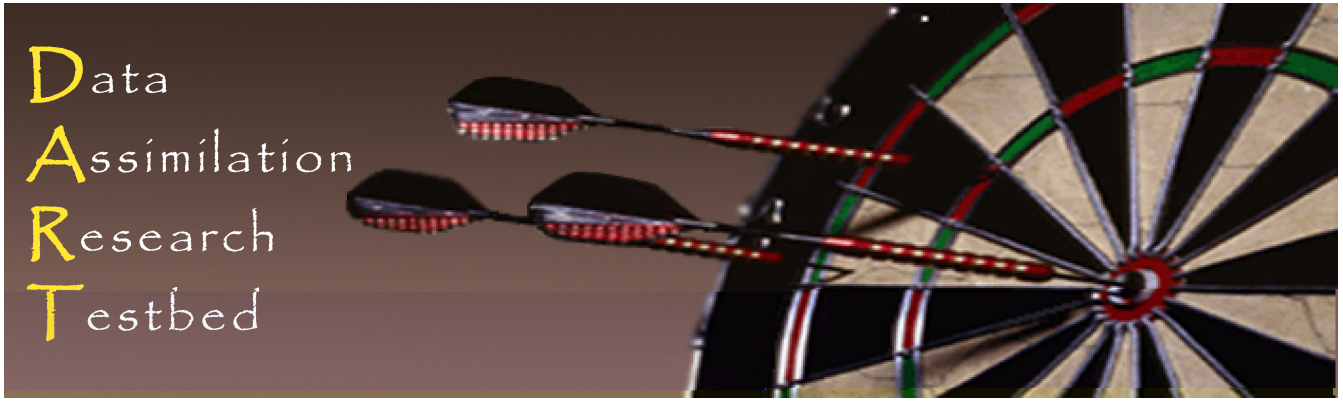
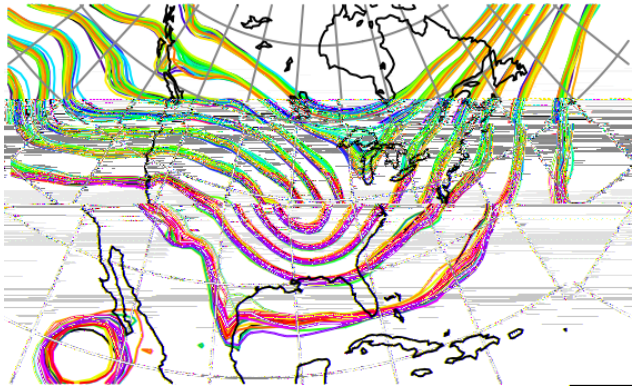


