

NOTES ON WORKGROUP REPORTS

WG II: BLUEPRINT for a CSME

Concept of short term goal: Need an IT solution to link legacy code. Idea could be a large data structure (in 3_d and time) that would hold all the key dep variables and properties of physical space (Mannings n etc.), almost like a large COMMON block. All modules would go to datastructure and obtain values and update values. If variables aren't at same point in grid then datastructure would have capabilities to interpolate.

Concept of longer-term (5-10 year) goal: Completely rewrite modules to all exploit a common gridding and solving substrate. So all modules would use the same gridding and solving schemes and therefore each node in the solution space would have all the info attached to it necessary for all the modules.

Comments:

- Shouldn't we take advantage of other modular architectures (MMS; OGME, ESMF, etc....)
- Where is decision going to be made for what is the timeframe of the project...must be in white paper (Karner); need milestones to determine if goals are being met or if funding should stop.
- Most of the science is to be done by volunteers; the IT is purchased (salaries for IT's)
- What is relationship of CSME with USACE projects...Mississippi sediment project, SMS, etc.? Are incorporating their flow and sed models?
- Scientists must be involved in datastructure-interface creation

WG IV: MODULES

This group presents the idea that there will be a program "environmental determinator" that internally selects what modules are to be brought to bear..... Curious and ambitious!

They made the decision that ocean, atmospheric, and lithospheric models will be imported from other groups and will not be a primary focus of CSME. Nevertheless, we may need stripped-down versions that can be run interactively with sed redistribution so flow fields can be modified by changing lower BC.

Comments:

- How do these many modules map into Working Groups? 1) disciplinary classification, carbonates, siliciclastic coasts, etc; 2) organize WGs about "Grand Challenges", so they are problem classified rather than discipline-classified.
- They have been asked to articulate concept of environment determinator
- It's a community earth surface dynamics model, not a sediment model; let's talk about a different name. Soln: Everyone is to send in name suggestions and steering committee will decide.

WG I: SCALING

Any one problem usually involves only 3 orders of mag of time/space. For example, if we're computing evolution of continental shelf we (as humans) restrict our thoughts to units larger than grains.

Comments:

- Should we organize modules, etc. according to scale of depositional system (landscape, reach, bedform, grain scales) or according to scale of the process (creep, etc)?
- To parameterize subgrid-scale processes in the larger models, do we embed or nest grainscale models within the larger scale model or do we use grain models to come up with parameterizations of "sed transport laws" and then embed them in larger scale models?
- Shouldn't just upscale grain models because.....don't get correct answer, but why and how can we know when it will and won't work.

WG :VIRTUAL CSM

How will the CSME look to the outside and how will the outside look to CSME? Propose a "journal" model for accepting or rejecting code; a "call for code" adopting ODP procedures. Do we want to rewrite code into one standard language? Envision 4 levels of software: Donorware:....unreviewed, just archived. Freeware: no QC but in the toolkit. Shareware...accepted on science basis and software basis and linked into CSM gui. MS CSM:

They suggest that CSME be located at three institutions, each with a different part...one dealing with ed/outreach maybe, one with code development & IT, etc. What's the OS/language?

Comments:

- Get something out quickly!
- We must decide whether this is designed and controlled closely, or whether this is a chaotic web organism, like an open chat room, relatively uncontrolled. Answer is that bottom of pyramid (donorware) is uncontrolled, and top of pyramid is controlled.
- If we make testing against data and nonsense filters a formal step, then this becomes a significant time-sink and also requires standards. Who defines standards? Working Groups? A Standards Committee? Use "Request for Comments" Model or Linux protocols.
- Should we limit access to beginners (to avoid unhappiness of user) and then as they become more learned, they gain access to complete system?

Key Questions:

1. Institutional Structure—1 vs 3; nodes
 2. Code Standards---language
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COMMENTS ON SECOND BATCH OF WORKING GROUPS

WG I: Interaction with Field and Lab Efforts

Comments:

- An action item for us should be to identify data gaps and encourage experiments to fill them.
- WPaper should be written to underscore that we need data to validate models and then models will be available to help guide data/field studies.

WG II: Ice and CSM Linkages

Comments:

- On Testing models: Ice community tested all their models in a 3 year effort and found large differences. This raises issues of whether papers should be retracted, should the test be blind, etc.
- How many of the current ice sheet models have sediment algorithms that erode, make moraines.....? A number do.

WG III: Climate and Ocean Linkages

Motivation for linkages: 1) carbon delivery to deep ocean through submarine canyons; 2) what are effects of coastal processes on industrial infrastructure (platforms,); 3) testing of paleoceanographic interpretations.

WG IV: Hydrology Linkages

FINAL SUMMATION

ISSUE I: ORGANIZATION STRUCTURE

Is this a valuable concept: 1) National Center with the programmers and core server; 2) Nodes would consist of distributed centers with 0(\$100K/year) funding to support various Working Groups; 3) a pot of money for individual Pis to compete for. Nodes would provide homes for working groups and support their functions....getting group together, supports the working group's website, provides the funding for developing the science QC for the group.

Alternatively, a node could be a center that specializes in IT or visualization. No group consensus....Writing Group will flesh out the structure and solicit comments.

ISSUE II: STRATEGIC IMPLEMENTATION

What must be done first, etc will be created by Writing Group

ISSUE III: NAME

Community Sedimentary Modeling Environment

CESL

CESME

CEDME

SCUM

Community Earthscape Model

Earth Surface Modeling Framework

OTHER ISSUES

How or when will the working groups emerge?

TO DO LIST

CDs to Writing Group

Write EOS article

Write MARGINS Newsletter article

All presentations, original workshop proposal, all our abstracts from previous year.... on

Web for attendees

Presentation to Program Managers in April/May

Draft document converted to printed document