CEOP Model Phase 1 Summary

Ongoing Projects with Phase 1 data

- Many MOLTS comparisons with in-house developments (JMA, UKMO, GMAO, NCEP others)
- Cloud study (Martin Koelher ECMWF, Rachel Pinker, U MD)
- Surface Heterogeneity study (Houser CREW, Peters Lidard / Bosilovich GSFC)
- Wavelet analysis of the surface meteorology (Rikus BMRC)
- Analysis system intercomparisons (Bosilovich)

Discussion I

- Milestones / Results remaining for Phase 1
  - Data set documentation for external users and review current online documentation
  - Promote analysis and forecast intercomparisons to the telecons for group input, facilitate international collaborations e.g. More science in the telecons
  - Should this group interface with the community on standards etc
  - Better Community coordination? E.g regional climate modeling - To avoid duplications of effort (through RHPs?)
  - Flexibility is needed to add new MOLTS locations in model data output

Group Management

- Better tracking of model group projects – conveying better what science we are doing
- Putting to rest a format specification for CEOP model data sets
  - Standards have evolved, need to be maintained/fixed
  - May still be some variations between NWPC and Regional Climate modeling projects
- Would need more data (Stations and Models) on WTF for online MOLTS comparisons

Discussion ii

- Objectives for New CEOP Activities
  - Encourage models and ref sites in developing the data for Carbon cycle studies. Perhaps Coordinated Energy, Water and Carbon Observation Project
  - Arctic and Antarctic assessments, recognizing IPY and interacting with CLiC
    - Polar sites needed for global model/analysis validation
  - Begin discussion on Single Column modeling for evaluating physics at reference sites
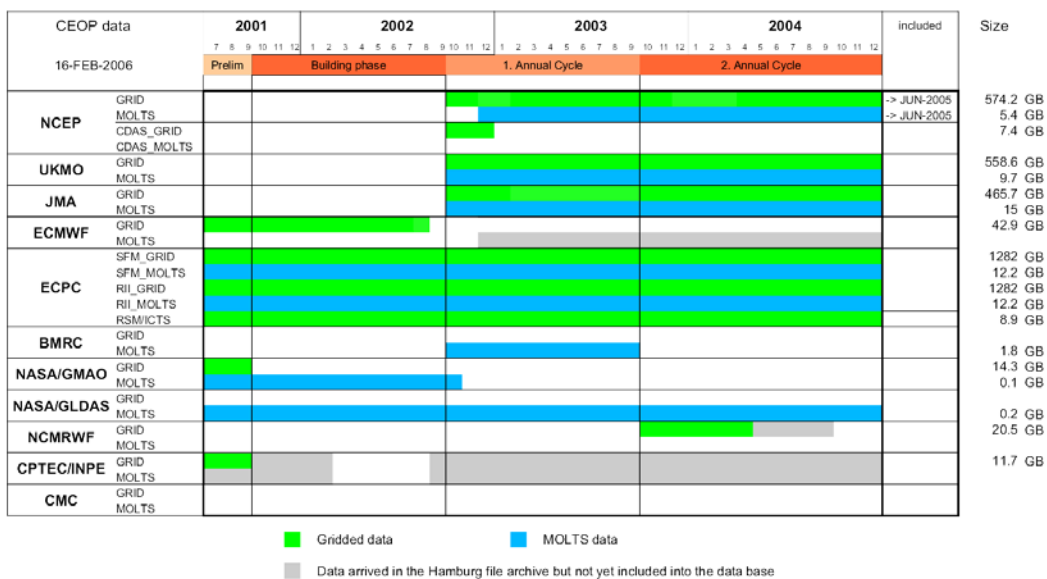 - More detailed evaluation of model parameterizations