DART Tutorial Section 2: The DART Directory Tree



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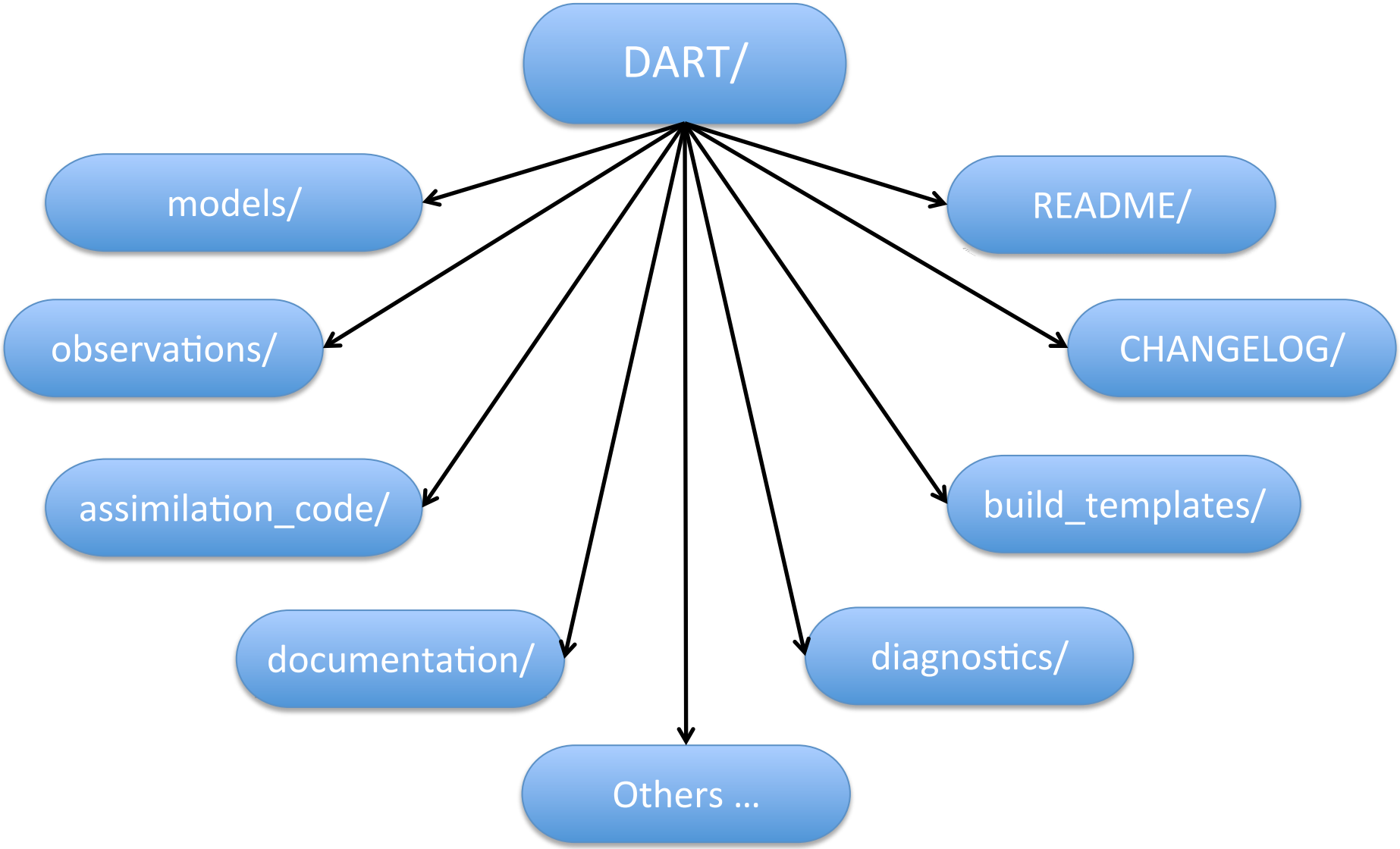
The DART Code Tree

Much of DART is implemented as Fortran-90 modules and programs.

DART also contains:

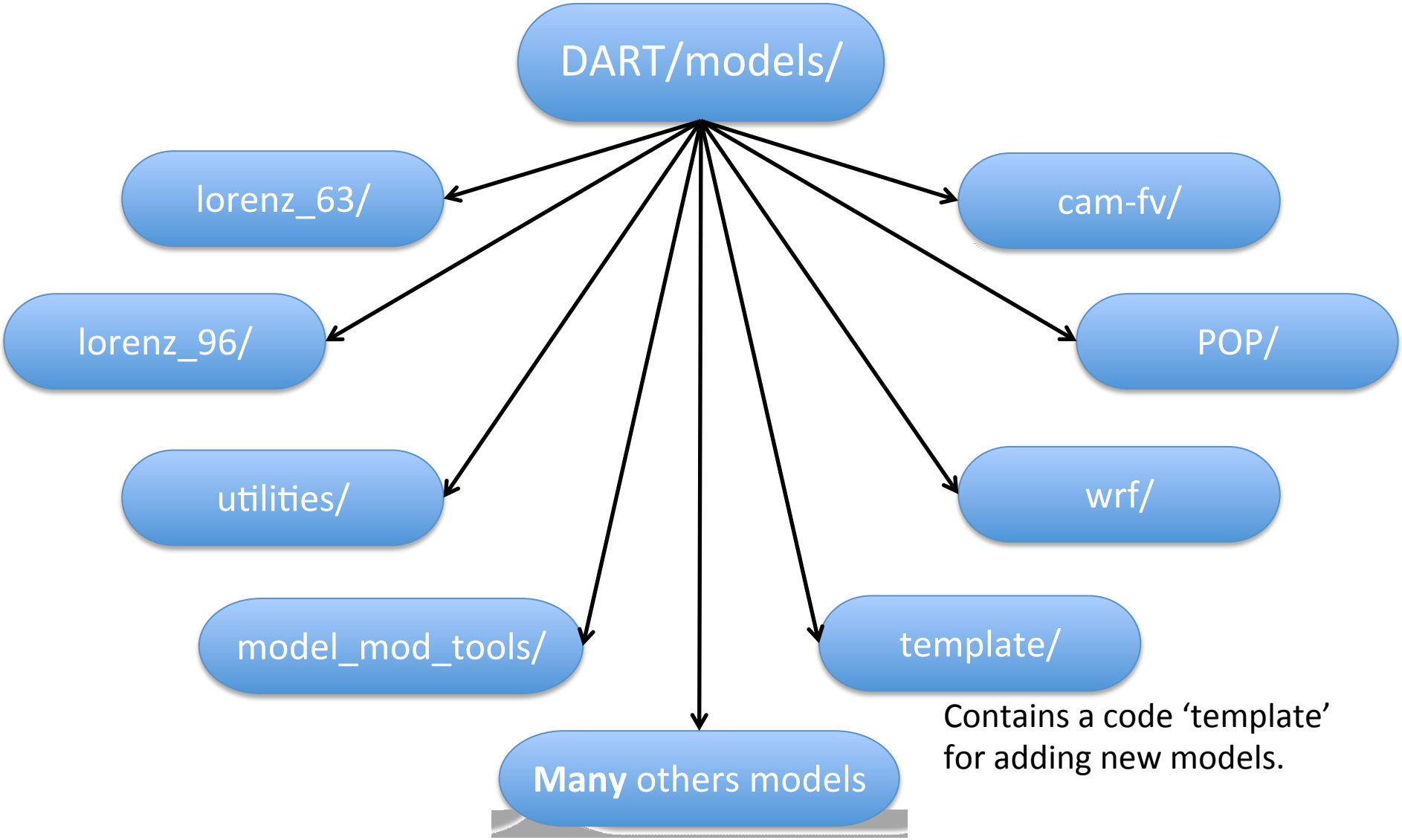
- Documentation (really!),
- Namelist control files,
- Compilation tools,
- Shell scripts for managing large applications, and
- Diagnostic tools.

