NOAA Next-Gen Global Prediction System
Sea Ice Modeling Workshop
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Facilitating Community Modeling for use in NOAA Operations

A DTC perspective

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&
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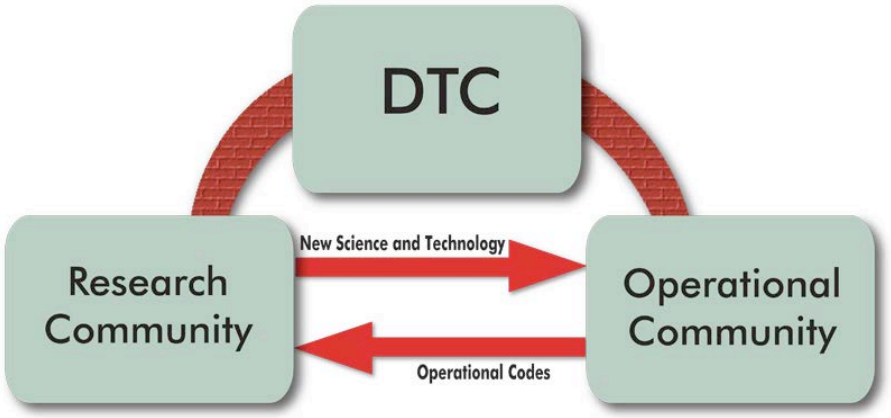


Benefit of Community Modeling

Potential enhancement of the quality of the prediction system by having a large web of scientists contributing to the code base and evaluation of results

- **Users**
  - Run the system, evaluate results, provide feedback for improvement
- **Researchers**
  - Investigate ways of improving the prediction system
- **Developers**
  - Implement innovations in the prediction system

Sometimes a single individual can work on multiple categories

Fostering community

- **A community model is…**
  - … a model that is actively used by the community (but note that all models start somewhere - it can take a while to build community)
  - … not a model used by a small number with code freely available to the public (not enough)
- **What makes a healthy community grow**
  - Buy in, ongoing inclusiveness in the development strategy
  - High-quality of code and results for community needs
  - Portability, flexibility, and ease of use
    - Documentation, training, formal support, peer-to-peer network
  - Code management: access to source with protocols and coding standards that facilitate contributions
  - Targeted funding for using a model

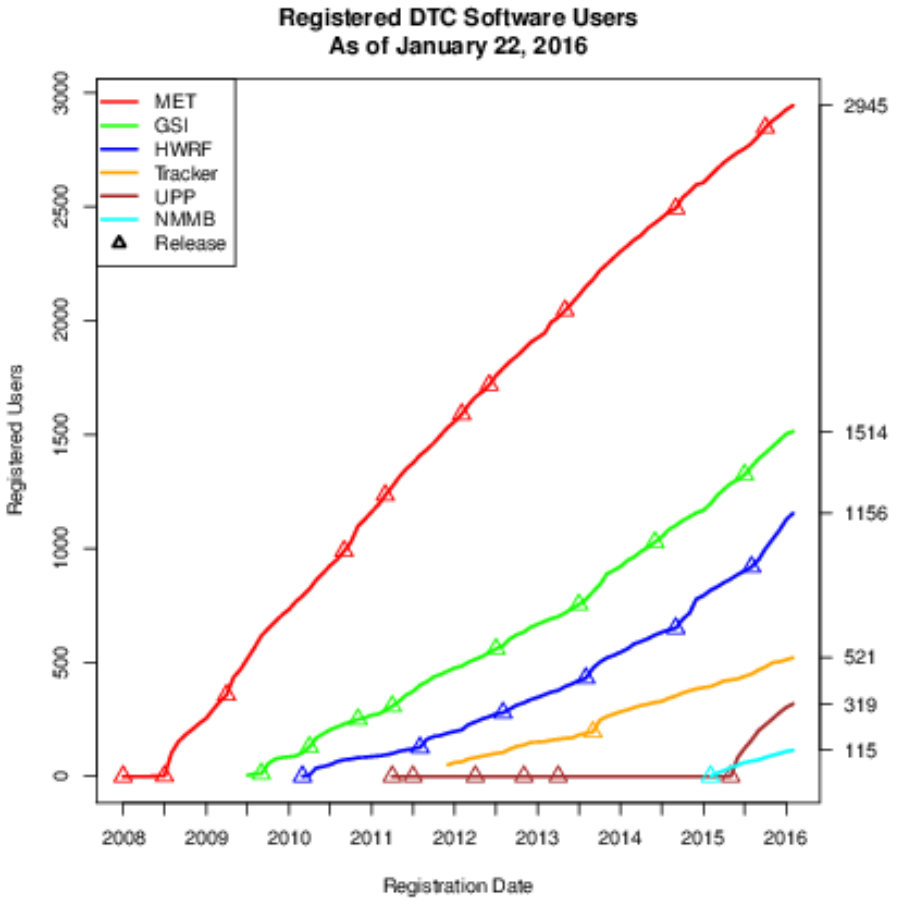
Realizing R2O (research to operations)

