

The Japanese Society of Irrigation, Drainage and Rural Engineering, HYDRUS Group
and
Soil Water Japan

organize

HYDRUS Workshop in Tokyo

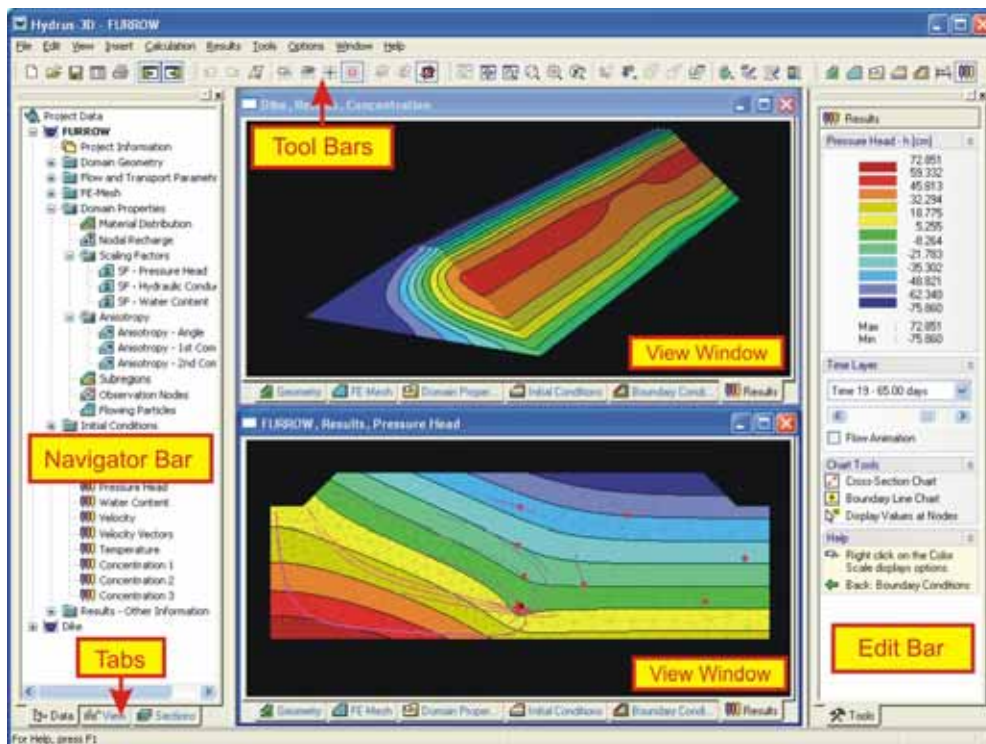
June 28th 2008

*Advanced Modeling of Water Flow and Contaminant Transport in Porous Media
Using HYDRUS Software Packages*

&

HYDRUS Short Course in Tokyo

June 26th -27th, and 29th, 2008



<http://www.za.ztv.ne.jp/jfg64yus/HYDRUS>

Email: soilwater at za.ztv.ne.jp

HYDRUS Workshop in Tokyo

June 28, 2008

Advanced Modeling of Water Flow and Contaminant Transport in Porous Media Using HYDRUS

Reliable modeling of water flow and solute transport through the vadose zone is extremely important as the vadose zone recharges water resources such as groundwater and rivers, serves as a buffer and filter for contaminants, and supports agricultural activities. Numerical modeling is a key tool for analyzing complex physical, chemical, and biological processes in the vadose zone. The HYDRUS software that simulates numerically water and solute movement in soils has received increasing attention worldwide over the last decade because of its flexibility and versatility. This workshop provides all current and future HYDRUS users, such as researchers, practitioners, and students, in various disciplines, opportunity to present and discuss their applications in research, management, and education. It also provides rare opportunity to discuss future modeling needs directly with HYDRUS developers.

The workshop, the very first workshop held in Eastern Asia, will be held at the University of Tokyo on 28 June, 2008. The workshop is organized by the HYDRUS group of JSIDRE. Both oral and poster presentations (preferably in English) are welcome. The workshop proceeding consisting of reports (2 to 8 pages) of the various HYDRUS applications will be published. The deadline for submitting your contribution is June 14, 2008. The template and instruction will be provided after the registration is made. When submitting, please include a title, the authors involved (underline the name of the person giving the presentation), and their affiliations. Contributions will be accepted also from those who are not able to attend the workshop. Feel free to forward this information to anyone who may be interested in the workshop. We hope to see you all in Tokyo soon!