DART Top-level directory structure



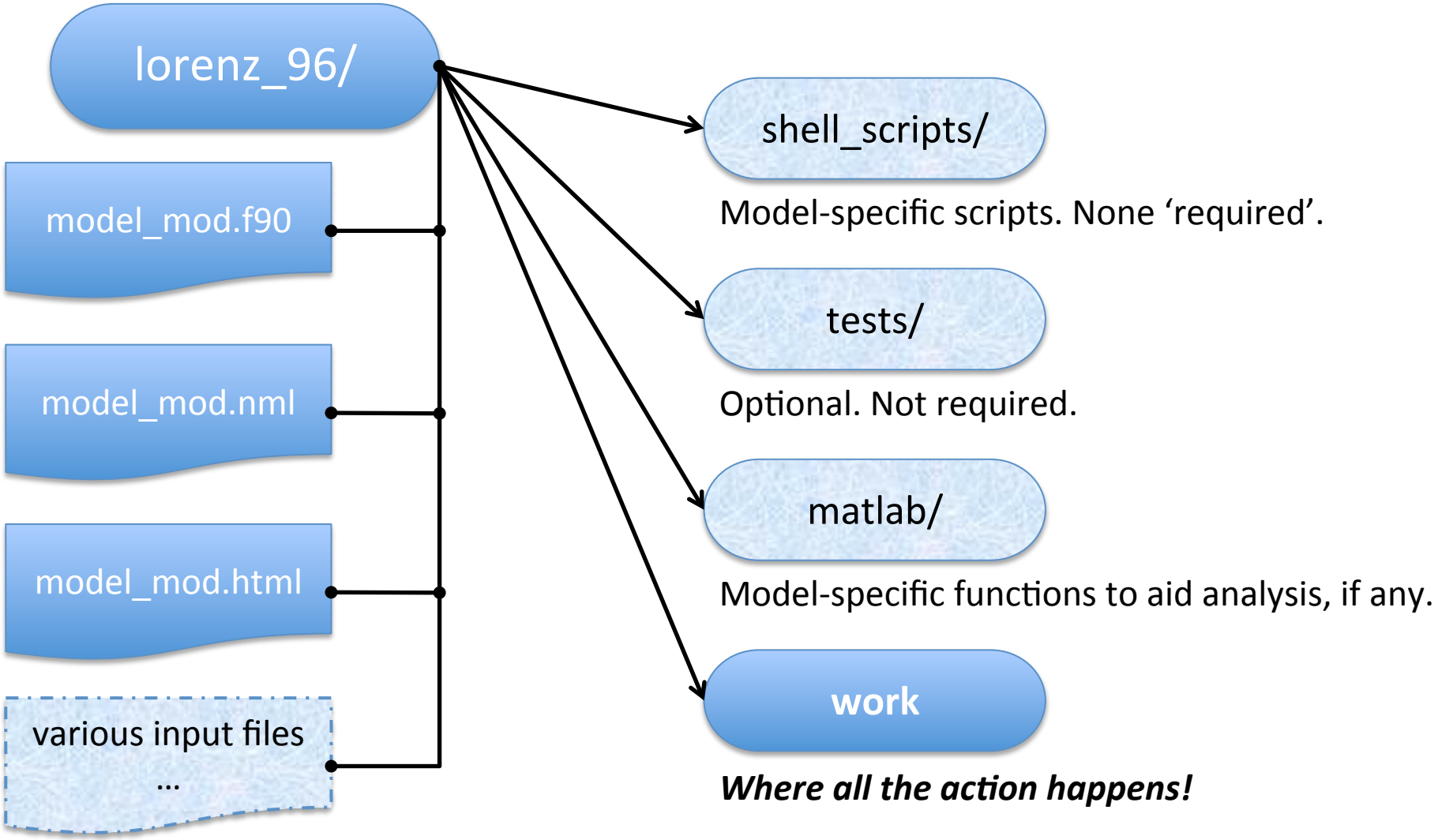
Peruse *your* DART subdirectories!

DART models directory:



Contains a code 'template' for adding new models.

Example DART model directory detail:



Anything with this background is optional.

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. Feel free to take a peek, but no need to understand the details.
obs_seq.out.xxxxxx	Sequence of observations to be assimilated for case xxxxxx

DART module files:

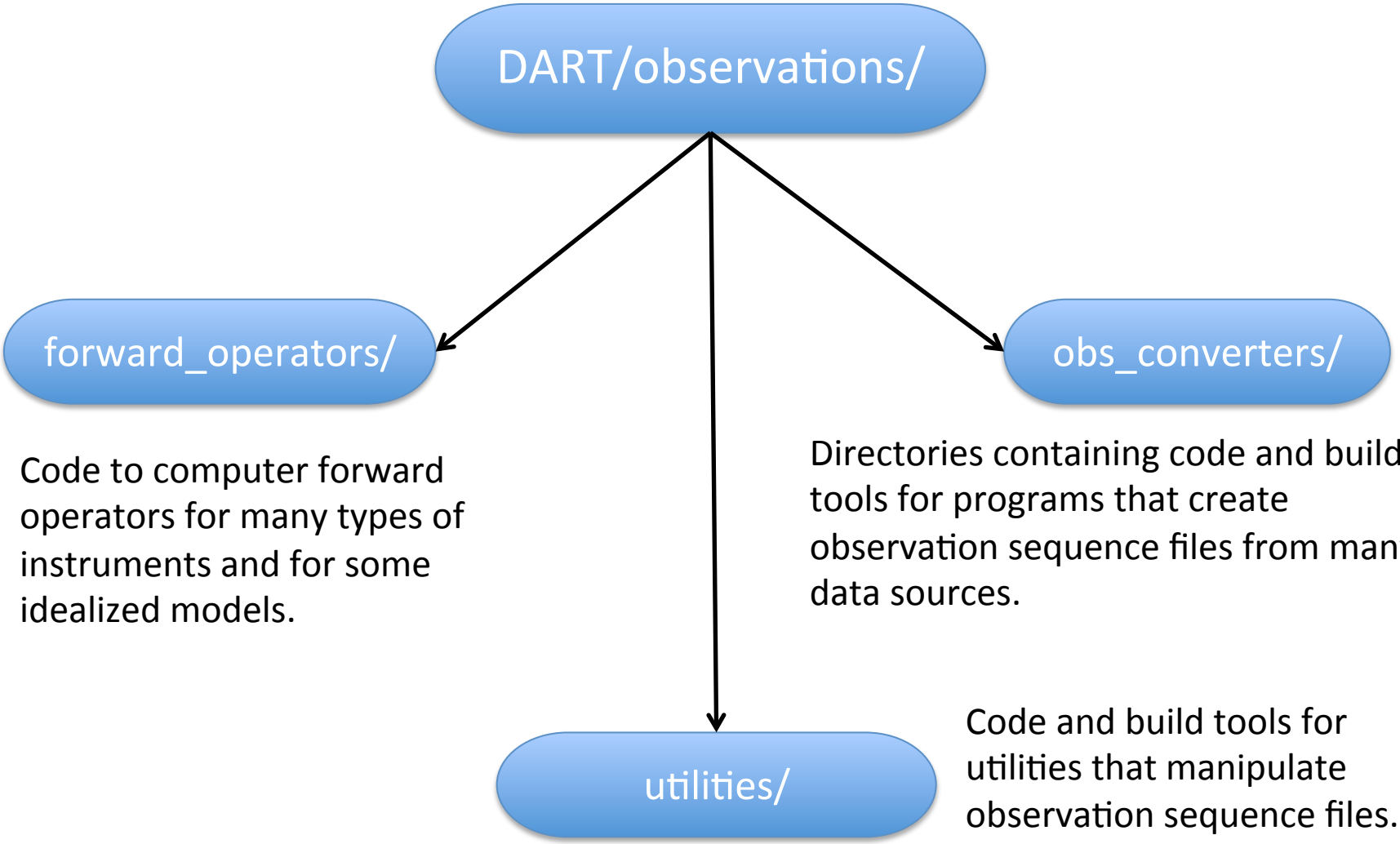
DART Fortran-90 code comes as code, documentation, and run-time control files. For instance, the directory *assimilation_code/modules/assimilation/* contains the following three files that implement localization (more on this later).

Code for module ***cov_cutoff_mod***

Documentation for module

Run-time control for module

DART observations directory:

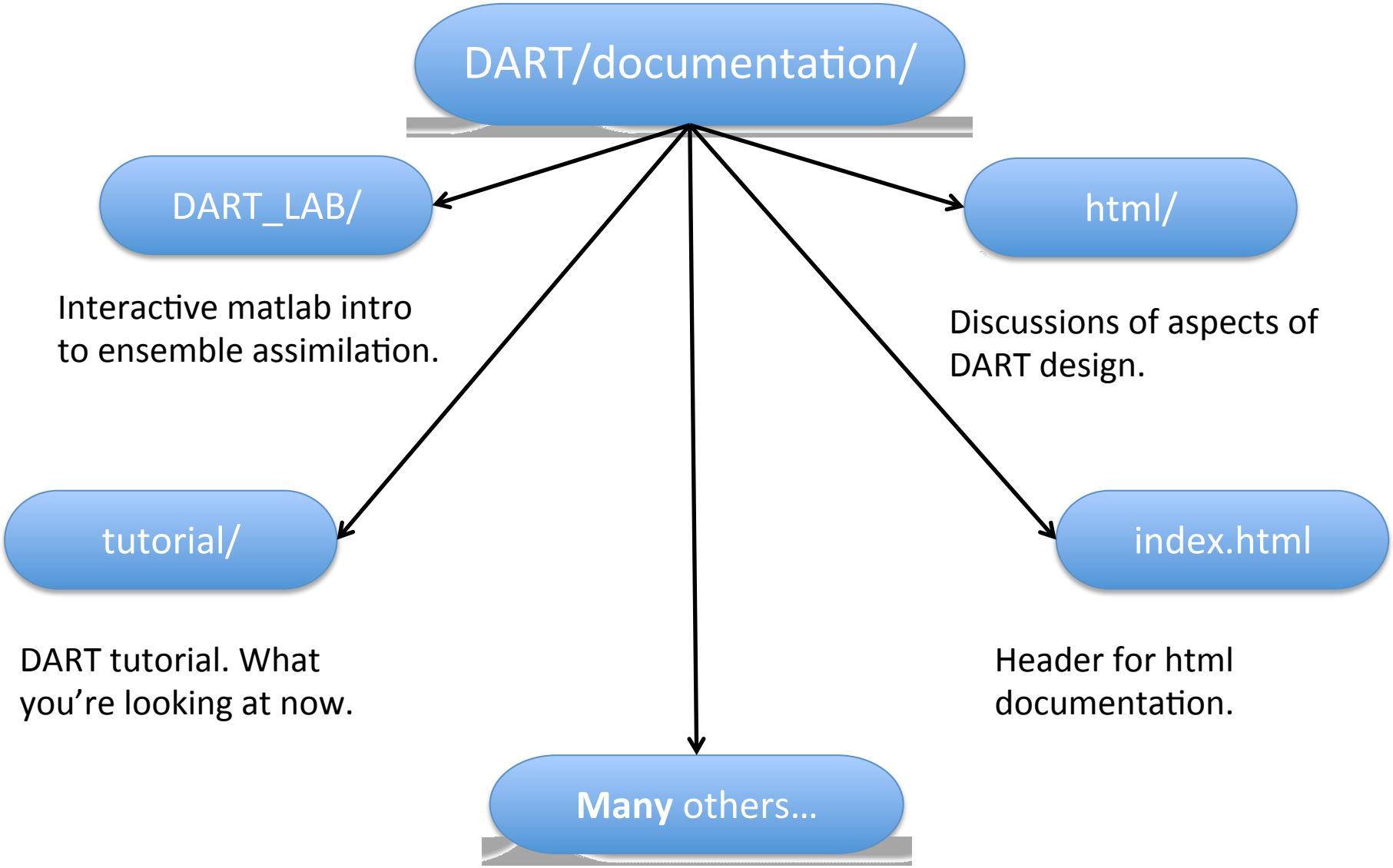


Code to computer forward operators for many types of instruments and for some idealized models.

