

## **5.4 CEOP Modeling and Data Integration/Assimilation Session**

(includes CEOP analyses  
intercomparison project,  
downscaling issues)

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# Issues

- (i) Status of Development of Tools/Formatting /Archiving
- (ii) Milestones/Results achieved/remaining in Phase 1 and planned for Phase 2
- (iii) User Interface and Application experiences
- (iv) Quantification of impacts on Science initiatives
- (v) Accommodation of New Science Requirements
- (vi) Plans of CEOP Analyses Intercomparison Project and Downscaling Initiative for Phase 2
- (vii) Data Contribution Agreements for Phase 2
- (vii) Concrete objectives to be achieved within the following year and proposed implementation steps

# Issues Revised by MGB

- (i) Status of Development of Tools/Formatting /Archiving
- (iii) User Interface and Application experiences
- ?(iv) Quantification of impacts on Science initiatives?
- (vii) Concrete objectives to be achieved within the following year and proposed implementation steps
- (ii) Milestones/Results achieved/remaining in Phase 1 and planned for Phase 2
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- (vii) Data Contribution Agreements for Phase 2

(i) Development of Tools/Formatting /Archiving  
(iii) User Interface and Application experiences

- MPI – M&D perspective
  - Homogeneous meta data formats, CF standard, and surface characteristics (still incomplete for some contributed data)
  - Transformation of 4D to 2d data streams
    - New data preferably in 2d streams (especially in phase 2)
    - Previously uploaded data will be prioritized for conversion at M&D
    - MOLTS processing should be done closer to the contributing center (NetCDF & var names mapping from center to CF standard)
    - WTF access of MOLTS through standard database tables, and current data being converted to NetCDF by Beate

(i) Development of Tools/Formatting /Archiving  
(iii) User Interface and Application experiences

- MPI – M&D perspective
  - CEOP should define a list of primary list of key variables especially considering the extended (10 Years) of data (previous definitions are too broad)
  - No clear data policy is in effect for the model archive – adapt obs data policy, terms of usage (near term action of the group)

- (i) Development of Tools/Formatting /Archiving
- (iii) User Interface and Application experiences

- Center Perspective

- Some aspects of these requirements, still may be prohibitive (manpower needed to process the data, scripting to push to MPI)
  - Action to centers: Go back home and talk with the developers to see if these can be efficiently accomplished
- Grib may be more an issue
  - Splitting data out to 2-d files will consume some resources
- Possible drift of the convert code as users may change aspects of the code

(vii) Concrete objectives to be achieved within the following year and proposed implementation steps

(ii) Milestones/Results achieved/remaining in Phase 1 and planned for Phase 2

- WTF accessing all four types of data from data archives
- Number of papers to special issue
- MPI M&D Organized the MOLTS for WTF access
- M&D Gridded data are integrated into the database system for access, despite inhomogeneous structure
- General more validations at global points has been achieved at several centers
  - Highlighting systematic differences
  - External investigators have evaluated many models

(vii) Concrete objectives to be achieved within the following year  
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(ii) Milestones/Results achieved/remaining in Phase 1 and  
planned for Phase 2

- Need to encourage prompt feed back to the centers providing the data
- This is crucial to demonstrating to the center's management that there is benefit to participating in CEOP Phase II
  - Requires demonstration that significant observational data exists to accomplish intercomparison/evaluations of model output



(vii) Concrete objectives to be achieved within the following year and proposed implementation steps

