Note:
The source code directory that came with this document is meant to run on the Bishop cluster. It may not compile or run on other system.

New DHSVM Features:

Random values:

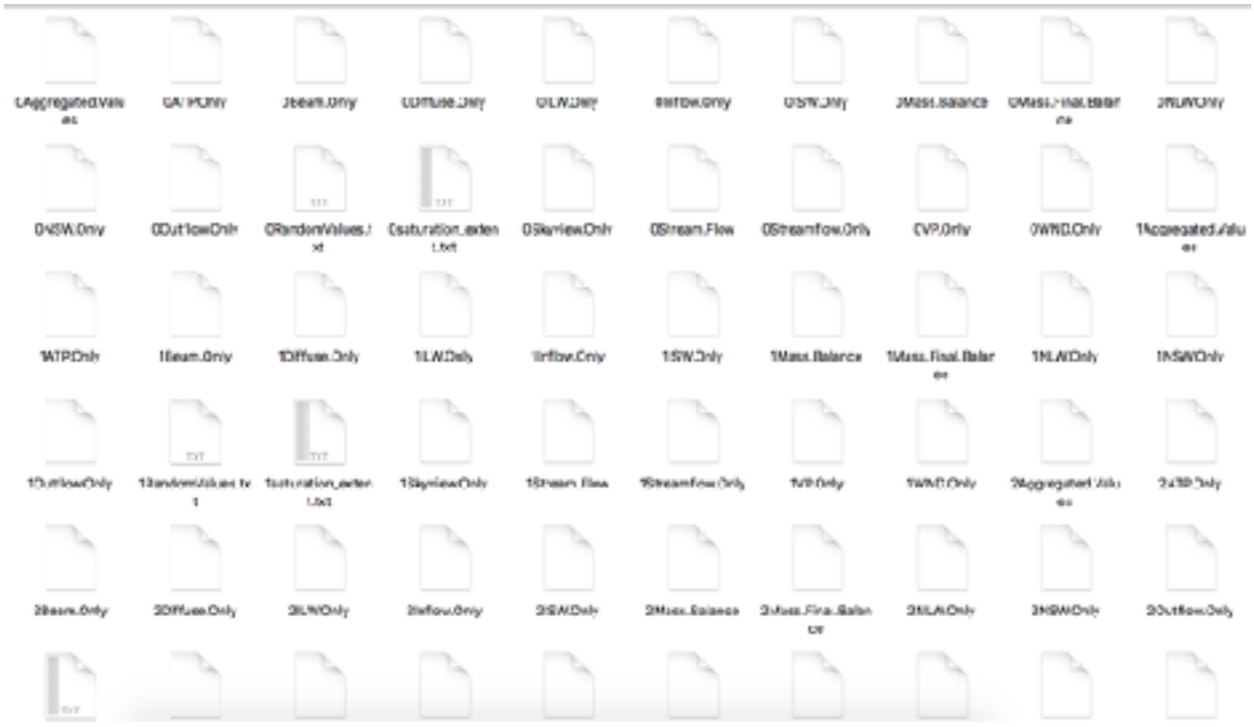
Any number value in the config file for DHSVM can now be replaced with <lowerBound-upperBound> and DHSVM will inclusively choose a number between the two. At the end of a DHSVM run there will be a new output file called RandomValues.txt that contains a list of all the ran.

For example in the config file you can have:
Ground Roughness = <0.02-0.05> # Roughness of soil surface (m)

And the RandomValues.txt for the run contains:
GROUND ROUGHNESS: 0.027944

Multiple runs:

DHSVM can now be given a requested number of runs, and it will continue to run model simulations until you it has met the requested number. The out folder will still look the same, except every file will contain a number on the front of it to say which model run it belongs to. Like so:



How to use on Bishop:

Running on bishops is pretty easy. The process has been boiled down to a couple of files for you to use.

How to compile:

Navigate to your sourcecode directory. Now run the command ‘./bishopCompile.sh’. This script will take care of everything needed to compile on the Bishop cluster.

How to run DHSVM:

Firstly, in the sourcecode directory you will need to edit dhsvm.sbatch. It has to values you will need to change:

NUM_RUNS=4
INPUT_FILE=“../INPUT.Mercer.3.1.2_Bin"

Simply set NUM_RUNS to how many times you want DHSVM to run, and INPUT_FILE to the name/location of your input file.

After that simply run ‘./runDHSVM.sh’. This script will submit the job to be ran on the bishop cluster. After the job is submitted there are some useful commands you can use to check the status of your job. (Bishop command reference: https://aero.calpoly.edu/technology/high-performance-computing/bishop-hpc-cluster/how-to/use-slurm/)

‘squeue -u <username> -t RUNNING’ will show you the status of the job as it runs.

‘scontrol show jobid -dd <jobid>’ will give you a detailed readout about what is going on with the job.

From my initial testing DHSVM takes about 20-25 minutes to run four instances. The bishop work queue has a maximum run time of 12 hours for a program. If you end up wanting to try a ton of runs that would take longer than that let me know and we can see about switching the work queue to one that will allow a 1 day or 30 day run time.

Let me know if you have any issues!