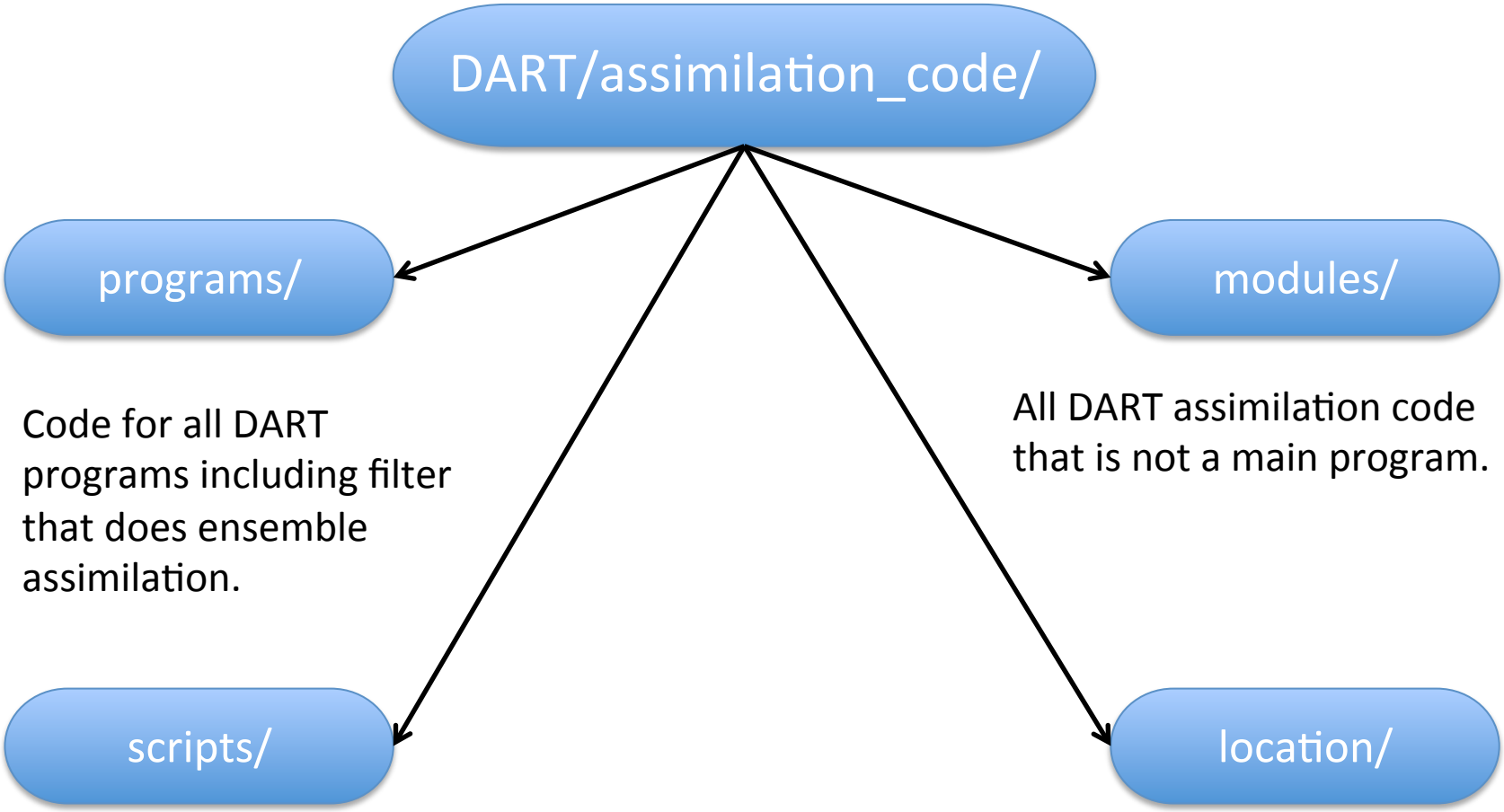
Directories containing code and build tools for programs that create observation sequence files from many data sources.

Code and build tools for utilities that manipulate observation sequence files. Available for low-order models (oned/) and large models (threed_sphere/).

