

# Session B6: Observations, Data and GCMs

Raps: Mark Doherty & Duane Waliser

## **Satellite Generation of High Quality Climate Records (2 Talks : ESA, EUMETSAT)**

- Robust and traceable methods to achieve climate quality data from varied satellite Earth obs.
- Important to adhere to climate model output data standards (e.g. CF-compliant) and include uncertainty estimates for maximum use
- Capabilities are growing for the challenging job of inter-calibration across platforms increasing number of obs utilized and the resulting climate record fidelity.
- Modeling teams – both climate and weather/data assim - are developing methodologies to better take advantage of these data.
- Satellite Earth Obs are starting to develop long term, climate-quality and in some cases decadal records through coordinated/international activities, but further efforts are need to sustain these activities into the future.

## **Sub-selecting CMIPs GCMs for downscaling (2 Talks)**

- Objective: how to strategically select (CMIP) GCMs for downscaling. An additional area requiring climate model metrics for evaluation.
- Two methods were discussed. One based on a strategic decision framework for model elimination, and another based on taking into account observational uncertainty but focused specifically on the driving fields from the GCMs (e.g.  $T(z)$ ,  $U(z)$ ).

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## High resolution re-analysis

- A successful effort at for utilizing obs for a regional reanalysis system – essential for (regional) climate monitoring and capturing observed variability extreme characteristics, including very high resolution, e.g. 2km over central Europe.
- The cooperative model between university and met service (e.g. in Germany) may be a useful pathway for regional model development/improvement, and that reanalysis work needs sustained funding commitments (i.e. > 3 years).

## Approach for implementing land-use changes in RCMs by using observations

- Value of utilizing albedo obs in regional climate modeling, climate sensitive to small (e.g. +/-5%) changes.
- Proposes a method to characterize land-use shifts with albedo derived from observations to account for the sensitivity of the RCMs to albedo. Assertion: extensible to all observable vegetation parameters in every climate model.