Transferability Studies
Evaluating and Improving Simulated Precipitation during CEOP

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Motivation:

- Parameterization assumptions used for a particular regional model may provide good results for one region but poor results for other regions with contrasting climatic regimes.

- This sensitivity may become especially important for regional climate change scenarios.

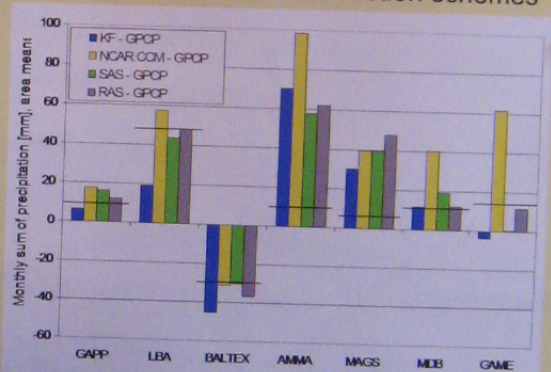- Transferability Studies may eventually become an increasingly important evaluation method.

Model domains:
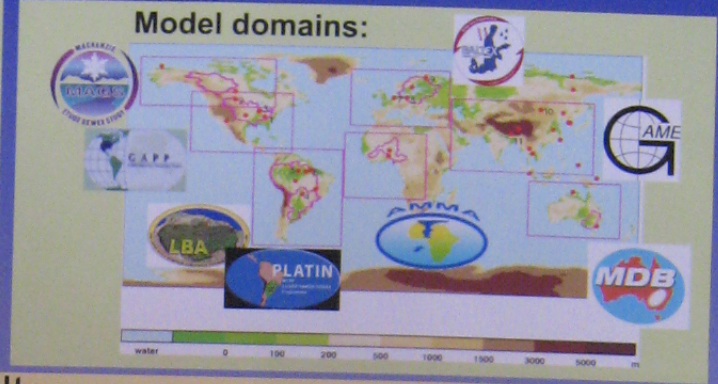
RSM precipitation evaluation results

Monthly precipitation sum, left: RSM, right: GPCP
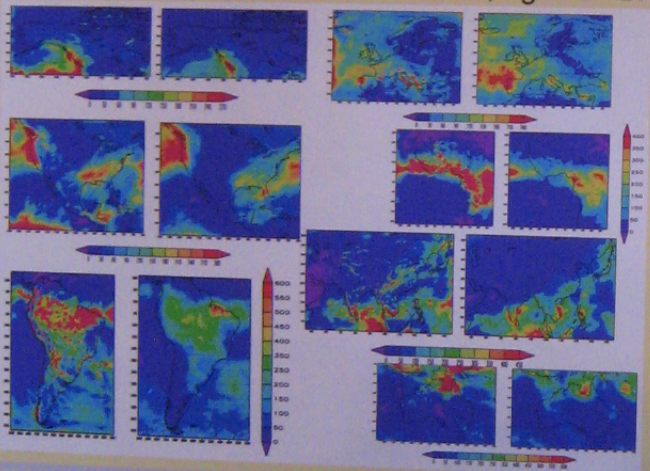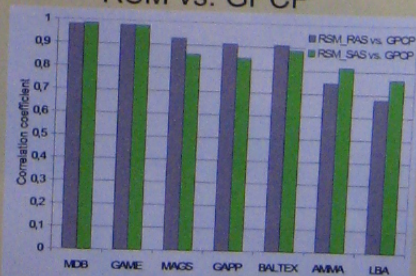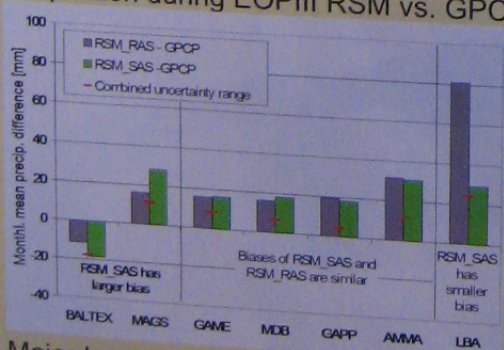

Sensitivity studies

Precipitation differences between RSM and GPCP area means using four different convection schemes
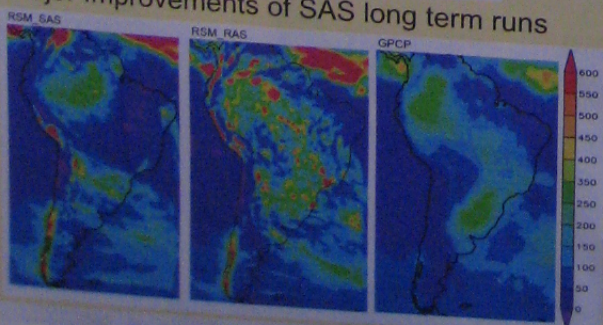

Comparison of the two long term runs: RSM_RAS and RSM_SAS

Precipitation during EOPIII RSM vs. GPCP

- RSM_SAS has larger bias
- Biases of RSM_SAS and RSM_RAS are similar
- RSM_SAS has smaller bias

Correlation coeficient precip. Annual cycle RSM vs. GPCP

Major Improvements of SAS long term runs

Results:

- Positive biases were found over most domains, except for BALTEX.
- Sensitivity tests with 4 different convection schemes imply that RSM with the SAS convection scheme causes the smallest accumulated bias.
- Second set of RSM long term runs with the SAS scheme was carried out.
- Major improvements were identified for the LBA domain.
- The annual cycle of precipitation over AMMA and LBA is improved.