

Data  
Assimilation  
Research  
Testbed



## DART Tutorial Section 2: The DART Directory Tree



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# The DART Code Tree

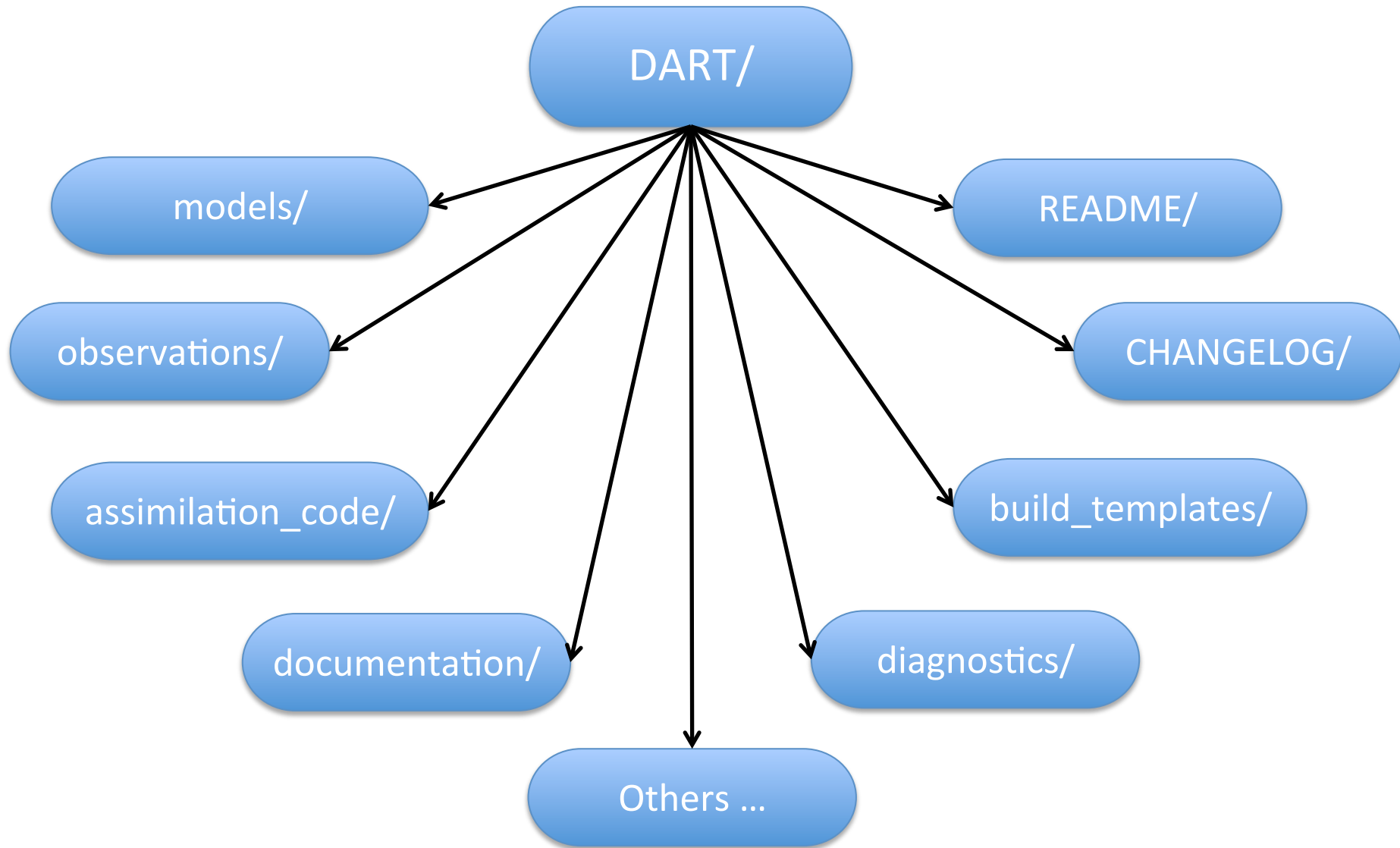
The main portion of DART is implemented as Fortran-90 modules.

Modules are contained in directories under the main DART directory.

