

WRF-Var/WRF Test Suite Scripts

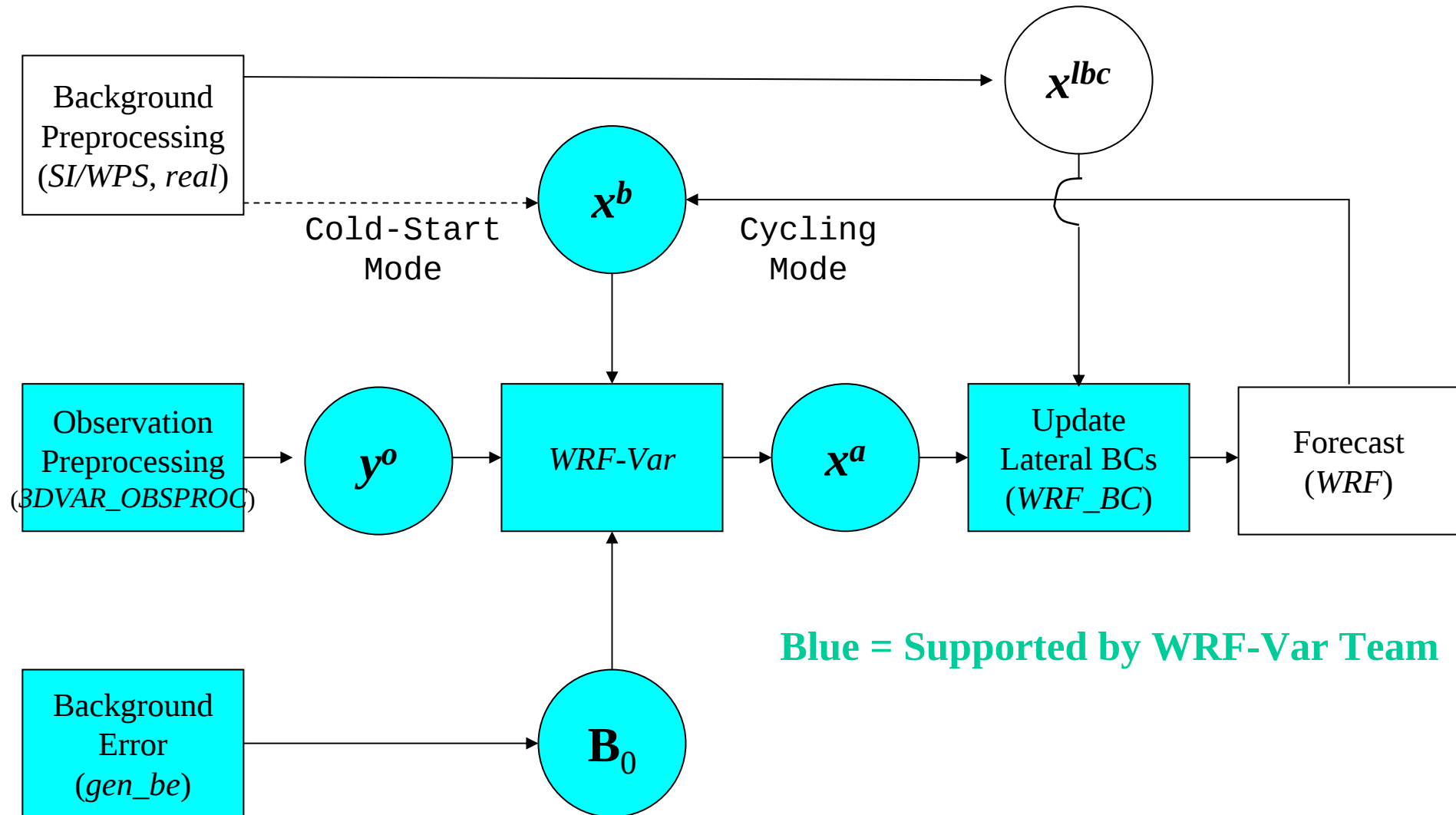
WRF Tutorial Presentation

NCAR, Boulder, Colorado, USA

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WRF-Var in the WRF Modeling System



