



Announcement of the PHITS Tutorial in Malaysia 2023

Place: Malaysian Nuclear Agency (Agensi Nuklear Malaysia), 43000 Kajang, Bangi
<http://www.nuclearmalaysia.gov.my/>

Eligibility for participation: None (Open to everybody¹)

Course date: Mar. 13-17, 2023

Deadline for registration: Jan. 31, 2023 for new PHITS users
Feb. 28, 2023 for registered PHITS users

Registration Fee: Free (Lunch & refreshment/coffee break provided)

Language: English

Course contents: Beginner course (Basic + advanced lectures) or
Intermediate course (Hands-on session + advanced lectures)

Maximum number of participants: 30 (accepted in order of registration)

Lecturer: Dr. Tatsuhiko Sato (Japan Atomic Energy Agency), Japan
Dr. Hiroshi Iwase (High Energy Accelerator Organization, KEK) Japan

Local organizer: Dr. Leo Kwee Wah (Malaysian Nuclear Agency)
Dr. Mohd Faiz bin Mohd Zin (Malaysian Nuclear Agency)

PHITS is a general-purpose Monte Carlo particle transport simulation code developed under collaboration between Japan Atomic Energy Agency (JAEA) and several institutes all over the world. It can deal with the transport of nearly all particles over wide energy ranges, using several nuclear reaction models and nuclear data libraries. PHITS can support your researches in the fields of accelerator technology, radiotherapy, space radiation, and in many other fields which are related to particle and heavy ion transport phenomena. See PHITS website in more detail. (<http://phits.jaea.go.jp>)

If you would like to attend the course, you have to obtain the PHITS license in prior to the course. It is free of charge, and the instruction to get the license is given below (<https://phits.jaea.go.jp/howtoget.html>). It takes approximately a month for the approval process the application form must be submitted by the end of January 2023. When you submit the application form, please select “Submission of application form” in the contact page of PHITS website, and write “I would like to attend PHITS beginner (or intermediate) course in Malaysia 2023” in the message body. If you have already obtained

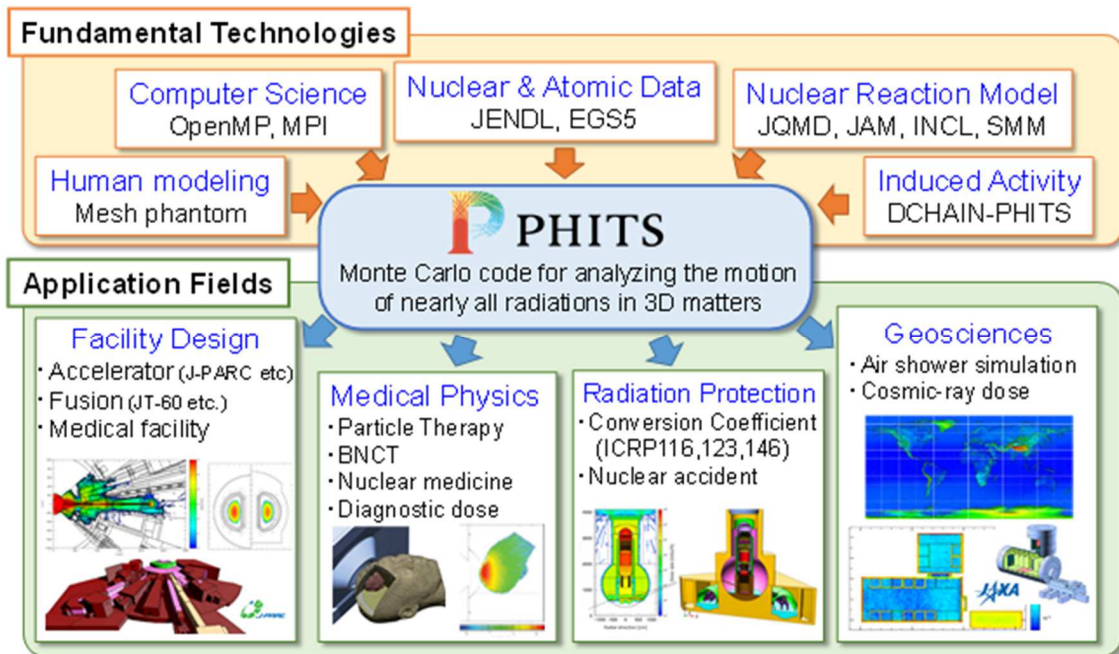
¹ Attendees must obtain the PHITS license in prior to the course. **If you obtained PHITS by attending PHITS course before 2019, you have to apply the license again.** Registration might be declined due to the capacity of the rooms for tutorial.

the PHITS license, please select “PHITS tutorial registration” in the contact page of PHITS website, and write “I would like to attend PHITS intermediate (or beginner) course in Malaysia 2023” in the message body. You can freely select the beginner or intermediate course, but we recommend to take the beginner course if you have not taken the PHITS course before.