DART also contains:

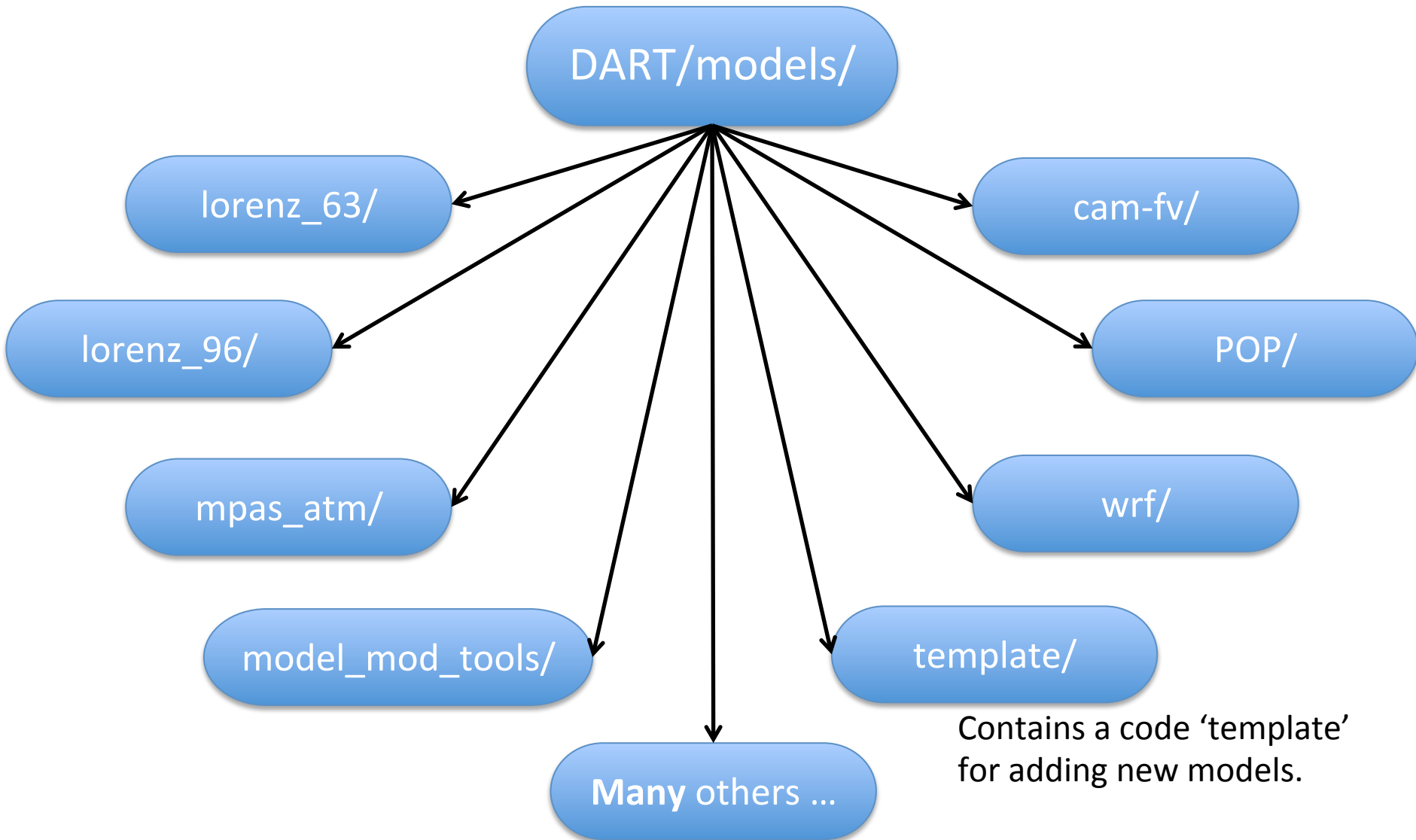
- Documentation (really!),
- Namelist control files,
- Compilation tools,
- Shell scripts for managing large applications, and
- Diagnostic tools.