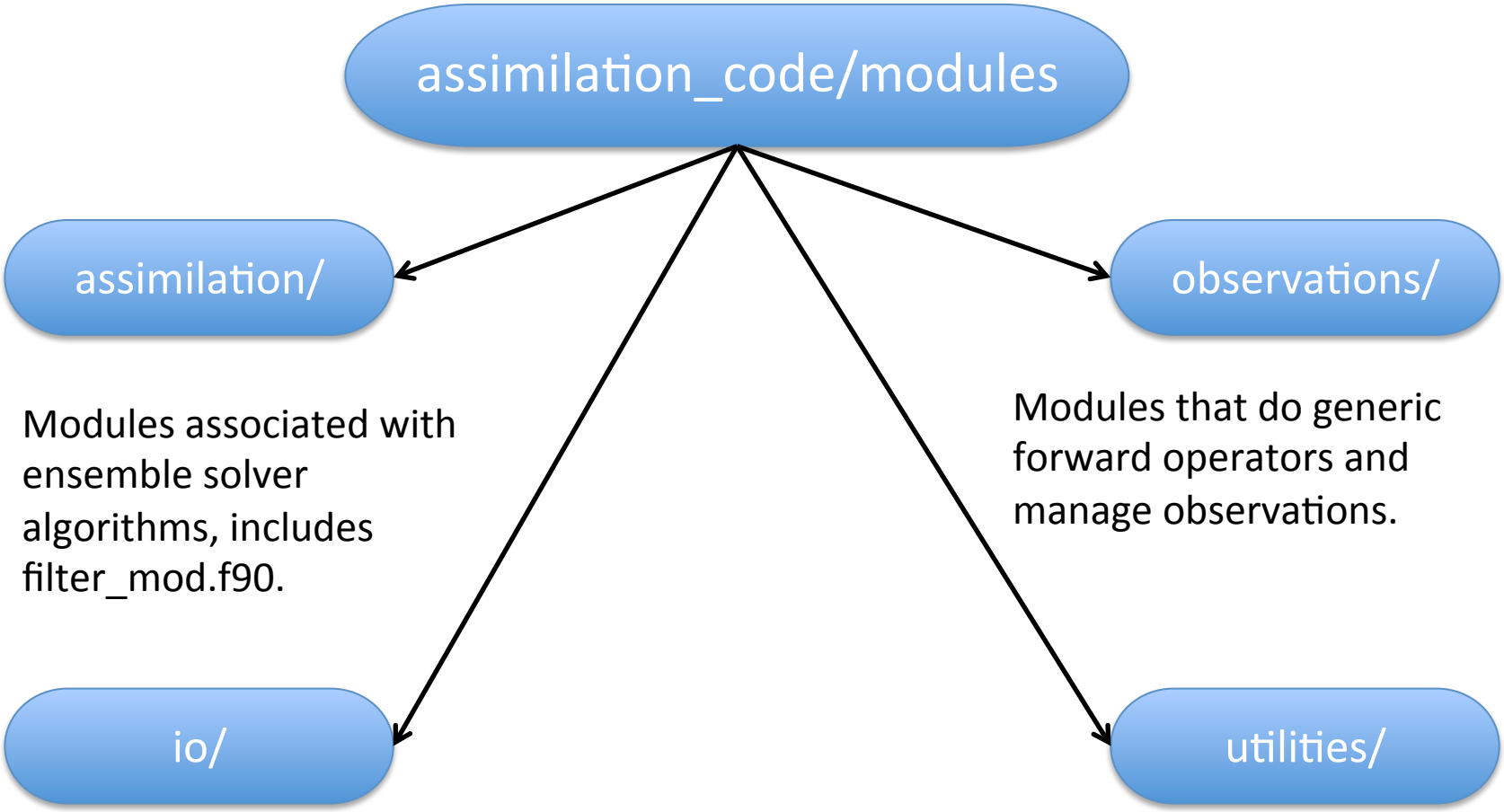
DART documentation directory:



DART assimilation_code/ directory:



DART assimilation_code/modules/ directory:



Coding style:

Look at ensemble adjustment filter observation increment subroutine.

In *assimilation_code/modules/assimilation/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.

DART Tutorial Index to Sections