



# Opening Remark

Hiroaki Kondo (AIST)

1. Objective and goal of the workshop
2. Why deposition?
3. Outline of schedule



# 1. Objective and goal of the workshop

Motivation 1: Both of scientific and operational models have much uncertainty in deposition process.

Motivation 2: Lack of experience to utilize operational models for emergency response in Japan.

Lead organizer of DAY-1: Hiroaki Kondo (AIST)

DAY-2: Ryoji Ohba (IIS, the University of Tokyo)



## Bridging the gaps

Academic model

Modeling Research

Senior Researchers

Researchers



Operational model

Observational Research

Young Researchers

Society



## Goal:

### DAY-1:

- ▶ To reduce uncertainty in the simulation model of advection, diffusion, and deposition, inter alia, deposition process.
- ▶ To recommend the parameters related to deposition for operational models from SOA knowledge.
- ▶ To build up strategy for further improvement of above two points.

### DAY-2:

- ▶ To improve monitoring systems and modeling procedure for source term estimation in case of emergency release.
- ▶ To build up consensus for “Risk communications” for effective decision making.



## 2. Why deposition?

So far some symposia and workshops have been conducted related to similar topics.

e.g.

NCAR workshop	(22–23 February 2012, NCAR)
MSJ Special session	(17 September 2012, Nagoya Univ.)
AMS Special symposium	(6 January 2013, Austin)

Model comparison

e.g. JAEA, SCJ, WMO/UNSCEAR

- Major uncertainties: STE, dispersion process, deposition process
- Dose from deposited radionuclides are main cause of long-term exposure of radiation.
- The origin of uncertainty for deposition is not always clear.



An example of deposition calculation in unit time and area :  
(A Standard for Procedure of Probabilistic Safety Assessment of Nuclear Power  
Plants (Level 3 PSA): 2008, AESJ-SC-P010 (2008))

Wash out coefficient  $\Lambda = CR^\alpha$  e.g.  $C = 9.5 \times 10^{-5}$   $\alpha = 0.8$  for particle  
(MACCS2, NUREG-1150)

$$\Lambda = 10^{-5} - 10^{-2} \text{ s}^{-1}$$

$$\chi_D(x, y) = \chi(x, y, 0) \left\{ V_d + \Lambda \sqrt{\frac{\pi}{2}} \sigma_z(x) \exp \left[ \frac{h^2}{2\sigma_z^2(x)} \right] \right\}$$

Dry deposition velocity  $0.1 \sim 10 \text{ cm s}^{-1}$  (USNRC 1983)



### 3. Outline of Schedule

Date	2 <sup>nd</sup> March : Academic discussion
Opening remark	9:00-9:15
Invited presentations (1)	9:15-11:45
Invited presentations (2)	13:00-14:40
Poster session	14:40-16:00 (including coffee break)
Group discussion	16:00-17:00
Panel discussion	17:00-18:00

Banquet : 18:30-20:00 (All participants will be transported by the chartered bus to JR Fukushima station and Iizaka Onsen.)

Date	3 <sup>rd</sup> March : Operational discussion
Invited presentations	9:00-11:15
Poster session	11:15-12:00 (Including coffee break)
<b>Group photo</b>	<b>12:00-12:15</b>
Group discussion	13:00-14:30: Group discussion #2 will be held at No.403 room at 4 <sup>th</sup> floor of the building in front of the conference centre.
Coffee break	14:30-15:00
Panel discussion	15:00-16:00
Closing remarks	16:00-16:30

# International workshop on dispersion and deposition modeling for nuclear accident releases -Transfer of science from academic to operational models- March 2-4, 2015

## CAMPUS MAP



**Healthcare Center**

Physicians, psychiatrists and nurses provide medical examinations, physical and mental health checks and first aid for students and staff. Also, part-time external school physicians (gastroenterology, ophthalmology and gynecology) visit the center once a month to give expert advice.

- Wheelchair
- AED
- ATM

**Shinyo Park**

Shinyo Park is located behind the University Hall, and is a perfect place for a quiet rest in a natural setting. On top of the small hill is an azumaya (Japanese gazebo) and this is a great place to take a walk.