WRF-Var/WRF Scripts

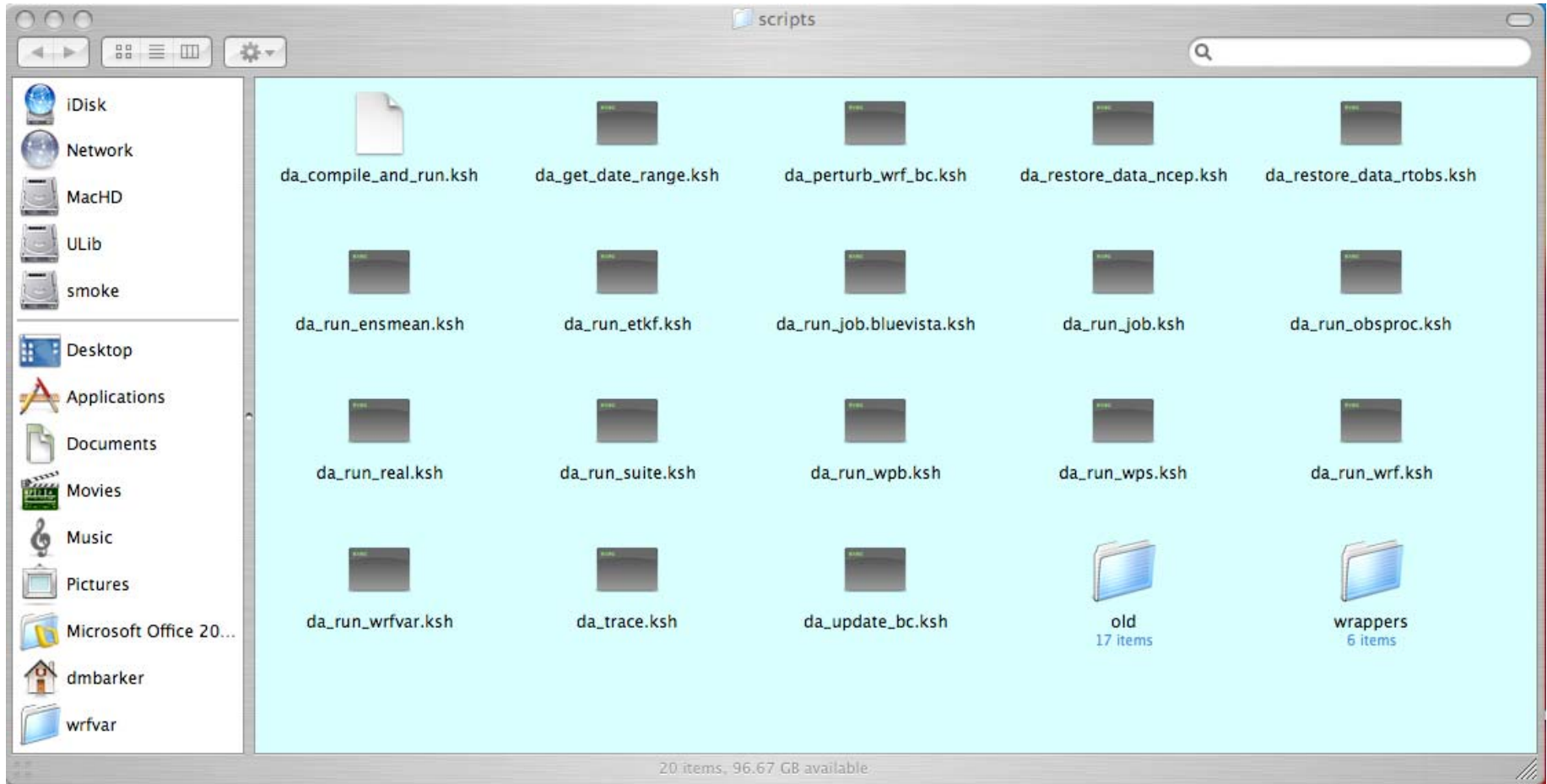
WRF-Var V2.2 includes scripts to tie WRF components together.

Three types of scripts:

- **Building blocks** - Run a particular component of WRF, e.g. run WPS with `da_run_wps.ksh`.
- **Test Suites** - Tie building blocks together for use in end-to-end and extended period tests, e.g. `da_test_suite.ksh`.
- **Suite Wrappers** - Define suite configuration for a particular application (e.g. `da_test_suite_wrapper_afwa.ksh`)

Note: Ideally user should only need to change their suite wrapper.