Attendees must bring a laptop PC with either Windows or Mac OS. There is no particular skill that should be learned in prior to attending the beginner course, but we recommend to take a brief look of PHITS tutorial video on YouTube to grasp the image of the tutorial contents.

<https://www.youtube.com/playlist?list=PLe8Wrr-sE8vy-ygWoAqWVrvK89PfxUFYO>

If you have any question about the course, please contact us via PHITS website (<https://phits.jaea.go.jp/contact/edit/en>).



Overview of the PHITS code

Tentative Program

Monday, 13 March

9:30-10:00: Registration

10:00-11:00: Installation & introduction I

11:00-11:15: (coffee Break)

11:15-12:00: Installation & introduction II
(lunch)

13:30-15:00: Basic Lecture I (geometry) / Exercise (stop α , β , γ -rays & neutron)

15:00-15:30: (tea break)

15:30-17:30: Basic Lecture I (source) / Exercise (melt snowman)

Tuesday, 14 March

09:30-10:30: Basic Lecture II (tally) / Hands-on session

10:30-10:45: (coffee break)

10:45-12:00: Basic Lecture II (tally) / Hands-on session
(lunch)

13:30-15:00: Basic Lecture III (parameter setting) / Hands-on session

15:00-15:30: (tea break)

15:30-17:30: Basic Lecture III (parameter setting) / Hands-on session

Wednesday, 15 March

09:30-10:30: Advanced Lecture (complicated source definition) / Hands-on session

10:30-10:45: (coffee break)

10:45-12:00: Exercise (stop α , β , γ -rays & neutron) / Hands-on session
(lunch)

13:30-15:00: Exercise (stop α , β , γ -rays & neutron) / Hands-on session

15:00-15:30: (tea break)

15:30-17:30: Exercise (melt snowman) / Hands-on session

Thursday 16 March

09:30-10:30: Advanced Lecture (options: useful functions)

10:30-10:45: (coffee break)

10:45-12:00: Advanced Lecture (options: useful functions)
(lunch)

13:30-14:30: Advanced Lecture (variance reduction technique)

15:00-15:30: (tea break)

15:30-17:30: Advanced Lecture (variance reduction technique)

Friday 17 March

09:30-10:30: Advanced Lecture (X-ray therapy) / Advanced Lecture (Shielding)

10:30-10:45: (coffee break)

10:45-12:00: Summary and closing remarks
(lunch)

13:30-17:30: Free discussion

Lecturer Profile

Name

Tatsuhiko Sato

Position/Organization

Research fellow / Japan Atomic Energy Agency
Specially appointed professor / Osaka University

Education and employment history

2001 Mar. Ph.D., Department of Nuclear Engineering, Kyoto University

2001 Apr. Researcher, Japan Atomic Energy Research Institute

2005 Oct. Researcher, Japan Atomic Energy Agency (due to re-organization)

2011 Oct. Principal Researcher, Japan Atomic Energy Agency

2018 Dec. – Specially appointed professor, Osaka University (Cross appointment contract)

2022 Apr. – Research fellow, Japan Atomic Energy Agency



Research area and outcomes

He is the principal investigator of the current PHITS development team. He also used the code by himself for cosmic-ray research and medical physics. He developed a model for estimating the terrestrial cosmic-ray fluxes for both solar quiet and storm periods based on the airshower simulation performed by PHITS. He also developed a model for estimating the therapeutic effects of charged particle therapy and boron neutron capture therapy based on the microdosimetric simulation performed by PHITS. He is a member of International Commission on Radiological Protection (ICRP) Committee 2 since 2017. He published more than 180 peer-reviewed papers including 49 corresponding-author ones, and they have been cited by more than 6,000 times (according to Google Scholar).

Name

Hiroshi Iwase

Position/Organization

Associate Professor / High Energy Accelerator Research Organization (KEK)

Education and employment history

2003 Mar. Ph.D., Department of Quantum Science and Energy Engineering, Tohoku University

2003 Apr. Postdoc, Gesellschaft fuer Schwerionnen Forschung (GSI)

2006 Oct. Assistant Professor, Radiation Science Center, KEK

2021 Apr. Associate Professor, Radiation Science Center, KEK



Research area and outcomes

He is a member of PHITS development team. His activity on PHITS was mainly in the period when RIKEN, GSI, and MSU were going to develop their own RI beam facility, and he contributed the use of PHITS in these research laboratories. In KEK he is involved in radiation safety and also SOKENDAI education. Presently his research themes are improving the photo-nuclear models and low energy heavy ion reactions in PHITS.