Workshop location: Lecture Hall 1 in 2 Go-Kan (2nd floor) at University of Tokyo, Faculty of Agriculture. For directions and more information, please visit

<http://www.a.u-tokyo.ac.jp/english/campus.html>

Registration: Please send <Name/Affiliation/Email> to the organizer via e-mail by June 14, 2008.

Registration fees: 2000 JPY (Registration includes: proceedings, coffee breaks, refreshments.). The registration fee for those who will be taking the short course will be free.

Title submissions: Both oral and poster presenters need to submit their titles. The deadline to submit the title is June 7, 2008 (the deadline to submit the proceedings paper is June 14, 2008).

Schedule

8:30 ~ Registration

9:00 ~ 9:45 Keynote lecture : **Jirka Simunek** (University of California, Riverside)

New features and new developments in HYDRUS software packages

9:45 ~ 10:30 Keynote lecture : **Tsuyoshi Miyazaki** (University of Tokyo)

Trends in Soil Physics and Soil Hydrology Related to Surface Zone Sciences

10:30 ~ 10:40 Break

10:40 ~ 12:00 Oral session

Kunio Watanabe (Mie University) Water and heat flow in a directionally frozen silty soil

Hirozumi Watanabe (Tokyo University of Agriculture & Technology) Simulation of fate and transport of pretilachlor in a rice paddy by PCPF-SWMS model

Haruyuki Fujimaki (University of Tsukuba) Determination of irrigation amounts using a numerical model

Yijian Zeng (China University of Geosciences) The Study of Diurnal Soil Water Dynamics in Coarse Sand with Modified HYDRUS1D Code

12:00 ~ 13:10 Lunchtime

13:10 ~ 13:40 Lecture : **Jirka Simunek** (University of California, Riverside)

A new modeling approach of plant root water and nutrient uptake

13:40 ~ 14:20 Oral session

Masaru Sakai (University of California, Riverside) Surface Boundary Conditions from Meteorological Data Using HYDRUS-1D

Kimihito Nakamura (Kyoto University) Applications and Problems of Numerical Modeling of Nitrogen Transport in Agricultural Soils Using HYDRUS

14:20 ~ 14:30 Break

14:30 ~ 16:00 Brief introductions by poster presenters (5 minutes per person)

16:00 ~ 18:00 Poster Session

18:30 ~ Happy hour

List of the poster presenters

P1) **Chamindu, D.T.K.K** (Saitama University)

Transport and retention of colloid-sized materials in saturated porous media: Experimental and numerical analysis.

- P2) **Rieko Urakawa** (Tokyo University of Agriculture & Technology)
Effects of NO₃- adsorption characteristics by subsoil on long-term NO₃- leaching from the forest watershed.
- P3) **Chihiro Kato** (University of Tokyo)
Fluctuation of Salt Content of Maize Field in Northwest China under Repetitious Border Irrigation.
- P4) **Afshin GHAHRAMANI** (Tokyo University of Agriculture & Technology)
1D simulation of soil flux movement in a steep slope for a typhoon.
- P5) **Koji Inosako** (Tottori University)
Analysis of Water Movement in a Wick Sampler Using HYDRUS-2D Code.
- P6) **Tetsuo Yasutaka** (Kokusai Environmental Solutions Co., Ltd.)
Risk assessment of soil and groundwater contamination using HYDRUS-1D
- P7) **Mitsuhiro Inoue** (Tottori University)
Determination of soil hydraulic properties of undisturbed core sample using continuous suction outflow method.
- P9) **Andry Henintsoa Ravolonantenaina** (Tottori University)
Inverse Estimation of Clay Soil Unsaturated Hydraulic Conductivity Treated with Organic Material by Multistep Outflow Method
- P10) **Kaoru Inaba** (Takenaka Corporation)
Integrated Modeling of Watershed Hydrologic Fluid and Heat Flows.
- P11) **Masaru Sakai** (University of California, Riverside)
Estimating Hydraulic Property for a Dune Sand and a Volcanic Ash Soil Using Evaporation Method.
- P12) **Chen Daiwen** (Mie University)
Calcium hydroxide leaching through a well-buffered volcanic-ash soil with pH dependent charges .
- P13) **Anurudda Karunarathna** (Saitama University)
Development of a Predictive Expression for Soil Water Repellency Curve Based on Soil Organic Carbon Content.
- P14) **Taku Nishimura** (University of Tokyo)
Water and Salt Behavior in Maize Field under repeating boarder irrigation at Gansu province, China.
- P15) **Yuhei Hirono** (National Institute of Vegetable and Tea Science)
Modeling of water and nitrogen transport in tea fields.
- P16) **Tadaomi Saito** (Tottori University)
Simulation of soil water movement in a water harvesting system with sand ditches.

