

2012 GSI Community Tutorial

DTC NCEP/EMC NASA/GMAO NOAA/ESRL NCAR/MMM

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August 21-23, Boulder, CO

Special Acknowledgement: AFWA, NOAA, NCAR. NCAR is supported by NSF



Developmental Testbed Center

“History”

- June, 2006: North American Mesoscale (NAM) System, NCEP
- May, 2007: Global Forecast System (GFS), NCEP
- 2007: DTC started to document GSI.
- 2009:
 - Created GSI code repository over NCEP and DTC
 - First GSI release V1.0
 - Started user support
- 2010:
 - First Community GSI tutorial
 - Created GSI Review Committee
- 2011
 - First Community GSI workshop

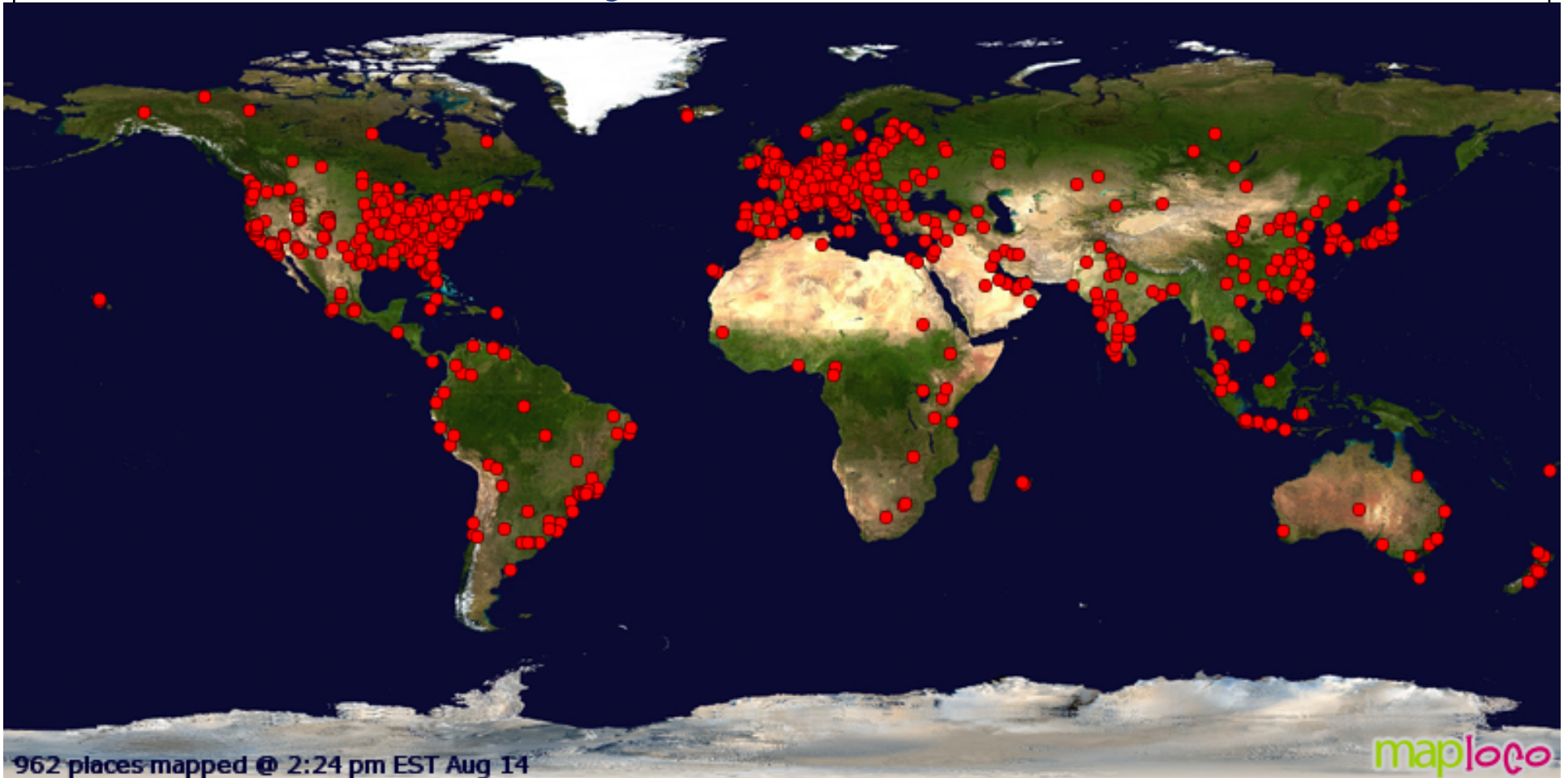
GSI is being used as

- An operational data assimilation/analysis system for:
 - NAM, GFS, Hurricane WRF (HWRF), Real Time Mesoscale Analysis (RTMA), climate analysis, RAPid Refresh (RAP), NASA global, ...
- A research model:
 - NESDIS, NCAR, AFWA, ...