**University Cafeterias**

The large cafeteria located on the first floor of the University Hall boasts a huge variety of dishes on the menu. "Bibshoku" lunch sets, donburu (rice bowls) and noodle soups are aptly, and also on offer is a buffet corner for side dishes. The Green restaurant is on the second floor, where you can enjoy sweets and daily special lunches.

**Lunch and Banquet (up stair)**

**Group discussion #2 at 403 on March 3**

**JR Kanayagawa st.**

**We are here.**

**Information Network Center**

Five computer labs and a Refresh Corner are available, and satellite from classes. There are 307 computers that can also be used for self-study. Also, through the network, students can access computer systems at the National Institute of Informatics and mainframe computer centers.

**University Library**

The library houses approximately 860,000 books, and offers facilities such as group study rooms and a Learning Common Room in study areas where talking is allowed, multi media rooms and an AV corner. The library is open on Sundays and holidays, and is open until 21:45 on weekdays (Saturdays until 21:00).

**Center for Research and Development of Education**

The higher education development, career research, teacher training, learning advice and workshop departments maintain and enhance the quality of the university's educational activities, provide career training and job hunting support, support student teachers, advice educators, and provide workshops for practicing professional teaching staff.

**Gymnasium**

Fukushima University has 2 gymnasiums. The first big gymnasium is used for events such as university entrance ceremonies, graduation ceremonies and sports tournaments. The second gymnasium has a training gym, and can be accessed at any time if you apply with the Student Affairs Division.

**Athletics Field**

Track and field team members who represent the university strive to improve their performance daily at this field. Many of the track and field athletes who perform on the world stage started in this very arena. The field is registered as a Type III Accredited Athletic Field.

**LiveCampus**

LiveCampus provides information on things such as class timetables, academic registration and results. There are terminals located on campus, and students can access the site through the internet off-campus as well.

*Donation Memorial Building, Faculty of Symbiotic System Science, Fukushima University*





## Poster presentations:

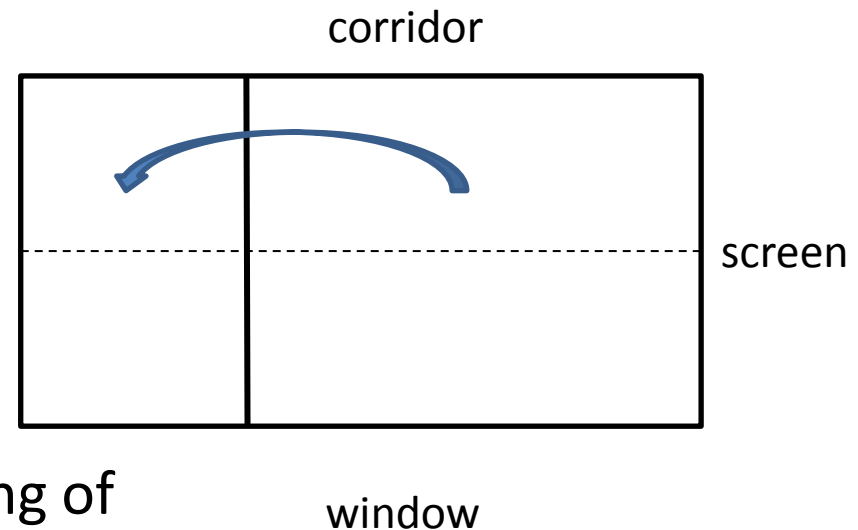
Please set up your poster at the specified board each day. A name card is attached at the top of the board.

