



Announcement of the PHITS Tutorial in Indonesia 2024

Place: Physics department room, UNSOED, Purwokerto, Indonesia

Eligibility for participation: None (Open to everybody¹)

Course date: June 24-27, 2024

Deadline for registration: May 23, 2024 for new PHITS users

June 10, 2024 for registered PHITS users

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

Registration Fee: Free

(For lunch and coffee break during 5 days will be charged IDR. 750.000 per participant)

Language: English

Course contents: Basic course

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

Local organizer:

- Prof. Yohannes Sardjono (National Research and Innovation Agency of Indonesia (BRIN))
- Mr. Rasito (National Research and Innovation Agency of Indonesia (BRIN))
- Prof. Bilalodin (Jenderal Soedirman University (UNSOED))

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 license of the latest version

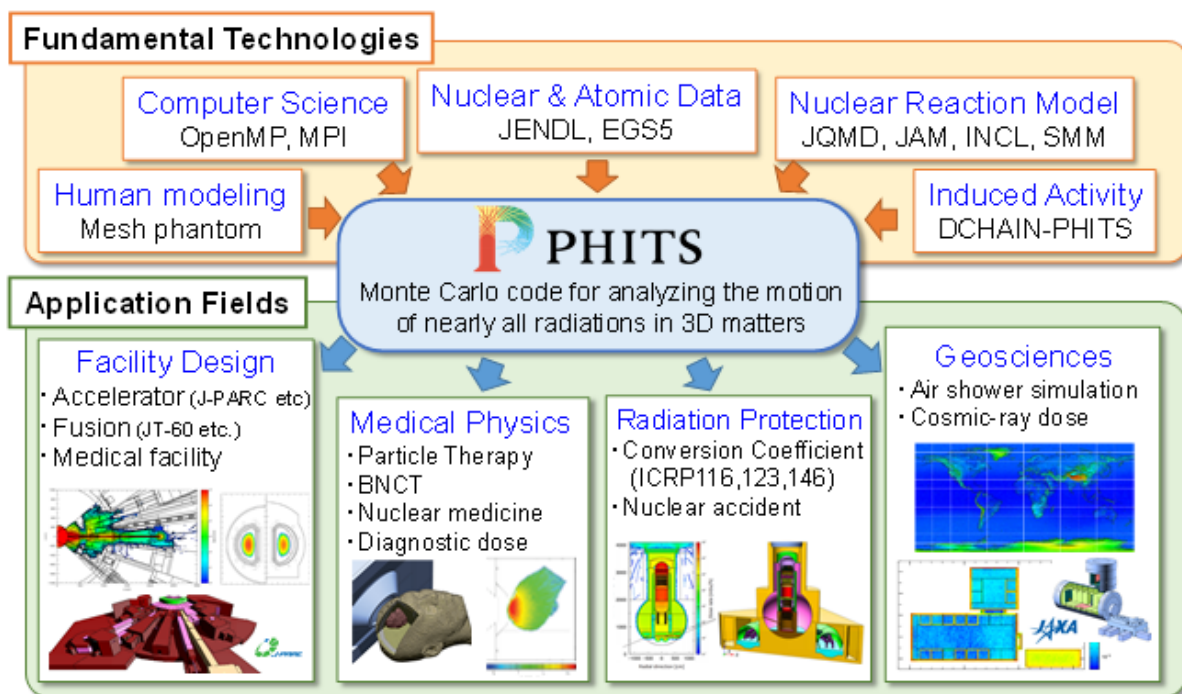
¹ Attendees must obtain the PHITS license in prior to the course. Registration might be declined due to the capacity of the rooms for tutorial.

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 23 May 2024. 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 Indonesia 2024” 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 Indonesia 2024” in the message body.