Number of registered Users: 581

Community GSI Website Visitors



Community GSI Release

GSI Downloads

GSI System

You may download the following versions of the GSI system (GSI source codes, libraries, compiling system, fixed files, and run script) from this site.

- Community GSI system V3.1: Release on 07/20/2012
- Community GSI system V3.0: Release on 04/29/2011
- Community GSI system V2.5 Patch Release: 11/29/2010
- Community GSI system V2.0: Released on 04/27/2010
- Community GSI system V1.0: Released on 09/25/2009

Source code and fixed files were based on:
the GSI EMC trunk **r19180** (May 10, 2012)
the community GSI trunk **r826**

Source code and fixed files were based on:
the GSI EMC trunk **r12534** (Feb 25, 2011)
the community GSI trunk **r593**

Source code was based on the
NCEP Global Implementation:
Q1FY10

GSI Documents And Publications

GSI User's Guide

- **GSI version 3.1** comprehensive user
- **GSI version 3.0** comprehensive user
- **GSI version 2.0** comprehensive user
- **GSI version 1.0**

GSI Tutorials

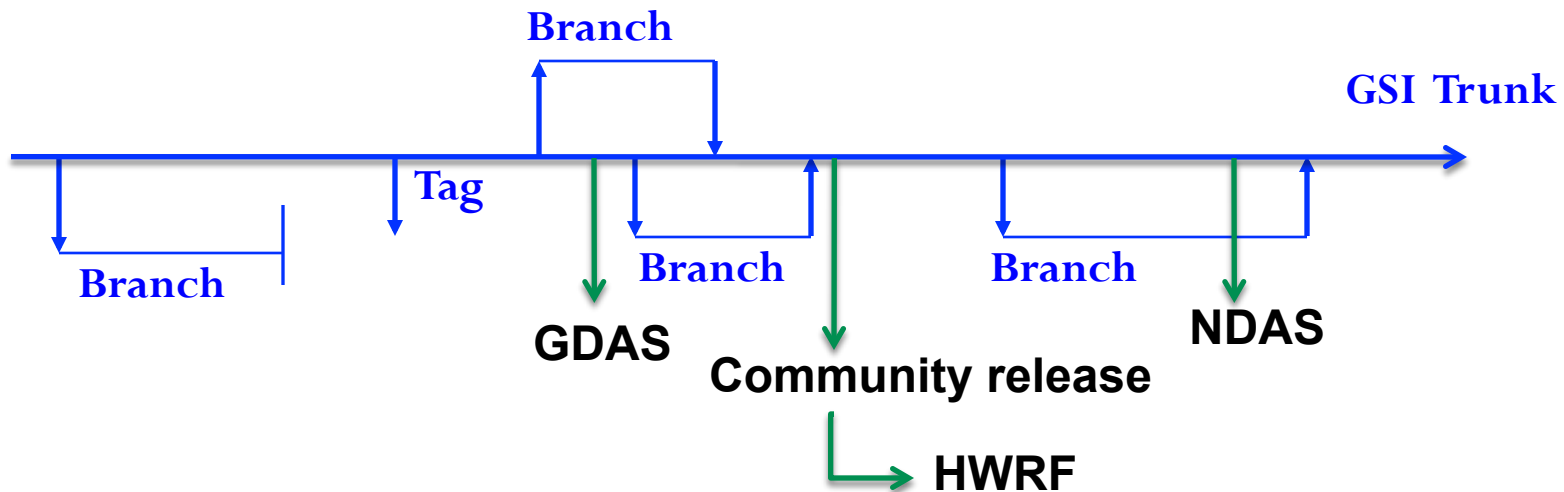
The GSI On-line Tutorial provides the basic steps to compile the GSI system, and test cases for the code to run.

- [Tutorial for community GSI Version 3.1](#)

The GSI User's Guide and the on-line tutorial cases are updated with each official release.

