CIG -
Serving the Community

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Outline

- Software Conclusions and Workshop Observations

- What will CIG NOT do!

- What can CIG do for you?

Software Conclusions & Workshop Observations

- The number of computational codes in <u>wide</u> use across <u>this</u> community is not great
  - Tecton (Lithomop/Pylith) and FLAC
    - CIG is already working on putting these into the CIG framework!
    - With mechanisms to allow you to customize/extend these
  - Dalhousie's ALE code
    - Lot's of options on how it might be contributed/engaged
  - The community seems to be okay/ripe for consolidation of community computational codes

Software Conclusions & Workshop Observations (cont.)

- A better geophysical characterization of what codes are good for what would be very useful

  – And what extensions have been made to codes, what works and what does not

- Once CIG software repository gets operational, a process for the community to contribute is needed

  – Improvements/fixes for CIG software

  – New codes for the CIG repository

  – Reviews by users and benchmarks

Software Conclusions & Workshop Observations (cont.)

- There is widespread interest in benchmarking
  - Suzanne's presentation
- Benchmarking is widely used in other communities
  - SPEC, TPA
- Benchmarking really helps us (developers)
  - Especially if the user community and developers collaborate on these
  - They give us "targets" and "tests" for code development
- Benchmarking really helps users
  - Selecting the right code for new problems
    - Correlation with observations (physical models)
  - Strengths and weaknesses of codes

Software Conclusions
& Workshop Observations (cont.)

- Trends in scientific issues and their relations to models

  - Model coupling (muliphysics) for

    - Surface and lithospheric processes

    - Magmatic and lithospheric processes

    - Embedding models with different resolutions

  - More complex models: thermal, viscous, plastic, elastic combined

  - 3D (and models with higher resolution)

  - Inversion??

What will CIG NOT do!

- Your research
  - We build infrastructure to support research
- Write new solvers
- Discourage development of new solvers
  - Such as GObjects
- Determine community science priorities
  - The user community, resources, and development costs should determine what goes into the framework

What CIG Can do

- Put established codes into the framework
  - Level of support may vary (Gold, Silver, Bronze)
    - Based on maturity/stability/usage of codes
  - Provide training and documentation
  - Support developer contributions of new code and user models and reviews

- Foster and support community collaboration
  - Benchmarking
  - Web communities (wiki's, plumes)
  - Repositories of models (code, input, output, papers)

- Provide funding leverage
  - CIG's resources are very limited, so we need to leverage all we can