SWATShare – A Portal for Sharing, Publishing, and Running SWAT Model using XSEDE Resources

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Based on HUBzero technology at Purdue, WaterHUB uses open source packages to create an environment in which researchers, educators, and students can access tools and share information.

Think of WaterHUB as Facebook for hydrologists.
SWATShare

- One of the tools on WaterHUB
- SWATShare enables
  - Searching for existing SWAT models on WaterHUB
  - Downloading of previously created SWAT models and their outputs by the community
  - Publishing and sharing of your own SWAT models with the community
  - Execution of single or multiple normal, sensitivity analysis and calibration runs
  - Visualization of outputs
- Everything is enabled by using XSEDE resources
Why SWATShare?

• Saves time and money
• Facilitates collaboration among all users
• Can bring rewards and recognition in the form of publications and community access
• Provides a platform for your model repository
• May provide avenue to keep your models updated by other users
• Provides access to HPC resources for your SWAT models
SWATShare Demo

www.water-hub.org/swatshare
Users can download only their **own model** and a **shared model** with associated output files.

The uploaded models are displayed in 3 groups:

(i) **My Models**: models that are uploaded by the current user
(ii) **Shared Models**: models that are uploaded by other users, but are shared with all users
(iii) **Other models**: models that are uploaded by other users but not shared

**H2HUB**
If a user wants to share the model with others, the ‘Shared’ box must be checked.

- Simulation time step (daily/ monthly/ yearly) needs to be the same as the file.cio variable IPRINT
- IPRINT = 0 (monthly), 1 (daily), 2 (yearly)

- User can select the required simulation type
- Must be compatible with ICLB flag in file.cio of the TxtInOut
- ICLB = 0 (normal), 1 (sensitivity), 2 (auto-calibration)

Contents of the zip folder:

- WabashRiver: ESRI ArcMap Document, 4,618 KB
Select any model from My Model section. Related information will show up in left panel.

Manually edit or replace information including the model input file. Click on Change.

The Reset button will restore all the original information previously saved.
A user can **download** a shared model, but can **run** only the models in **My Model** section.

SWATShare selects run option (normal/sensitivity/calibration) depending on model’s file.cio and information provided in the Upload interface.

Selecting a model and clicking the **Run** button will submit the model to run on one of the XSEDE clusters.

The model run may start immediately or it may be dispatched in a job queue waiting to be executed on the cluster.

**Failed** status can show up mainly due to lack of required files in the uploaded zip folder.
Visualization for (i) output.std, (ii) output.sub and (iii) output.rch

- One variable at a time needs to be selected to produce the visual plot
- All plots in `output.rch` and `output.sub` correspond to outputs at the watershed outlet
Thank you!

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