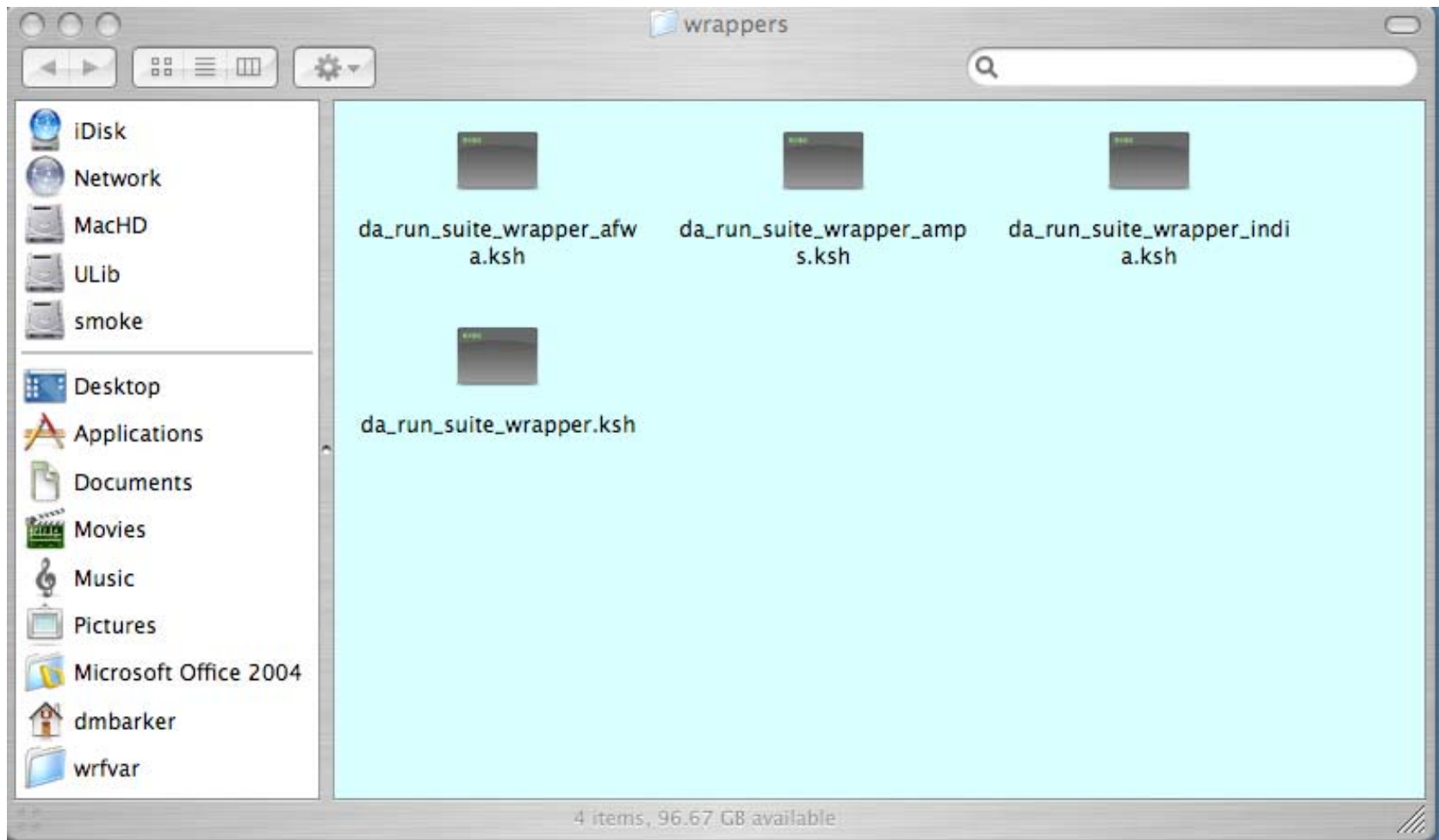
wrfvar/scripts (latest code)