HYDRUS Short Course in Tokyo

June 26-27, 2008

“Modeling Water Flow and Contaminant Transport in Soils and Groundwater using the HYDRUS software package”

Objectives: The course begins with a detailed conceptual and mathematical description of water flow and solute transport processes in the vadose zone, followed by a brief overview of the use of finite element techniques for solving the governing flow and transport equations. Special attention is given to the highly nonlinear nature of the governing flow equation.

"Hands-on" computer sessions will provide participants an opportunity to become familiar with the Windows-based RETC, STANMOD, HYDRUS-1D and HYDRUS (2D/3D) software packages. Emphasis will be on the preparation of input data for a variety of applications, including flow and transport in a vadose zone, subsurface drip irrigation, variably-saturated flow in a transect with a stream, and flow and transport to a tile drain. Calibration will be discussed and demonstrated by means of both one- and two-dimensional inverse problems.

Instructors

- Dr. Jirka Simunek is a Professor of Hydrology with the Department of Environmental Sciences of the University of California. His expertise is in numerical modeling of subsurface water flow and solute transport processes and inverse procedures for estimating the hydraulic properties of unsaturated porous media. He has authored and coauthored over 150 peer-reviewed publications and over 20 book chapters. His numeric models are used by virtually all scientists, students, and practitioners modeling water flow, chemical movement, and heat transport through variably saturated soils.
- Japanese translation will be given by Dr. Toride (Mie U), Dr. Saito (TUAT), Dr. Nishimura (U. Tokyo), and Dr. Sakai (UCR)

Course location: Lecture Hall, Building 2, Tokyo University of Agriculture & Technology, Faculty of Agriculture, Fuchu, Tokyo, Japan (http://www.tuat.ac.jp/english/about/images/f_map2.pdf)

Tentative schedule: The courses will be held 9:00 -16:00 each day.

Registration: Please send <Name/Affiliation/Email> to the organizer via e-mail by June 14, 2008.

Registration fees: 30,000 JPY (20,000 JPY for students). Registration includes: course materials, refreshments, and registration for the workshop. The instruction for payment will be sent to you from the organizer after registration is made.

Please bring your own Windows laptop to the course. There is no need to buy the software prior to the class.

Advanced HYDRUS Short Course in Tokyo

June 29, 2008

Overview: The course covers advanced topics, such as HP1 (coupled HYDRUS-1D with PHREEQC) and 3D modeling, which are usually not taught in regular short courses. Details will be announced later. We expect that all participants of the advanced course are familiar with HYDRUS or other numerical simulation programs.

Instructors

- Dr. Jirka Simunek
- Japanese translation will be given

Workshop location: Lecture Hall 114 in Bldg. 7 at University of Tokyo, Faculty of Agriculture. For directions and more information, please visit <http://www.a.u-tokyo.ac.jp/english/campus.html>

Tentative schedule: 9:00 - 17:00

Registration: Please send <Name/Affiliation/Email> to the organizer via e-mail by June 14, 2008.

Registration fees: TBD

Please bring your own Windows laptop to the course. There is no need to buy the software prior to the class.

Accommodation in Tokyo

We cannot offer special rates for participants of the HYDRUS short course and workshop at this point. There is a number of hotels in Tokyo from where you can commute easily to TUAT and U-Tokyo by taking public transportation. If you need help to reserve the room, please contact us.

Contact:

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If cancellations are made before June 21st 2008, the tuition fee will be refunded for all events.