

Derive_type_info.csv:

col_pp	snl	dz	z	dz_lake	z_lake	lakedepth			
col_es	t_soisno	t_grnd	t_lake	hc_soi	hc_soisno				
col_ef	eflx_snomelt	imelt	errsoi						
col_ws	h2osoi_liq	h2osoi_ice	h2osno	snow_depth	frac_iceold				
col_wf	qflx_snomelt	qflx_snow_melt	qflx_snofrz_l yr	qflx_snofrz					
veg_pp	column								
veg_ef	eflx_sh_grnd	eflx_sh_tot	eflx_soil_grn d	eflx_gnet					
ch4_vars	grnd_ch4_con d_col								
soilstate_v ars	watsat_col	tkmg_col	tkdry_col	tkatu_col	csol_col				
solarabs_ vars	sabg_patch	sabg_lyr_p atch	fsds_nir_d_p atch	fsds_nir_i_p atch	fsr_nir_d_p atch	fsr_nir_i_p atch			
lakestate_ vars	etal_col	lake_raw_c ol	ks_col	ws_col	betaprime_ col	savedtke1 _col	lake_icefrac _col	lake_icethick _col	lakeresist _col

Table format: 1st column: ELM derived datatype (global arrays)

Other columns: name of variables (with the same ELM derived datatype)

Derive_type_detailed_info.xlsx: contains more information about these variables (name, datatype, and dimension)

Source_files_needed.txt: contains F90 files that are used (by makefile) to create a standalone Functional Unit Test (FUT) program for LakeTemperature module.

LakeTemperatureAllLoopVariables.txt: contains a complete list of variables (global and local) used by LakeTemperature module and its callees. This information is used for GPU performance optimization.

LakeTemperatureCallTree.txt: The call-graph

Extra information:

The derive_type_info.csv is used to generate readMod.F90, writeMod.F90, and verificationMod.F90

ReadMod.F90 used by the FUT program (lakeTemperature) to read variables from disks. It has two modes: 1: Read variables for the gricell and subgrid component configuration
2. Read variables used by a given module (e.g. derive_type_info.csv for LakeTemperature)

writeMod.F90 is used by FUT (lakeTemperature) to write variables into files.

verificationMod.F90 is used by FUT to verify the correctness of code implementation.