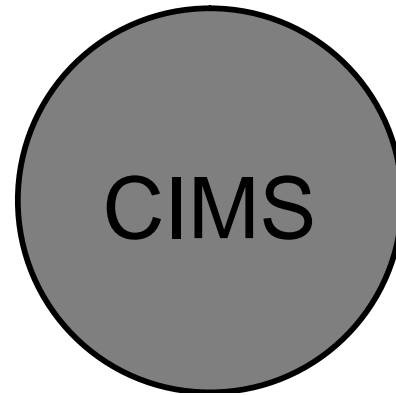
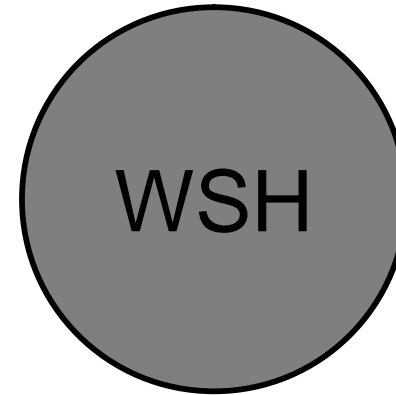
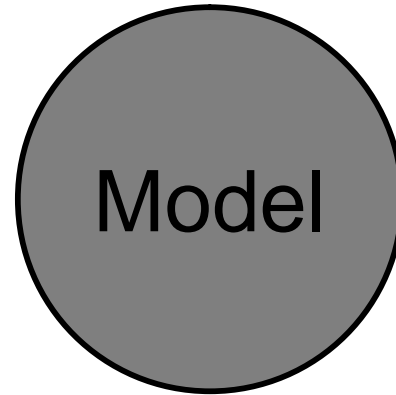
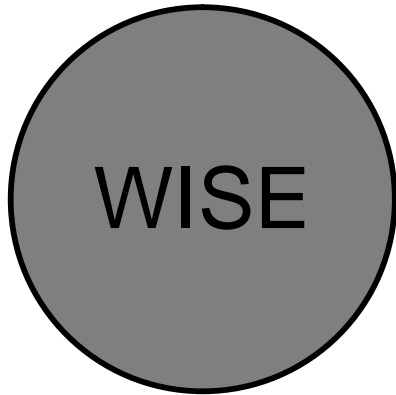
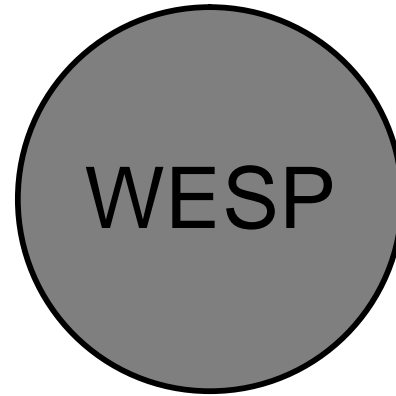
(ii) Milestones/Results achieved/remaining in Phase 1 and planned for Phase 2

- Strive for Completion of CEOP Phase 1 Streams at M&D (not going to close it if not) Including conversion of existing MOLTS to NetCDF CF
- Define, finalize and accept a uniform formats for CEOP Phase II for MOLTS and Gridded data
  - Risk: some centers may not be able to comply with imposed format requirements
  - Benefit: significant advantage in having a MOLTS standard in NetCDF CF format
- Extend model intercomparisons to the gridded data sets
- Improved communications on science issues
  - Requires some high level structuring of CE

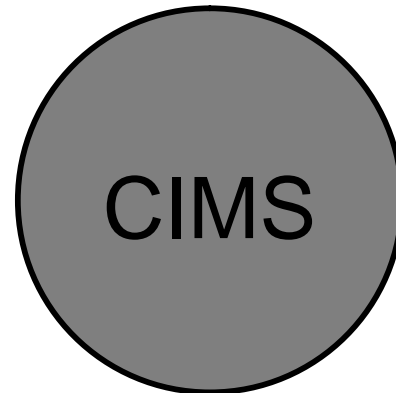
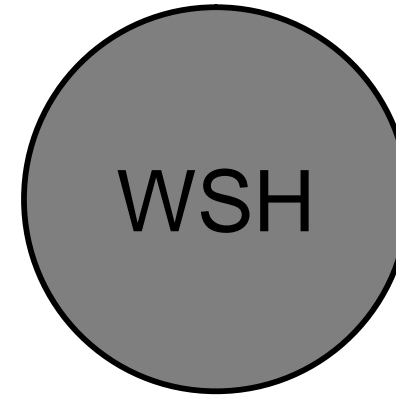
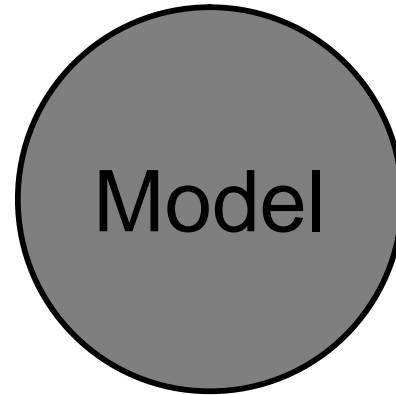
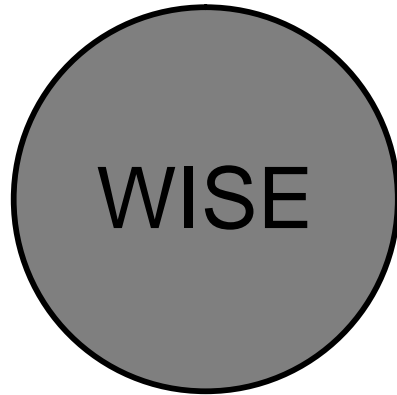
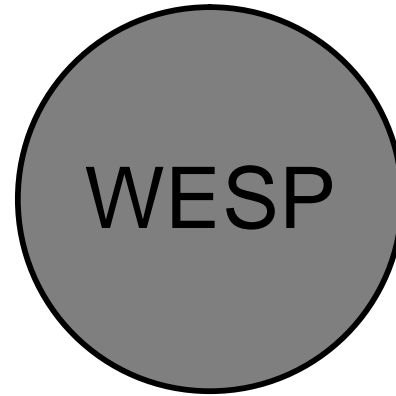
(v) Accommodation of New Science Requirements  
(vi) Plans of CEOP Analyses Intercomparison Project  
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- What are the requirements of the science initiatives?