# DART Top-level directory structure

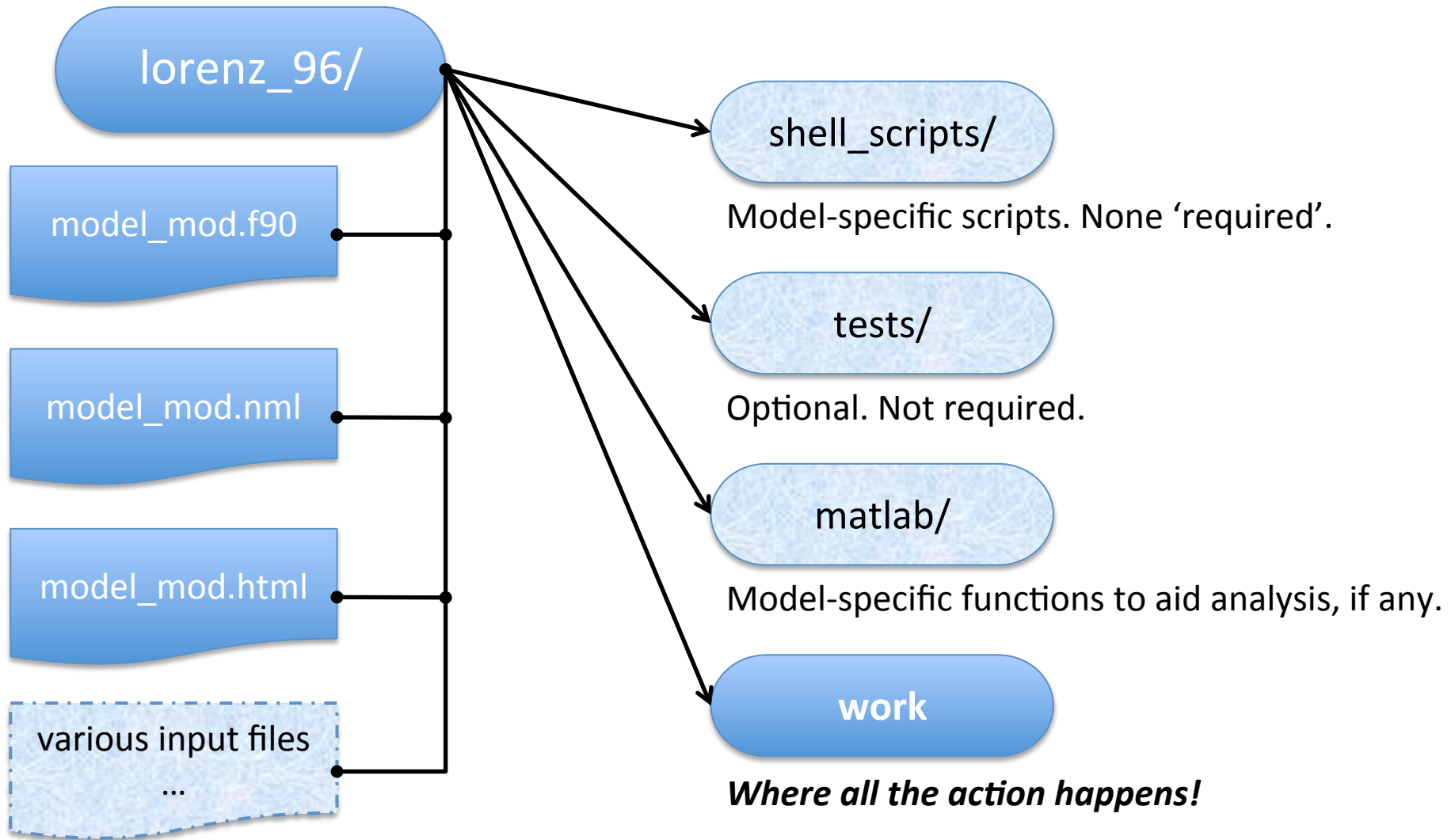


Peruse *your* DART subdirectories!

# DART /models directory:



# DART models directory detail:



Anything with this  
background is optional.

# DART module files:

DART Fortran-90 code comes as code, documentation, and run-time control files.

cov\_cutoff\_mod.f90

Code for module ***cov\_cutoff\_mod***

cov\_cutoff\_mod.html

Documentation for module.

cov\_cutoff\_mod.nml

Run-time control for module.

# DART model/work directory details:

work/

Executables are built and run in model work directories.  
Makefiles and compiler output files reside here.  
Input and output files generally reside here.  
Lots of other junk files tend to accumulate here.  
*Check out contents of **models/lorenz\_63/work**.*

mkmf_xxxxxx	files that control what compiler is used, compiler options, etc. – for program xxxxxx
path_names_xxxxxx	files that control what source code files are needed for program xxxxxx
input.nml	file used by all DART programs for user control
workshop_setup.csh	script used to run 'set' experiments for some workshop exercises. Not all models run workshop experiments.
quickbuild.csh	script used to compile ALL applicable DART programs for this model. Take a look at it. Nothing mysterious.
obs_seq.out.xxxxxx	Sequence of observations to be assimilated for case xxxxxx

# Coding style:

Look at ensemble adjustment filter observation increment subroutine.

In *assim\_tools/assim\_tools\_mod.f90* search for the string *'subroutine obs\_increment\_eakf'*.

*obs\_increment\_eakf()* computes updated mean in a temporary variable named *new\_mean*.

Computes ratio of updated standard deviation to prior.  
Compare to tutorial slides in section 1.



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