Discussion iii

- Milestones for next 2-3 years and Implementation

Discussion iv

- Connections / Joint Activities in GEWEX (GMPP, GRP) or WCRP Core projects
  - Better connections in CEOP – e.g. crosscuts
  - Single column / parameterization studies could be developed in conjunction with GMPP
  - Connect with GRP on global observations and intercomparisons (Cloud, Radiation and water cycle)
  - Connections with Landflux and Seaflux projects?
  - BSRN could provide some needed radiation data

MPI: Model and Data

CEOP data		2001	2002	2003	2004	included	Size
16-FEB-2006		Prelim	Building phase	1. Annual Cycle	2. Annual Cycle		
NCEP	GRID					-> JUN-2005	574.2 GB
	MOLTS					-> JUN-2005	5.4 GB
	CDAS_GRID						7.4 GB
	CDAS_MOLTS						
UKMO	GRID						558.6 GB
	MOLTS						9.7 GB
JMA	GRID						465.7 GB
	MOLTS						15 GB
ECMWF	GRID						42.9 GB
	MOLTS						
ECPC	SFM_GRID						1282 GB
	SFM_MOLTS						12.2 GB
	RII_GRID						1282 GB
	RII_MOLTS						12.2 GB
	RSM/ICTS						8.9 GB
BMRC	GRID						1.8 GB
	MOLTS						14.3 GB
NASA/GMAO	GRID						0.1 GB
	MOLTS						
NASA/GLDAS	GRID						0.2 GB
	MOLTS						
NCMRWF	GRID						20.5 GB
	MOLTS						
CPTEC/INPE	GRID						11.7 GB
	MOLTS						
CMC	GRID						
	MOLTS						

Gridded data   MOLTS data

Data arrived in the Hamburg file archive but not yet included into the data base

Hans Luthardt   M&D/MPI-M   4324.8 GB

- Total Storage for CEOP – 1.3 TB (as of 10/5/04)

Model Papers Submitted

1. Modeling of surface flux in TongYu using the Simple Biosphere Model 2 (SiB2)
2. Simulation of CO_2 and Sensible/Latent Heat Fluxes Exchange between Land Surface and Atmosphere over Cropland and Grassland in Semi-Arid Region
3. Skin Temp Analysis and Bias Correction in a Coupled Land-Atmosphere Data Assimilation System
4. Modification and Application of the Satellite Based Land Data Assimilation Scheme for Very Dry Soil Region Using AMSR-E Images: Model Validation at Mongolia - A CEOP Data Platform
5. The Diurnal Cycle of Water and Energy over the Continental United States from Three Reanalyses
6. Development and Validation of a New Land Surface Model for the JMA's Operational Global Model Using the CEOP Observation Dataset
7. Global Evaluation of the RSM Simulated Precipitation through Transferability Studies during CEOP
8. CPTEC GCM and Eta Model Verifications against Rondonia Reference Site in Brazil
9. Sensitivity of Land Sfc Simulations to Model Physics, Parameters, and Forcings, at 4 CEOP Sites
10. Evaluation of Sfc Water and Energy Cycles in the Met Office Global NWP Model using CEOP Data
11. A comparison of some surface variables in the BMRC MOLTS with CEOP in-situ data for EOP3
12. CEOP-based Diagnosis of Prediction Skill of Four Operational GCMs and One LDAS
13. Simulation of the Land-Atmosphere Interactions on the Tibetan Plateau: II. Evaluation of Penn State/NCAR Mesoscale Model, MM5