## Group discussion:

March 2: Two groups

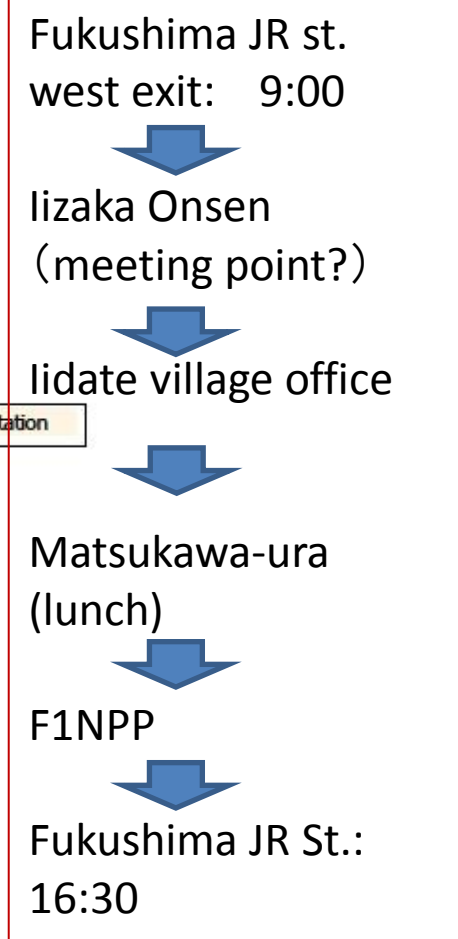
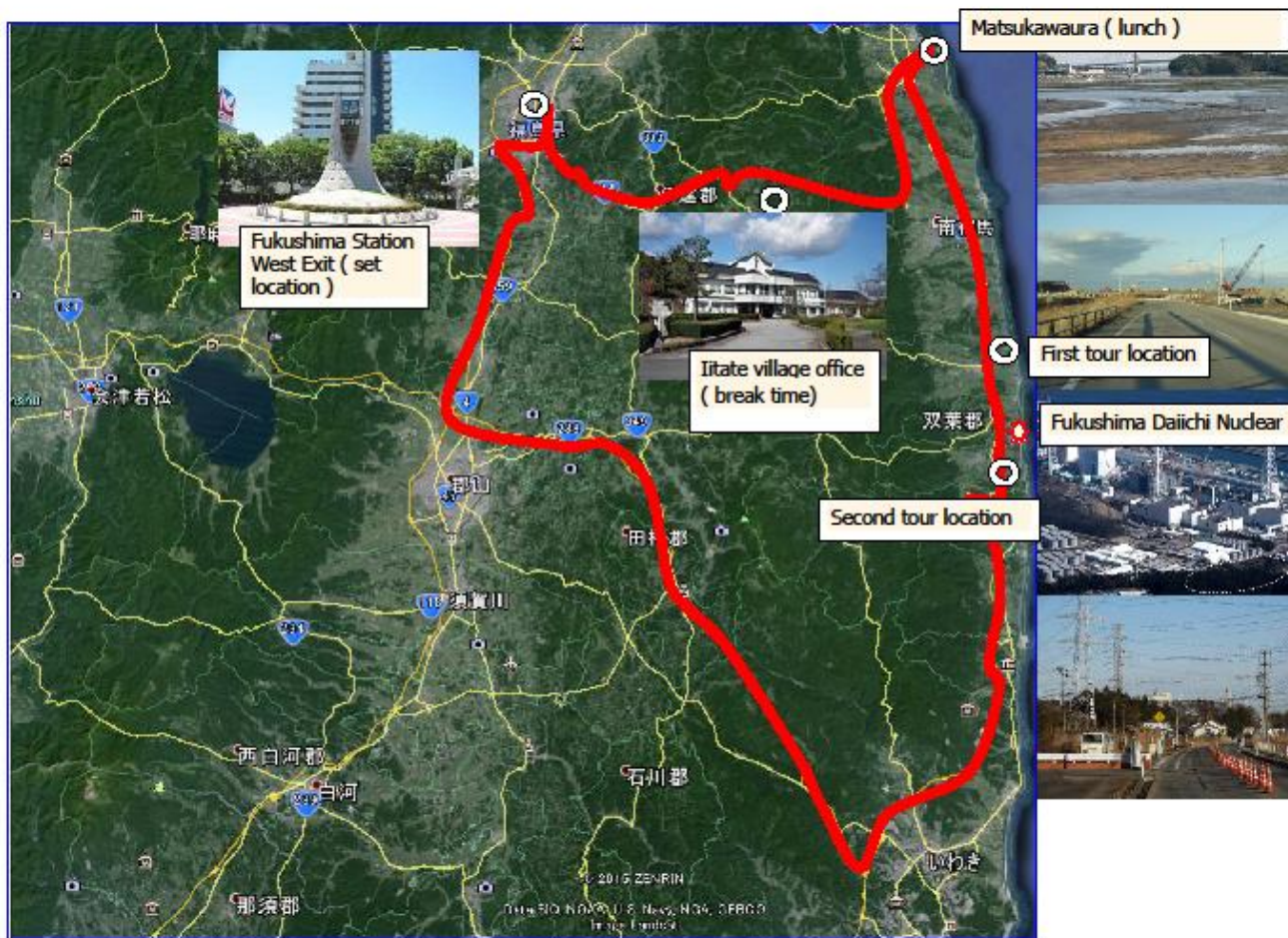
March 3: Three groups