Attendees must bring a laptop PC with either Windows or Mac OS. During the course, they will learn the basic usage of PHITS such as the construction of 3D geometry and the definition of source particles and tallies. 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 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

Sunday, 23 June 2024

Time	Topic
18:00-20:00	Pre-course meeting for determining the course details by Research Fellow, JAEA, Prof. Tatsuhiko Sato with Senior Lecturer FMIPA UNSOED, Prof. Bilalodin, Senior Researcher PRTKMMN BRIN, Prof. Yohannes Sardjono, PHITS Tutorial in Indonesia 2024 committee, and all participants

Monday, 24 June 2024

Time	Topic
08:00-8:30	Registration and Welcome Speech by Dean of Faculty Mathematics and Natural Sciences (FMIPA) UNSOED and Head of Research Center for Nuclear Safety, Metrology and Quality Technology (PRTKMNN) BRIN
08:30-09:00	Current Status and Future Plan of Cancer Therapy in Indonesia by Directorate General of Health Services, Ministry of Health Indonesia
09:00-09:30	Regulation Supporting of Radiation Aspect for Advanced Cancer Therapy in Indonesia by Head of Nuclear Energy Regulatory Agency (BAPETEN)
09:30-10:00	Business Canvas Model of Technology Boron Neutron Capture Therapy (BNCT) and Proton Beam Therapy (PBT) Cyclotron Base in Indonesia by Senior Researcher PRTKMMN BRIN, Prof. Yohannes Sardjono
10:00-10.15	Coffee break
10:15-11:00	Current Status and Future Plan of Cyclotron for BNCT and PBT in The World by General Manager Medical System Sales Group, Sumitomo Heavy Industries, Ltd., Japan, Dr. Yoshihito Kameda
11:00-11:30	Current Status and Future Plan of Cancer Therapy at Dharmais Hospital by President Director of Dharmais National Cancer Center Hospital

11:30-12:00	Current Status and Future Plan of Cancer Therapy at Murni Teguh Hospital by President Director of Murni Teguh Hospital
12:00-12:30	Question and Answer by Moderator from Senior Lecturer FMIPA UNSOED, Prof. Bilalodin
12:30-13:30	Lunch
13:30-15:00	Installation & Introduction, Basic Lecture I (Geometry & Source)

Tuesday, 25 June 2024

Time	Topic
08:00-10:00	Basic Lecture II (Tally) by Research Fellow, JAEA, Prof. Tatsuhiko Sato
10:00-10:15	Coffee break
10:15-12:00	Basic Lecture II (Tally) by Research Fellow, JAEA , Prof. Tatsuhiko Sato
12:00-13:00	Lunch
13:00-15:00	Basic Lecture III (Parameter Setting) by Research Fellow, JAEA , Prof. Tatsuhiko Sato

Wednesday, 26 June 2024

Time	Topic
08:00-09:00	Basic Lecture III (Parameter Setting) by Research Fellow, JAEA, Prof. Tatsuhiko Sato
09:00-10:00	Advanced Lecture (Complicated Source Definitions) by Research Fellow, JAEA, Prof. Tatsuhiko Sato
10:00-10:15	Coffee break
10:15-11:00	Advanced Lecture (Complicated Source Definitions) by Research Fellow, JAEA, Prof. Tatsuhiko Sato
11:00-12:00	Exercise (stop α , β , γ -rays & neutron) by Research Fellow, JAEA, Prof. Tatsuhiko Sato
12:00-13:00	Lunch
13:00-15:00	Exercise (stop α , β , γ -rays & neutron) by Research Fellow, JAEA, Prof. Tatsuhiko Sato

Thursday 27 June 2024

Time	Topic
08:00-08:30	Radiation Safety for Cancer Therapy by Senior Researcher PRTKMNN BRIN, Mr. Gede Sutresna Wijaya
08:30-09:00	Radiation Waste Material and Transportation for Cancer Therapy, by Senior Researcher PRTKMNN BRIN, Mr. Isman Mulyadi
09:00-10:30	Business Plan of Cancer Therapy, by Senior Researcher PRTKMNN BRIN, Mr. Zuhdi Ismail
10:30-10.45	Coffee break
10:45-12:00	Exercise (Melt Snowman by Proton Beam) by Research Fellow, JAEA, Prof. Tatsuhiko Sato
12:00-13:00	Lunch
13:00-15:00	QA Session, Research Fellow, JAEA, Prof. Tatsuhiko Sato, Senior Researcher PRTKMMN BRIN, Prof. Yohannes Sardjono, and Senior Lecturer FMIPA UNSOED, Prof. Bilalodin
15.00-16.00	Closing Remarks by Dean of Faculty Mathematics and Natural Sciences (FMIPA) UNSOED and Head of Research Center for Nuclear Safety, Metrology and Quality Technology (PRTKMNN) BRIN

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 200 peer-reviewed papers including 51 corresponding-author ones, and they have been cited by more than 8,000 times (according to Google Scholar).