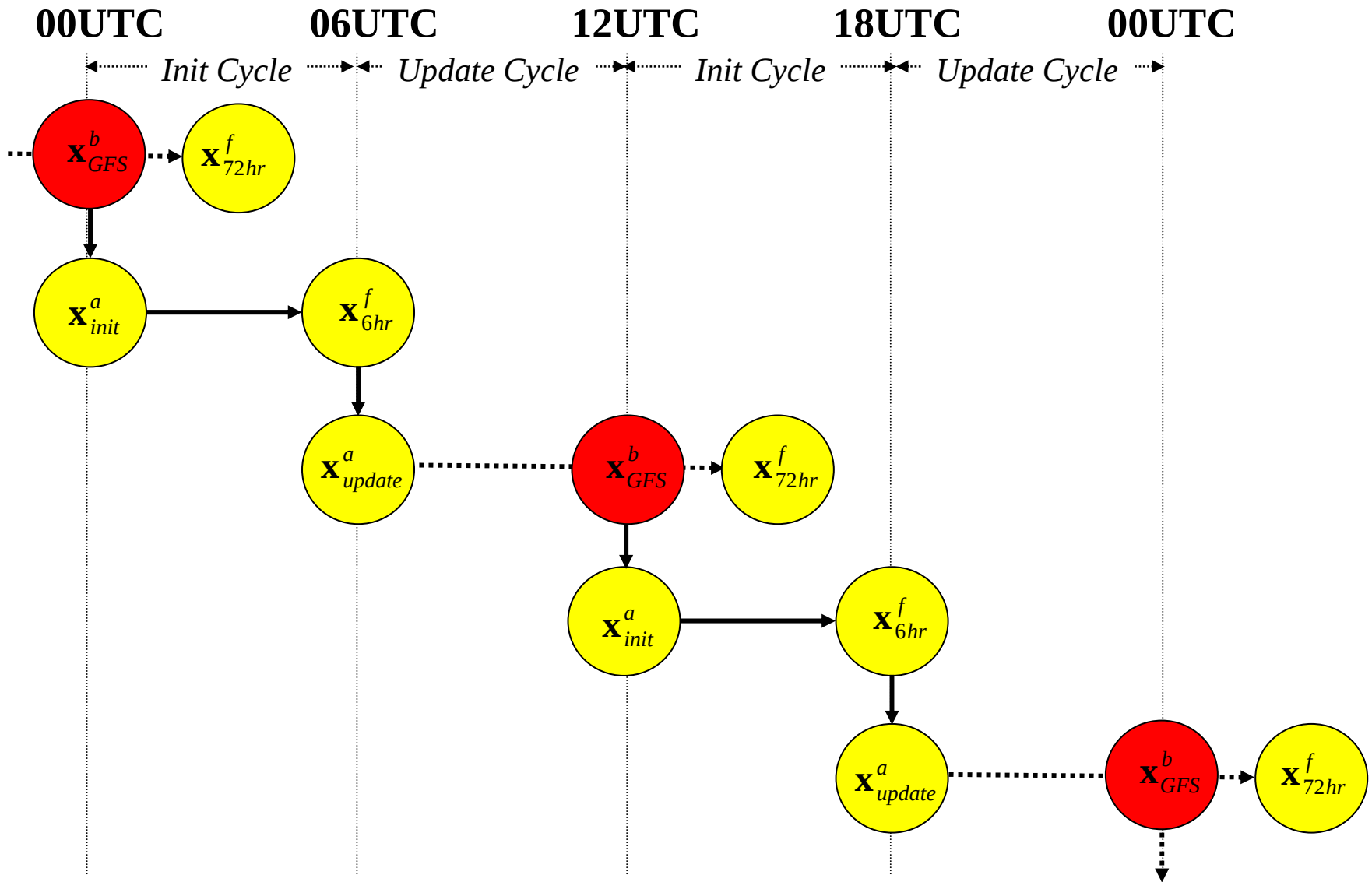
Example: da_run_suite.ksh

- Defines default namelist, directories, run options via environment variables (e.g. export RUN_WRF=true, export NL_DX=200).
- For each time in the sequence (e.g. 2003010100 to 2003012800), optionally run e.g.:
 - da_restore_data_ncep.ksh
 - da_restore_data_rtobs.ksh
 - da_run_wps.ksh (or da_run_wrfsi.ksh)
 - da_run_real.ksh
 - da_run_obsproc.ksh
 - da_run_wrfvar.ksh
 - da_run_update_bc.ksh
 - da_run_wrf.ksh

