



## Announcement of the PHITS Tutorial in Philippine 2023

Place: De La Salle University, 2401 Taft Ave, Malate, Manila &

Philippine Nuclear Research Institute, Commonwealth Avenue, Diliman,

Lungsod Quezon, 1101 Kalakhang Maynila

Eligibility for participation: None (Open to everybody<sup>1</sup>)

Course date: Mar. 6-10, 2023

Deadline for registration: Jan. 24, 2023 for new PHITS users

Feb. 24, 2023 for registered PHITS users

Maximum number of participants: 40 (accepted in order of registration)

Registration Fee: Free

Language: English

Course contents: Basic course (6-8 March in De La Salle University)

Advanced course (9-10 March in Philippine Nuclear Research Institute)

Lecturer: Dr. Tatsuhiko Sato (Japan Atomic Energy Agency), Japan

Dr. Yuho Hirata (Japan Atomic Energy Agency), Japan

Local organizer: Dr. Edgar A. Vallar (De La Salle University)

Dr. Alvie A. Astronomo (Philippine Nuclear Research Institute)

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>)

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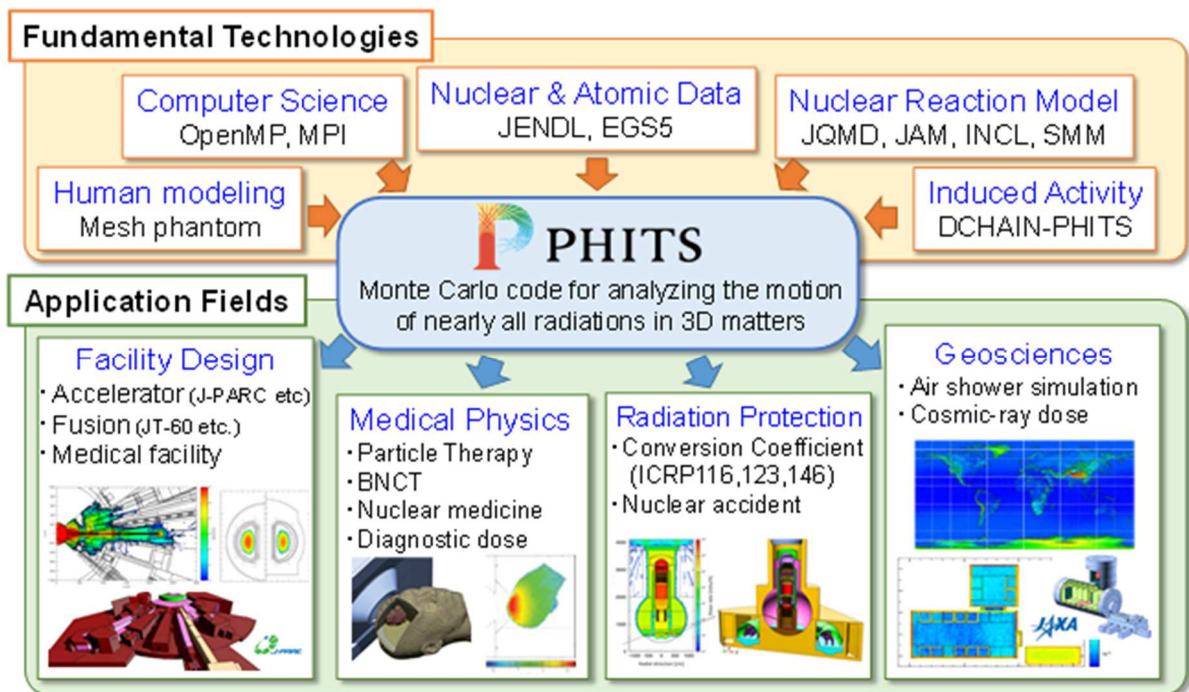
<sup>1</sup> Attendees must obtain the PHITS license in prior to the course. **If you obtained PHITS by attending PHITS course before 2019, you have to apply the license again.** Registration might be declined due to the capacity of the rooms for tutorial.

If you would like to attend the course, you have to obtain the license of the latest version of PHITS. 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 so that the application form must be submitted to JAEA by 24 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 course in Philippine 2023” in the message body. If you have already obtained the PHITS license, please select “PHITS tutorial registration” in the contact page of PHITS website, and write “I would like to attend PHITS course in Philippine 2023” in the message body. We encourage to participate both beginner and advanced courses, but the participation in either basic or advanced course is also welcome. In that case, please specify the course you would like to attend (basic or advanced) in the message body.

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 basic 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, 6 March in De La Salle University

08:30-09:00: Registration  
09:00-10:45: Installation & introduction  
10:45-11:00: (coffee Break)  
11:00-12:00: Basic Lecture I (geometry)  
(lunch)  
13:30-14:45: Basic Lecture I (geometry)  
14:45-15:00: (tea break)  
15:00-16:30: Basic Lecture I (source)

Tuesday, 7 March in De La Salle University

09:00-10:30: Basic Lecture II (tally)  
10:30-10:45: (coffee break)  
10:45-12:00: Basic Lecture II (tally)  
(lunch)  
13:30-14:45: Basic Lecture III (parameter setting)  
14:45-15:00: (tea break)  
15:00-16:30: Basic Lecture III (parameter setting)

Wednesday, 8 March in De La Salle University

09:00-10:30: Exercise (stop  $\alpha$ ,  $\beta$ ,  $\gamma$ -rays & neutron)  
10:30-10:45: (coffee break)  
10:45-12:00: Exercise (stop  $\alpha$ ,  $\beta$ ,  $\gamma$ -rays & neutron)  
(lunch)  
13:30-14:45: Exercise (melt snowman)  
14:45-15:00: (tea break)  
15:00-16:30: Summary & discussion for beginner course

Thursday 9 March in Philippine Nuclear Research Institute

09:00-10:30: Introduction of the new features of PHITS  
10:30-10:45: (coffee break)  
10:45-12:00: Advanced Lecture (complicated source definitions)  
(lunch)  
13:30-14:45: Advanced Lecture (variance reduction technique)  
14:45-15:00: (tea break)  
15:00-16:30: Advanced Lecture (variance reduction technique)

Friday 10 March in Philippine Nuclear Research Institute

09:00-10:30: Advanced Lecture (options: useful functions)  
10:30-10:45: (coffee break)  
10:45-12:00: Advanced Lecture (options: useful functions)  
(lunch)  
13:30-16:30: 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

### *Major professional accomplishments*

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*

Yuho Hirata

*Position/Organization*

Post-doctoral fellow / Japan Atomic Energy Agency

*Education and employment history*

2020 Mar. Ph.D., Nagoya University

2020 Apr. – Post-doctoral fellow, Japan Atomic Energy Agency



*Major professional accomplishments*

He has been a member of PHITS development team since 2020. He has studied the development and analysis of radiation detectors. He developed a method for predicting the response of the luminescence radiation detectors using PHITS. He also developed a track-structure function for semiconductor silicon that enable the calculation of the radiation behavior on a nano-scale and the analysis of the physical mechanism of radiation detection.