



Earth & Environmental Systems Modeling

Local/Regional Testbeds

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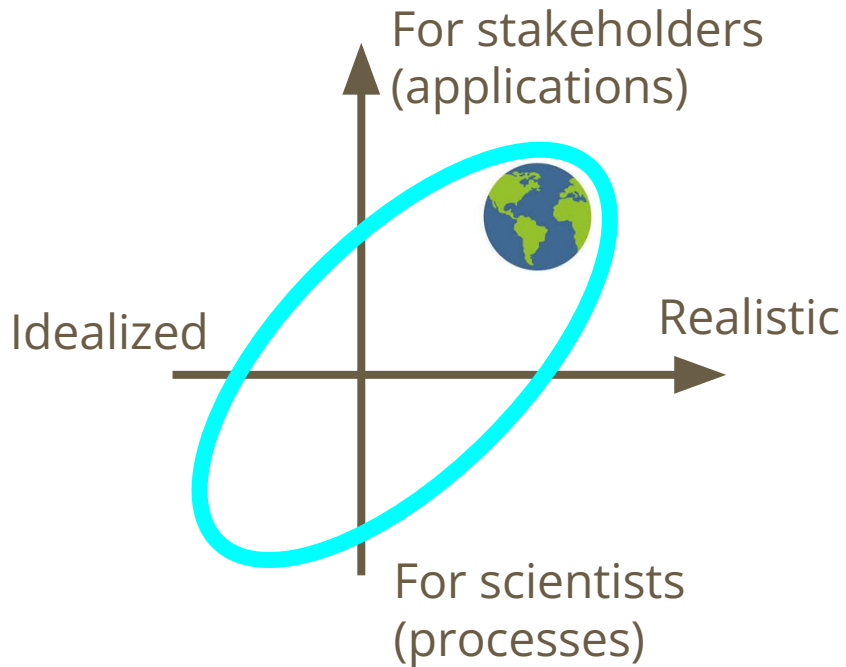
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What are Testbeds?



Testbeds are:

- Constrained
- Purpose driven
- Data driven/supported
- Transferable (in part)

- Often multiscale
- Often hierarchical



Grand Challenges

Primary Grand Challenge:

Transferability

There are many elements to transferability, e.g., extrapolating a process or moving to a new region:

- Configuration, e.g.,
 - Regional refinement of E3SM
 - Transferability of limited domain models
 - Interactions across different modeling systems
- Data collection, computational resources
- Metrics, uncertainty, and evaluation of success



Grand challenges, cont

10+ year goal:

Create a framework for a digital earth testbed

2-10 year goals:

AI-assisted automated setup of hierarchical modeling system

AI-assisted data collection, curation, and scaling for model setup