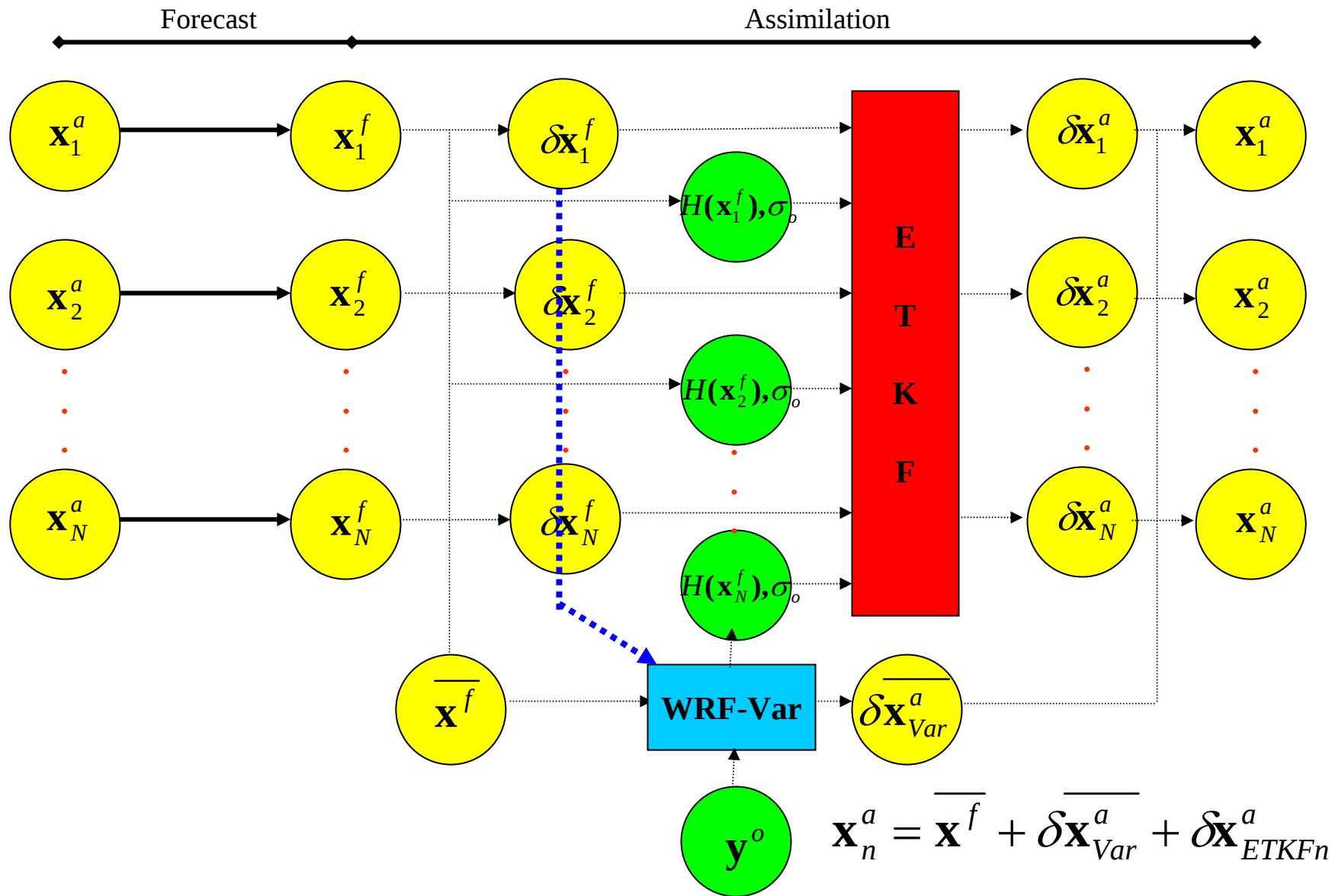
wrfvar/scripts/wrappers (latest code)



Example Wrapper: AFWA Testbed (Update/Init)



Example Wrapper: Coupled WRF/ETKF



Conclusions

- 1) Cycling forecast and assimilation leads to larger impacts (see overview talk).
- 2) Extended period (weeks to months) testing required for real-world NWP.
- 3) Downside is additional complexity and resources.
- 4) WRF-Var V2.2 includes “test suites” to reduce complexity.
- 5) Scripts for running e.g. WPS, OBSPROC, WRF-Var, and WRF included (more TBD).