Precipitation Climate Project

Models
16 IPCC Model Avg
What downscaling should do?

Downscaling

Not exactly right any more ...
Surface Temperature Bias (%), JAS, NCEP-RCM vs CRU, 1981-2000
Climatology correlation vs CRU

1981-2000
TS Temporal Correlation (Yr to Yr)

NCEP-RCM vs CRU
Trends NCEP-RCM

DJF, 1981-2000

C/decade
Trend NCEP-RCM

JAS, 1981-2000

C/decade
Bias = \( \frac{(\text{TrendMod} - \text{TrendCRU})}{\text{TrendCRU}} \)

DJF, 1981-2000
Bias = \frac{(\text{TrendMod} - \text{TrendCRU})}{\text{TrendCRU}}

JAS, 1981-2000
Precipitation Bias (%), DJF, NCEP-RCM vs CRU, 1981-2000
Precipitation Bias (%), JAS, NCEP-RCM vs CRU, 1981-2000
Climatology correlation vs CRU

1981-2000
Precip Temporal Correlation (Yr to Yr)

NCEP-RCM vs CRU
Trends NCEP-RCM

DJF, 1981-2000

Tendencia de Precipitacion (mm/dia/decada)
Trend NCEP-RCM

JAS, 1981-2000

Tendencia de Precipitación (mm/día/decada)
Bias = \frac{(\text{TrendMod} - \text{TrendCRU})}{\text{TrendCRU}} \times 100

DJF, 1981-2000
Bias = \frac{(\text{TrendMod} - \text{TrendCRU})}{\text{TrendCRU}} \times 100

JAS, 1981-2000
As expected, similarities among surface temperature are larger than those for precipitation.

In the whole run, similarities overpass discrepancies among the different RCMs.

However, in some cases there are clearly important differences among RCMs that need to be taken into account in some way...

Particularly, I am more on to looking for a weighted ensemble average when you try to get a final number (with uncertainty included of course) to be given to the end user.