Model  
Collaborations  
with CEOP  
Science  
Initiatives

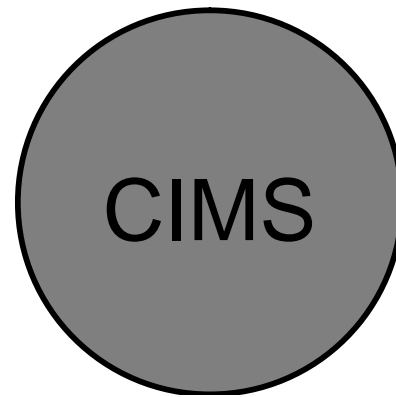
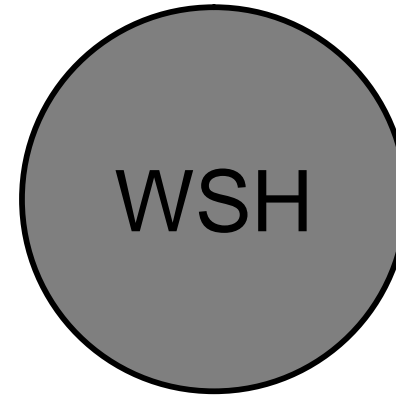
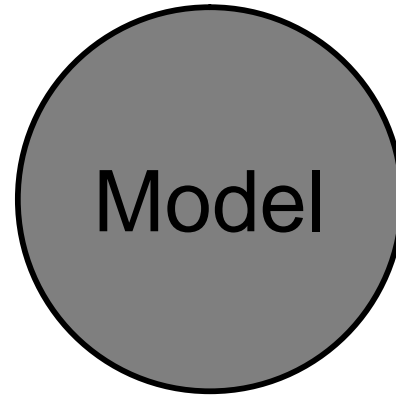
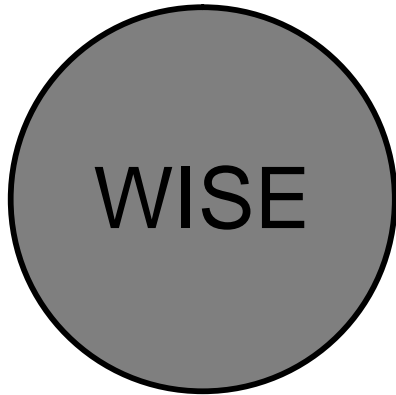
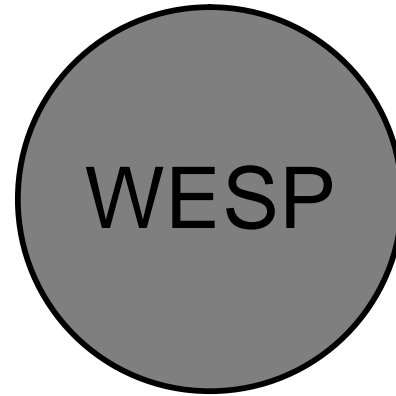


Model  
Collaborations  
with CEOP  
Science  
Initiatives



No Way!

Model  
Collaborations  
with CEOP  
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Initiatives



(v) Accommodation of New Science Requirements  
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- What are the requirements of the science initiatives?
- Encourage / support use of model data in the science initiatives
  - Requires some encouragement from CEOP management
- Focus on user (external) accessibility (e.g. formats and a general set of variables), to open data sets for science beyond CEOP
- Examples:
  - Encourage budget studies to consider residuals in both the model and observations (leads to uncertainty estimates)
  - Cloud observations / Model output not well defined

## (vii) Data Contribution Agreements for Phase 2

- Need to determine the scope of the data request from CEOP science
  - E.g. prioritizing variables
- Done in conjunction with the centers