Adoption of a community model by NCEP does not automatically translate into benefits to operations

- Research community needs to work in problems that are relevant for operational centers, which requires
  - Communication between operational centers and community scientists on priorities for research and development (workshops, NCEP Model Evaluation Meeting, etc.)
  - Targeted funding lines (such as NGGPS FFO) to support both process studies and how improving them affects products
- NCEP needs **relevant** information about test results
  - Need for testbed facilities that addresses both R and O requirements

Periodic, well-tested released with full documentation, training, and support

Publicly-released packages by DTC



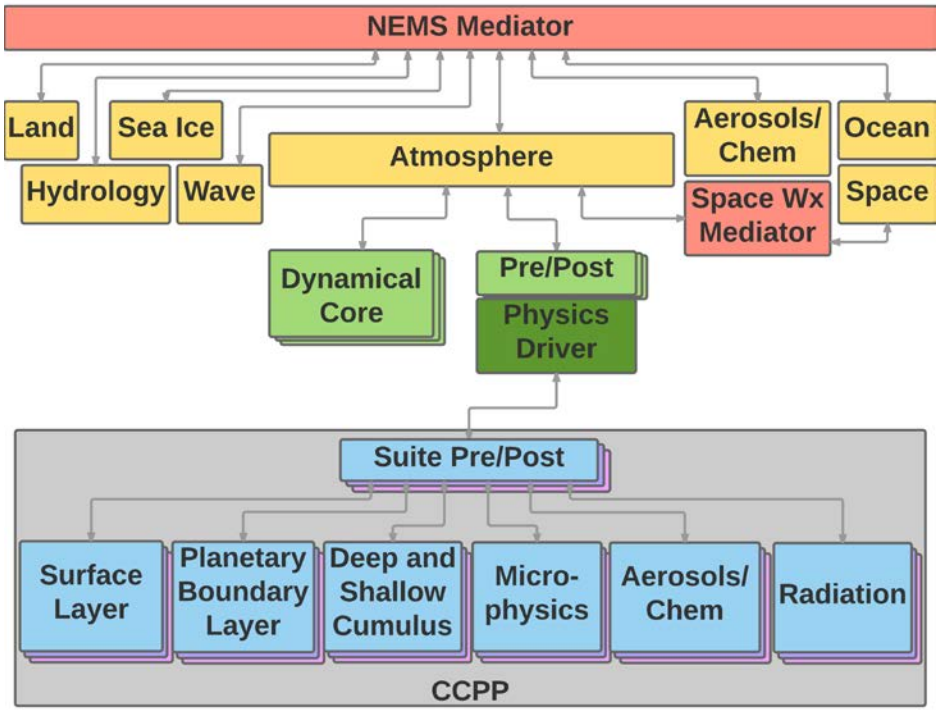
- MET – Model Evaluation Tools (forecast verification)

NCEP Operational Codes

- GSI - Gridpoint Statistical Interpolator (data assimilation)
- HWRF – Hurricane Weather Research and Forecast model
- Tracker - Vortex tracker for tropical storms
- UPP – Unified Postprocessor by NCEP
- NMMB – Nonhydrostatic Mesoscale Model (regional weather prediction)

DTC also provides code management and developer support for some of these packages

DTC's new Global Model Test Bed



Focus on facilitating community interactions with NCEP for global model improvement

Primary focus on improvement of atmospheric physics

Additional focus on testbed: making available NGGPS model codes, test workflows, verification/diagnostics, case studies, documentation – which can serve further experimentation with sea ice model