Project on ENSO and Monsoons in Climate Models

V. Krishnamurthy[1] and Ioana Colfescu[2]

[1]Center for Ocean-Land-Atmosphere Studies
Institute of Global Environment and Society, Calverton, MD, USA

[2]Department of Atmospheric, Oceanic and Earth Sciences
George Mason University, Fairfax, VA, USA

Targeted Training Activity
El Niño-Southern Oscillation and Monsoon in the Current and Future Climate
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Objectives

Evaluate the performance of CMIP5 models

ENSO and Regional Monsoons

- Mean
- Interannual variability
- Long-term variability (trends)

ENSO-monsoon relation

- Interannual variability
- Long-term variability (trends)

CMIP5 Simulations

WCRP Coupled Model Intercomparison Project – Phase 5 (CMIP5)

Pre-industrial Control run

Historical run

Future projection (RCP8.5)

Observations

ENSO

Evaluate the performance of CMIP5 models in simulating ENSO

Tropical Pacific

Mean: SST, precipitation and surface winds
Standard deviation: SST, precipitation and surface winds
Interannual variability of suitable indices of SST and precipitation
Composites of SST, precipitation and surface winds based ENSO indices

Trends in the historical run
Difference between historical run and PI-control run
What does the future projection run indicate?

Regional Monsoons

Evaluate the performance of CMIP5 models in simulating the regional monsoons

Regional monsoon of your interest

Mean: Precipitation and surface winds
Standard deviation: Precipitation and surface winds
Interannual variability of suitable indices of precipitation
Composites of precipitation and surface winds based a suitable monsoon index

Trends in the historical run
Difference between historical run and PI-control run
What does the future projection run indicate?

ENSO-Monsoon Relation

Correlation

Point correlation between monsoon index and Pacific SST field
Lagged correlation between monsoon index and ENSO index

Composites

Composites of precipitation and surface winds based on ENSO index
Composites of Pacific SST based on monsoon index