

## Announcement of the PHITS Tutorial in Argentina

Place: Centro Atómico Constituyentes, Comisión Nacional de Energía Atómica (CNEA),

Buenos Aires, Argentina (<https://www.argentina.gob.ar/cnea/cac>)

Address: Av. Gral. Paz 1499 Villa Maipú, Buenos Aires

Date: Mar. 5-6 (Basic course) & Mar. 9-11 (Advanced course), 2020

Deadline for registration: Feb. 5, 2020

Registration Fee: 200 EURO (including coffee break, lunch & social dinner)

Language: English

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

Lecturer: Dr. Tatsuhiko Sato, Leader of PHITS development team, JAEA, Japan

Dr. Koji Niita, Primary programmer of PHITS, RIST, Japan

Local organizer: Dr. Sara González (CNEA-CONICET), Eng. Mario Gadan (CNEA).

PHITS is a general-purpose Monte Carlo particle transport simulation code developed under collaboration between Japan Atomic Energy Agency (JAEA), Research Organization for Information Science and Technology (RIST), 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 of PHITS. It is free of charge, and the instruction to get the license is given below (<https://phits.jaea.go.jp/howtoget.html>). When you submit the application form via PHITS website, please select “Submission of application form” in the contact page of PHITS website, and write “I would like to attend PHITS course in Argentina, Mar 2020” in the message body.

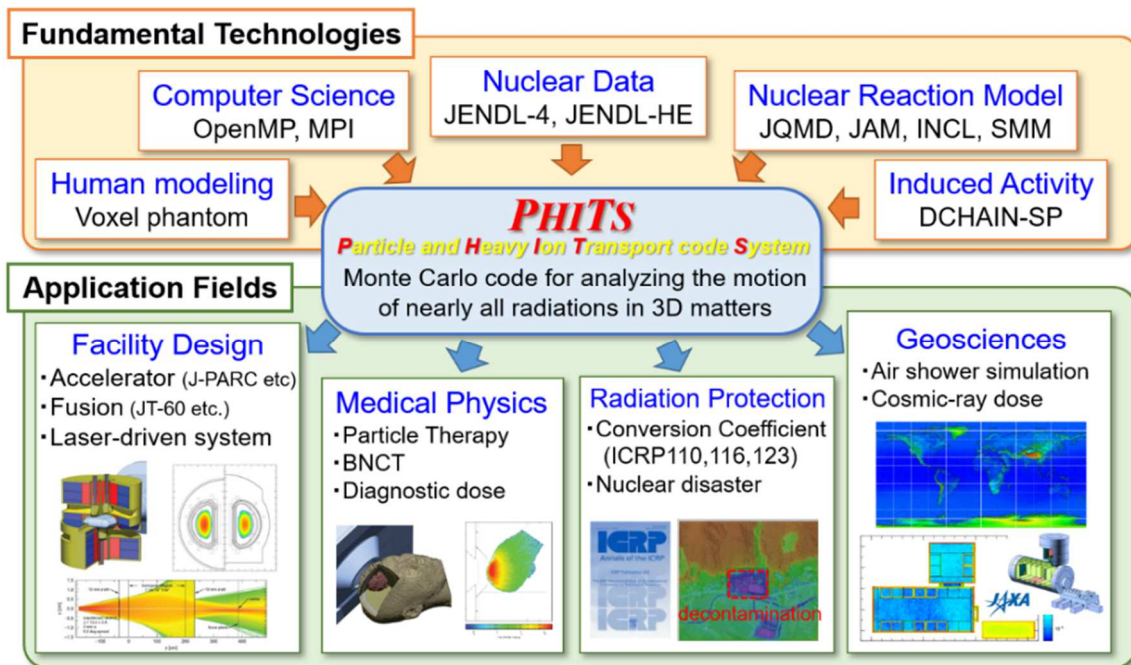
Attendees must bring a laptop PC with either Windows or Mac OS. The tutorial consists of two courses; one is the basic course for beginners of Monte Carlo simulation (Mar. 5-6) and the other is the advanced course for researchers who are familiar with other Monte

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<sup>1</sup> Attendees must obtain the PHITS license in prior to the course. The distribution of the PHITS code is controlled by Japanese law, and we may not be able to accept the participation from country/institute of weapon development concern.

