WRF-Hydro Training

on the Atmosphere

March 18, 2022

SSH session

```
ssh -X username@h.ldt.edu
```

Currently Loaded Modules

```
module list
Currently Loaded Modules:
  1) cmake/3.17.3   2) cuda/11.7.0   3) comp-intel/20.1.0.4.61
  4) libfabric/1.13.0.0.97   5) impi/2021.6.0.602   6) comp-intel/2021.1.0.4.61
  7) hdf5/1.12.0.0.1   8) netcdf/4.7.4.0.1
  9) perl/5.34.0   10) zlib/1.2.11.0.1
  11) pnetcdf/1.12.2.0.1   12) comp-libxml/2.9.10.0.1
  13) nco/5.0.6.0.1   14) gcc/10.2.0.0.1
```

Other Required Modules

```
module load ncview
module load ncurses/6.2
source /home/jamesfarfan/jamesfarfan-h.ldt.bin/profile.d/cmake.sh
```

Environment Modules

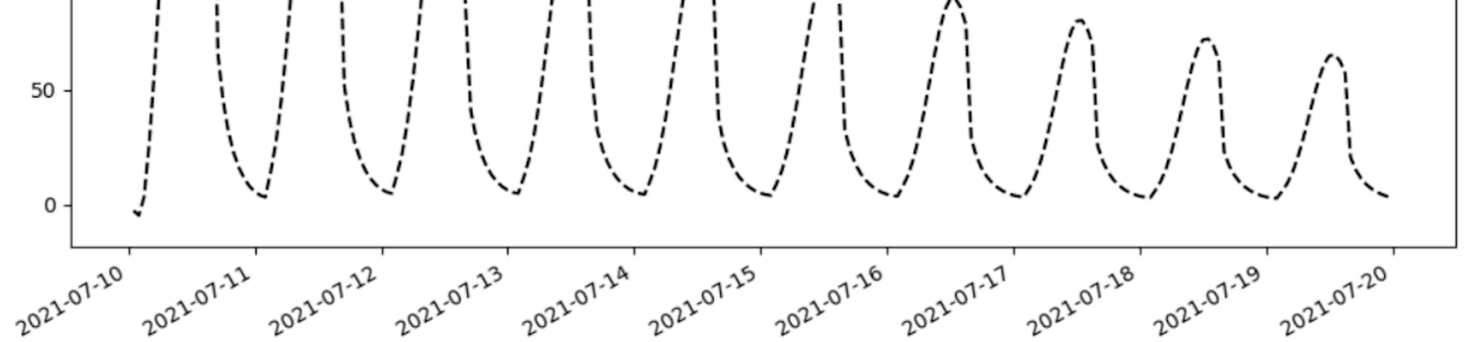
More information: UCAR-ARL/ldt (or RCMS-info page)

• To access third-party libraries are available on the system, please update your $HOME/bashrc as the following below:

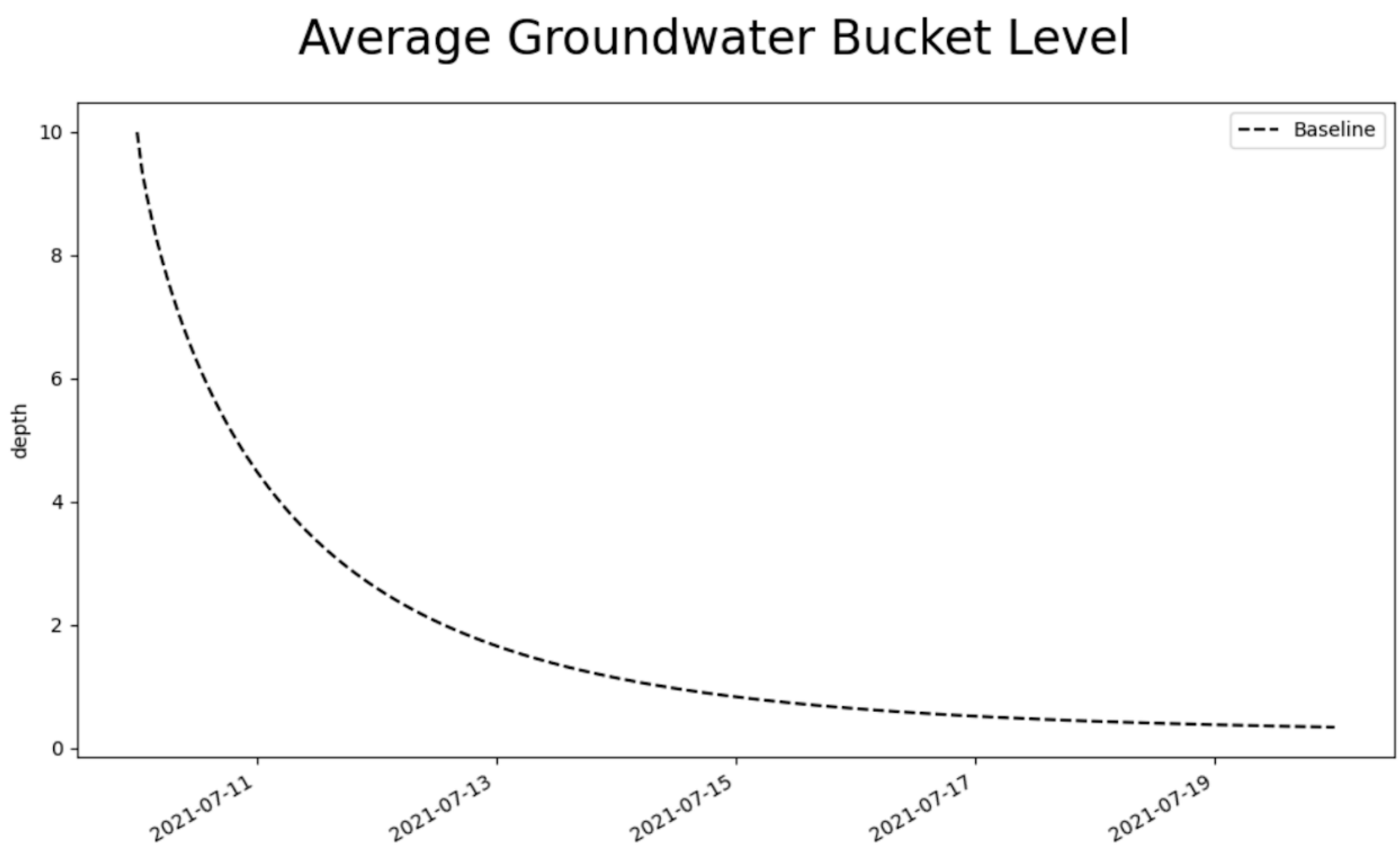
```
export MODULEPATH=/usr/share/lmod/lmod:/...
```

• Substitute **$USER** with your **username**

```
export LDT_DIR=/home/...
export LDT_FIX=/home/...
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:$HOME/...
LIBRARY_PATH=$LIBRARY_PATH:$HOME/...
export NETCDF=/home/...
export NETCDF_LIBDIR=/home/...
export TMPDIR=/home/...
export LD_LIBRARY_PATH=/home/...:$LD_LIBRARY_PATH ( and in "/usr/lib:/usr/lib64:/usr/local/lib:/usr/local/lib64:/usr/local/cuda-11.7/lib64:/usr/local/cuda-11.7/extras/CUPTI/lib64:/usr/local/cuda-11.7/lib:/home/...:/home/...:/home/...
```



Groundwater storage (baseline)

 # Calculate the mean bucket level across the domain

```
gwbucket_base = xr.open_mfdataset('./baseline/*GWOUT*',combine='by_coords')
gwlevel_base_avg = gwbucket_base.depth.mean(dim=('feature_id'))
fig, axes = plt.subplots(ncols=1,figsize=(12, 6))
plt.suptitle('Average Groundwater Bucket Level',fontsize=24)
gwlevel_base_avg.plot(label='Baseline', color='black', linestyle='--')
plt.legend()
plt.show()
```