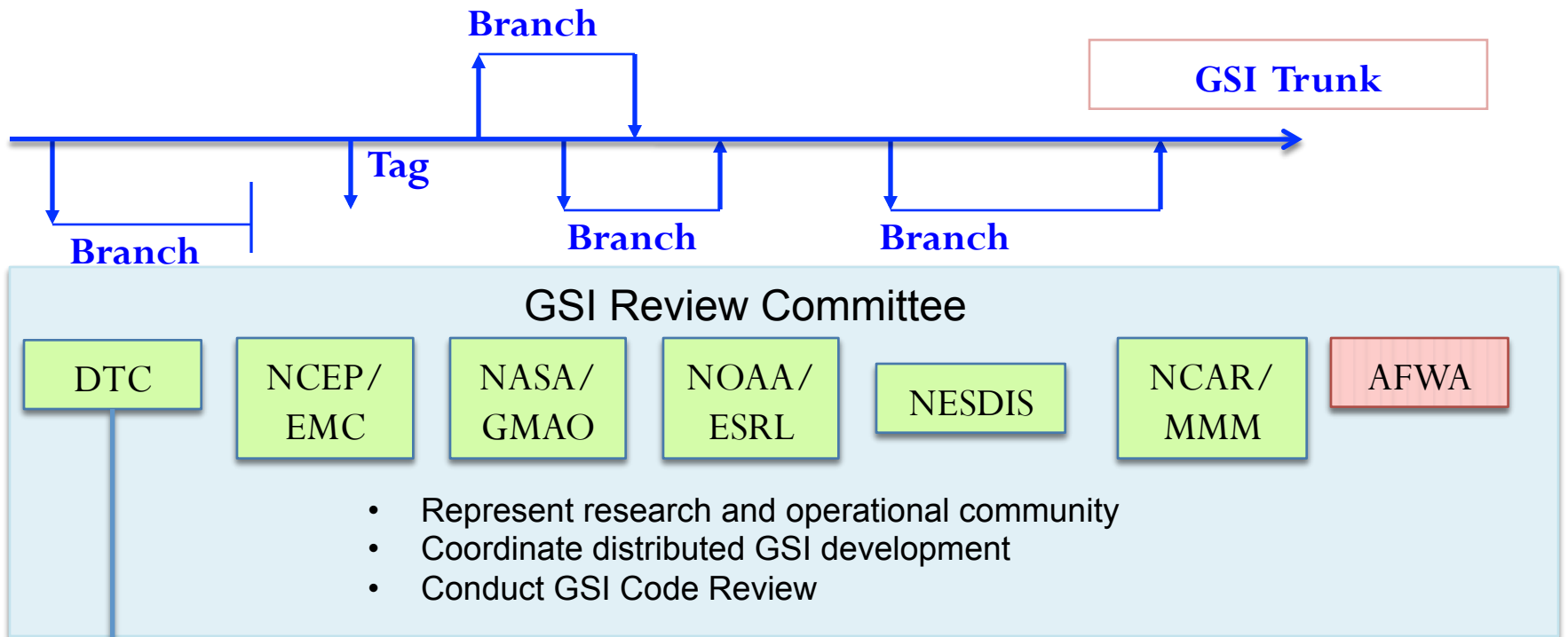


GSI Code Repository



- Use tags or branches for: Release, new development, bug fix ...
- Applications may use different revisions in the trunk (“snapshot”).
- ✓ Which GSI should I use ?
There is no “DTC GSI”, “EMC GSI” or “global GSI”. There is **only one GSI!** For a researcher, community release should be sufficient to use. If you are interested in getting new development back to the GSI trunk, contact GSI helpdesk (gsi_help@ucar.edu) get access to the developmental version of GSI.

GSI Review Committee



- DTC is working as the pathway between the research community and operational community.
- Provide visitor program for potential contributions to the operational code.
- Provide equivalent-operational tests of community contributions and provide rational basis for operational implementations.

Tutorial Agenda: Lectures and Practices

Overview and introductions (*Tuesday*)

Welcome, Background and Participants' Introduction
Fundamentals of Data Assimilation
Overview of GSI
Introduction to Practice Session

Group Picture: Tuesday Morning
Break, 10:30 am, August 21, 2012

Community GSI fundamentals and tools (Tuesday-Wednesday)

Practice Session: COMET
room (right behind the front
desk at the main entrance)

GSI Fundamentals (1): Setup and Compilation: *Tuesday*
GSI Fundamentals (2): Run and Namelist: *Tuesday*
GSI Fundamentals (3): Diagnostics: *Wednesday*
GSI Fundamentals (4): Applications: *Wednesday*
Community Tools (1): PrepBUFR/BUFR tools: *Wednesday*
Community Tools (2): GEN_BE: *Wednesday*

Advanced topics (Wednesday-Thursday)

GPSRO Data Assimilation: *Wednesday*
Satellite Radiance Assimilation: *Wednesday*
GSI Infrastructures: *Thursday*
GSI Hybrid Data Assimilation: *Thursday*
Cloudy Radiance Data Assimilation: *Thursday*

Hand on Practices

Practice session: *Tuesday and Wednesday afternoon*
Optional Practice Session: *Thursday*



Tutorial Lecturers and Practical Session Instructors

NCEP/EMC	NASA/GMAO	NOAA/ESRL	NCAR/MMM	NCAR/RAL
John Derber Andrew Collard Lidia Cucurull** ** UCAR	Ricardo Todling	Jeff Whitaker Ming Hu*	Tom Augline Syed Rizvi Ruifang Li	Hui Shao* Don Stark* Kathryn Newman* Chunhua Zhou*

* Developmental Testbed Center (DTC)

Ming Hu, Hui Shao, Don Stark, Kathryn Newman, Chunhua Zhou
 Pamela Johnson