Carlo simulation codes such as MCNP (Mar. 9-11). Attendees can join in either or both courses (registration fee is the same for all participants). During the basic course, they will learn the basic usage of PHITS such as the construction of 3D geometry and the definition of source particles and tallies. During the advanced course, they will learn the difference between the input formats of PHITS and other Monte Carlo codes, and some advanced and unique functions of PHITS.

If you have any question about the course, please Email to PHITS office [phits-en-office@jaea.go.jp](mailto:phits-en-office@jaea.go.jp) with your information (Affiliation, Nationality).



Overview of the PHITS code

## Tentative Program

We will have coffee breaks around 10:30 and 15:30 every day

5 March (Thursday)

9:00-9:30: Registration

9:30-9:45: Open ceremony

9:45-10:30: Installation

11:00-12:00: Introduction of PHITS

(lunch)

13:00-16:00: Basic Lecture (input format & geometry)

16:30-17:30: Basic Lecture (source definition)

6 March (Friday)

9:30-12:00: Basic Lecture (tally definition)

(lunch)

13:00-17:30: Basic Lecture (parameter setting)

9 March (Monday)

9:30-10:00: Installation

10:00-11:00: Introduction of PHITS

11:00-12:00: Difference between input formats of PHITS and MCNP

(lunch)

13:00-14:00: Difference between input formats of PHITS and MCNP

14:00-16:00: Exercise (stop  $\alpha, \beta, \gamma$ -ray & neutron)

16:00-17:30: Exercise (melt snowman by proton beam!)

18:00-: Social dinner

10 March (Tuesday)

9:30-12:00: Advanced Lecture (Complicated source definition)

(lunch)

13:00-15:00: Advanced Lecture (Useful functions: counter, transform, magnetic field)

15:00-17:30: Advanced Lecture (Variance reduction)

11 March (Wednesday)

9:30-12:00: Advanced Lecture (TBA)

(lunch)

13:00-17:30: Practical simulation for each participant

## CV of Lecturers

### *Name*

Tatsuhiko Sato

### *Position/Organization*

Principal Researcher / Japan Atomic Energy Agency

Specially appointed professor / Osaka University



### *Education and employment history*

1996 Mar. B.Sc., Department of Nuclear Engineering, Kyoto University

1998 Mar. M.Sc., Department of Nuclear Engineering, Kyoto University

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)

### *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 150 peer-reviewed papers including 45 corresponding-author ones, and they have been cited by more than 4,000 times (according to Google Scholar).

*Name*

Koji Niita

*Position/Organization*

Principal Research Scientist / RIST  
(Research Organization for Information Science and Technology)



*Education and employment history*

1979 Mar. B.Sc., Department of Physics, Tohoku University, Japan.  
1981 Mar. M.Sc., Nuclear Physics, Tohoku University, Japan.  
1984 Mar. Ph.D., Nuclear Physics, Tohoku University, Japan.  
1984 Sep. Research Associate, GSI Darmstadt, Germany.  
1986 Sep. Research Associate, Giessen University, Germany.  
1991 Jan. Postdoctoral Fellow, Japan Atomic Energy Research Institute.  
1994 Apr. Principal Research Scientist, RIST

*Major professional accomplishments*

He is a principal research scientist of RIST and a specialist of the radiation transport phenomena and numerical simulation. He is also an important member of the PHITS development team. He had programmed the original PHITS code and developed several nuclear reaction models which have been employed in the PHITS code. He and his colleagues of RIST have designed the shielding structure for many accelerator facilities, particularly for particle therapy facilities by using the PHITS code. Up to now, RIST performed the shielding design for 7 proton therapy facilities, 6 carbon therapy facilities and 3 BNCT therapy facilities in Japan, Hong Kong, Taiwan, Korea and US.