



Getting Assimilated: A Graduate Student Experience

EarthCube Workshop
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Outline

- My Education
- My Research
- Computer Resources
- Data Resources
- A specific hurdle
- Wishful thinking...



My Education

- **Meteorology undergrad**
 - No NWP
- **Core classes**
 - Dynamics, Physics, Radiation, Chemistry
- **Electives**
 - Mesoscale , Tropical, Climate Statistics
- **Diverse department**



My Research

- **Global LETKF System**
- **Regional LETKF System**
- **Focus: moderate and low resolution Typhoon analyses and forecasts**
- **Goal: Determine any added benefit the regional analysis has over the global analysis**

Computer Resources

- Linux Cluster with 21 8-processor nodes
- ~50 Tb of storage
- <4 users
- Share office with System Analyst with meteorology background
- Access to department IT staff

Learning Curves

- Computer architecture
- Code setup for different analysis systems
 - Shell scripts, FORTRAN, Makefiles
- Doing the science
 - What is an Ensemble Kalman Filter anyway?
- Visualization
 - Grads, MATLAB, etc.



Helpful Resources

- **NCAR's CISL RDA**
 - Lots of data sets and very user friendly
- **Nomads**
 - Lots of data sets
- **NCEP Central Operations**
 - Source code
- **OpenGrads**
 - Great open source software that is aimed at some of the very specific problems we face



A SPECIFIC HURDLE



Data: Files needed

- Initializing experiments:
 - PREPBUFR
 - sfc anl
 - T62 resolution
 - Specific set of variables (200004 format)
- Files available
 - T62 NCEP/NCAR Reanalysis (unknown format)
 - T126 CFS (200509 format)

Wishful Thinking

- Siri would do everything
 - Find files
 - Pre- and post-process files
 - Set up experiments
 - Remind me to check progress
 - Notify me when there were computer issues
 - Notify me when one experiment was finished and then start the next....
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Wishful Thinking

- In reality
 - Better documentation would be the single most helpful change
 - Source code for reanalyses, operational systems, software for those output files, model source, etc.
 - A graduate student community forum to share these experiences
 - A data base for common questions



You will be assimilated. Resistance is futile.
- The Borg, Star Trek

