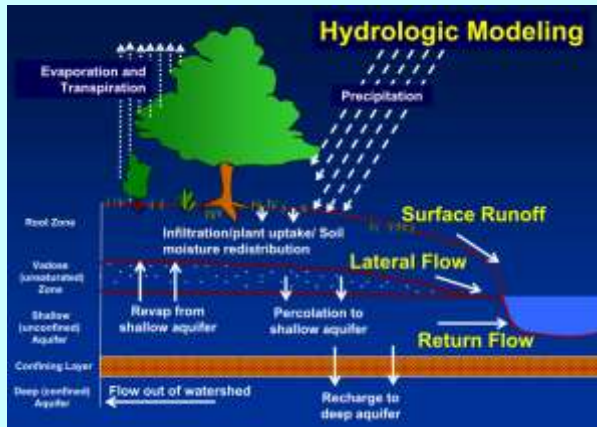


TRAINING COURSE
ON
HYDROLOGIC MODELLING
USING SWAT
(MAY 20 - 31, 2019)



Organized by

National Institute of Hydrology
Jal Vigyan Bhawan, Roorkee - 247 667
Uttarakhand, India

Introduction

SWAT, a river basin or watershed scale model, is a physically based, spatially distributed, continuous model that operates on a daily time step. It is a product of four decades of modeling efforts by USDA-ARS, USDA-NRCS and Texas A&M University. It was developed to predict the impact of land management practices on water, sediment and agricultural chemical yields in large complex watersheds with varying soils, land use and management conditions over long periods of time. It can incorporate the effects of tanks and the reservoirs/check dams off-stream as well as on-stream. The major advantage of SWAT is that it does not require much calibration and therefore can be used on ungauged watersheds, can predict relative impacts of alternative scenarios such as changes in management practices, climate and vegetation on water quality and quantity. Model output includes all water balance components at the level of each watershed and is available at daily, monthly or annual time steps. SWAT model has been extensively used to address water resources and nonpoint-source pollution problems for a range of scales and environmental conditions across the globe.

SWAT typically uses the ArcSWAT interface to create its inputs that works in the licensed ArcGIS environment. The Quantum GIS (QGIS) is a free and open source GIS that performs most GIS functions as in commercial GIS. Given its robustness and wide use in academic and professional environments, the present training course will be conducted using QSWAT, a QGIS interface for SWAT model.

The training course is intended to introduce participants to QGIS and SWAT model, mandatory and optional inputs to the model,

preparation of data base and set up of SWAT using QSWAT interface. The course will also cover advanced topics including sensitivity analysis, model calibration, validation and uncertainty analysis using SWAT 2012 version.

Course Structure

The course is designed for two weeks duration. The first week shall be devoted to SWAT set up including spatial and non-spatial data preparation, data input, model execution, and visualization and interpretation of results using QGIS interface. Second week will be devoted for SWATCUP.

The Course will consist of lectures supported by hands-on sessions on computers to cover both theory and practice in right proportion. The course will be conducted as a two-way interaction with the participants so that the problems and experiences of participants from the academia as well as field organizations are shared. Broadly, following topics shall be covered in the course:

- Basics of RS and GIS;
- Introduction to QGIS;
- Data requirement of SWAT;
- Hands-on sessions for preparing spatial datasets for SWAT using RS and QGIS;
- SWAT theory and model applications;
- Preparation of non-spatial data;
- Introduction to QSWAT interface; model set up;
- Sensitivity, calibration/validation and uncertainty analysis using SWATCUP;
- Visualization and interpretation of SWAT outputs.

By the end of the course, the participants are expected to use the model at their own.

Participants

The course is intended for professionals (engineers, scientists and academicians) actively working in water resources sector, especially those involved in using simulation models for water management. PG students and research scholars are encouraged to attend the course.

Registration

The registration fee per participant including GST is **Rs. 20,000/- for private organizations and individuals; Rs. 15,000/- for Govt. Deptts./ PSUs, and Rs. 10,000/- for bonafide students.** The fee includes the registration, course material, working lunch on all working days, tea during sessions, and one course dinner. The stay arrangements on twin sharing basis will be made in NIH guest house on payment basis as per Institute rates. The participants will have to arrange for TA/DA from their own organization. A certificate will be given to all participants.

The intending participants are requested to register themselves by filling and mailing the attached registration form **along with the proof of online payment of registration fee latest by 5th May, 2019.** The registration fee has to be transferred online to the following bank account.

Name of account: NIH Project
Savings bank account no.: 4044000100174852
Name of bank: Punjab National Bank
Name of bank branch: IIT Roorkee
IFC Code: PUNB0404400
MICR Code: 247024103

The seats are limited to 30 participants. The registration shall be done on the first come first served basis after the registration fees has been paid.

Venue

The venue of the course shall be NIH, Roorkee. NIH, an autonomous society under the Ministry of Water Resources, Ganga Rejuvenation and River Development, Govt. of India, is the premier research institute in the country in the field of hydrology. The Institute has organized a number of training courses on different aspects of hydrology at Roorkee and other places in India. For more details please visit nihroorkee.gov.in.

Roorkee is a medium-sized town of Uttarakhand State and it is well connected by road & rail from Delhi, Dehradun and Chandigarh. The weather conditions in Roorkee are hot in May.

All correspondence related to the course may be addressed to:

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Registration Form

Training Course On HYDROLOGICAL MODELLING USING SWAT

(May 20 - 31, 2019)

National Institute of Hydrology, Roorkee

Name & Designation:.....

Name of Deptt./ Organisation:.....

Address:.....

Tel. No./Fax:.....

Email:.....

Qualification:.....

Field of Specialisation:.....

Experience:.....

Registration fee of Rs. transferred on(date) (please email the proof/details of the online fee transfer along with this form).

(Signature of Candidate)

SPONSORSHIP CERTIFICATE

Certified that Mr./Ms./Dr. has been officially deputed for the above mentioned training course to be conducted by NIH, Roorkee.

Signature of Sponsoring Authority
with Office Seal and Date