Group#2: room 403 in the building of  
the Faculty of Symbolic System Science





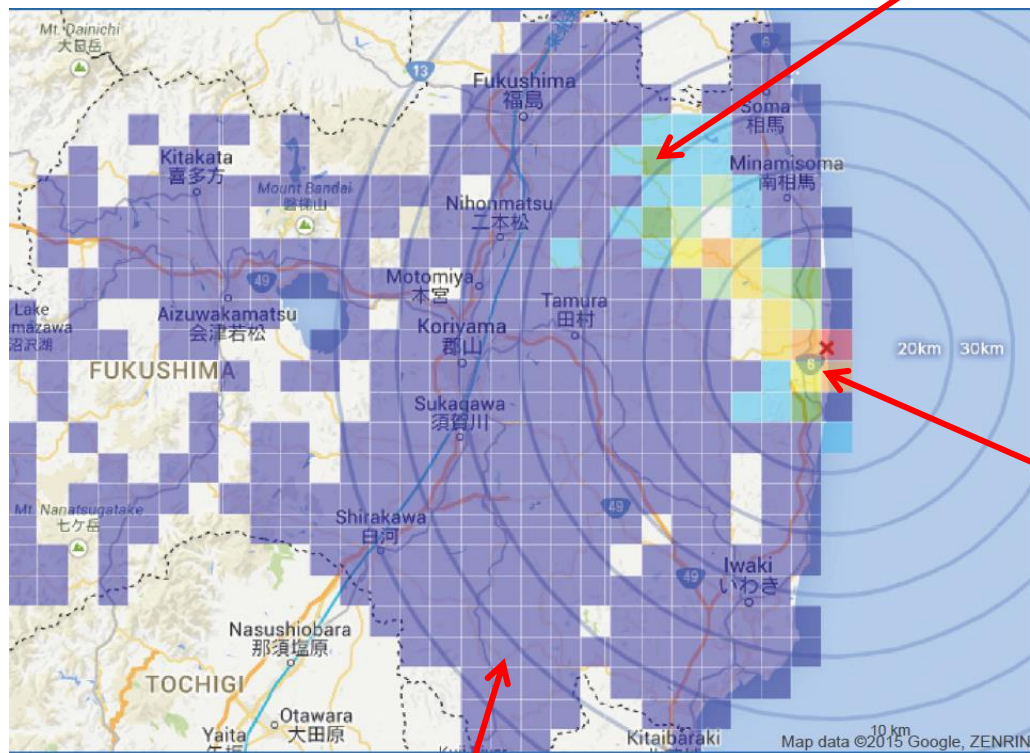
# March 4: Excursion





# Dose rate (Feb. 22)

0.5~1 $\mu$ Sv/h (Iidate)



5 $\mu$ Sv/h (near F1NPP)

~0.25 $\mu$ Sv/h

by Fukushima prefecture

Major contributors:

Steven Hanna, Koichi Sada, Masayuki Takigawa, Akira Watanabe, and Tetsuji Yamada

Local Organizing Committee:

Hirohiko Ishikawa, Kyoto University

Toshiki Iwasaki, Tohoku University

Hiroaki Kondo, chair AIST

Hiromasa Nakayama, JAEA

Ryoji Ohba, IIS, University of Tokyo

Koichi Sada, CRIEPI

Masayuki Takigawa, JAMSTEC

Haruo Tsuruta, OARI, University of Tokyo

Akira Watanabe, Fukushima University

Tetsuji Yamada, YSA

Hiromi Yamazawa, Nagoya University



Tumbler doll, god of fire  
maid in Aizu, Fukushima  
(photo by Akira Watanabe)