Some Accomplishments

- Regular telecons
  - Data and Project Updates
  - Data sharing dissemination (e.g. WTF)
  - Walk through data facilities
  - Data storage issues (model requirements, versus data system needs)
  - Formats and variables
  - Science issues and projects
- AGU Dec 2006 Session on Integrated Data
  - Water and Energy budget studies and data handling
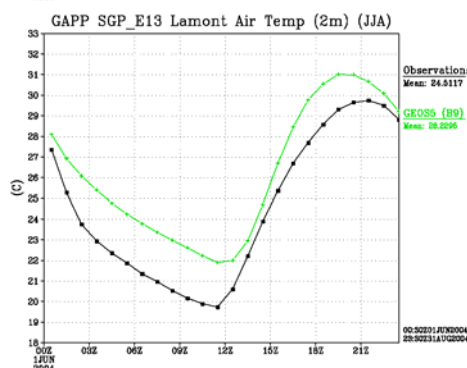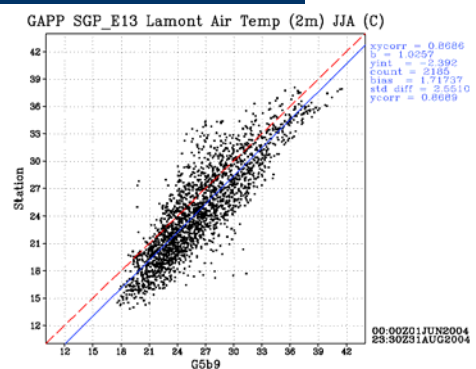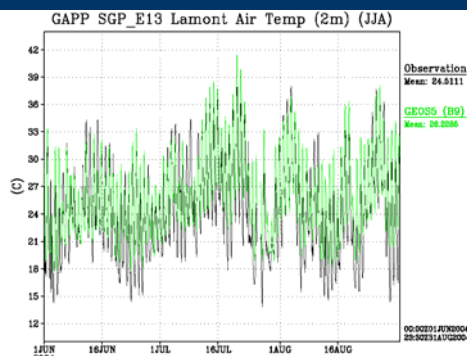 - "outside" invited presenters

GEOS5 Prec and CEOP models
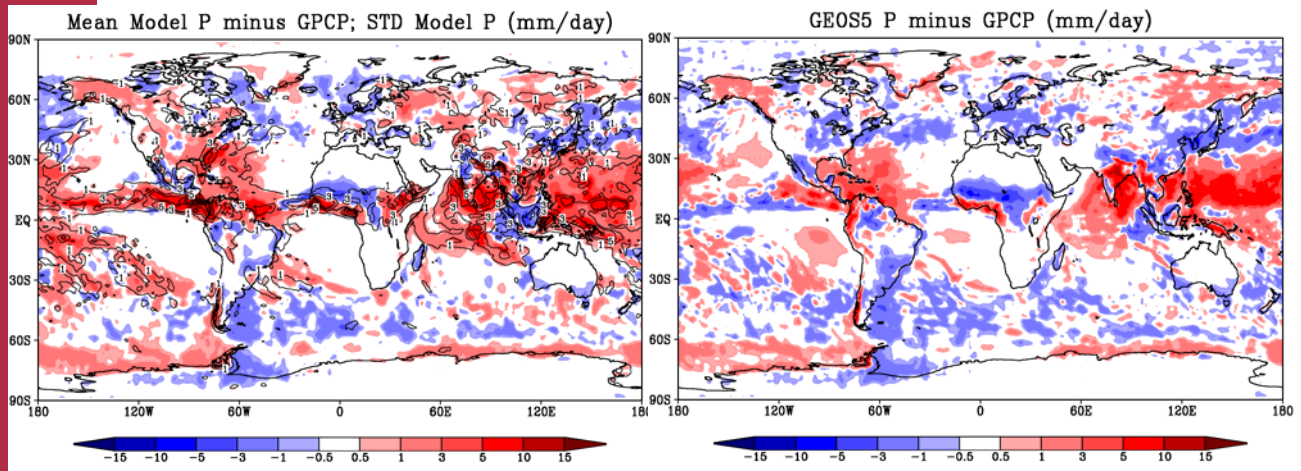
- GEOS5 for Modern Era Retrospective-analysis for Research and Applications (MERRA)
- CEOP Models – UKMO, JMA, NCEP, ECPCRII and SFM

GEOS5 Validation (CEOP)

- GEOS5 Comparison with EOP3/4 CEOP Stations
- >4000 images for JJA2004