

## WORKSHOP AGENDA

### International Workshop on Source Term Estimation (STE) Methods For Estimating the Atmospheric Radiation Release From the Fukushima Daiichi Nuclear Power Plant

NCAR Mesa Laboratory – Damon Room  
National Center for Atmospheric Research  
Boulder, Colorado  
Workshop Chair: Dr. Paul Bieringer

**Wednesday, February 22, 2012**

08:00        *Continental breakfast*

08:30        *Welcome and Introduction, Dr. Brant Foote, Scott Swerdlin, and Dr. Paul E. Bieringer*

<b><u>Session I</u> –        Review of Fukushima Daiichi Nuclear Power Plant Atmospheric Radiation Release and Response</b>
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09:00        *Introduction of Fukushima Event and Response Session, Dr. Paul E. Bieringer, (National Center for Atmospheric Research)*

09:05        *Introduction of Fukushima Daiichi Nuclear Power Station Accident, Ms. Tomomi Matsunaga, (Kansai Electric Power Company)*

09:20        *The Defense Threat Reduction Agency (DTRA) Operational Response for The Fukushima Daiichi Nuclear Power Plant Accident, Dr. John Hannan, (Defense Threat Reduction Agency)*

09:40        *NARAC Source Reconstruction During the Response to the Fukushima Dai-ichi Nuclear Power Plant Emergency, Gayle Sugiyama and John Nasstrom, (Lawrence Livermore National Laboratory)*

10:00        *Session I – Q&A and discussion*

10:20        *Coffee break*

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### **Session II – Observations from the Fukushima Accident**

- 10:40      *Introduction of Fukushima Observations Session, **Dr. Paul E. Bieringer**, (National Center for Atmospheric Research)*
- 10:45      *Report on a Recent Field Program to Collect Radiation Measurements Surrounding the Fukushima Nuclear Power Station, **Dr. Ryohji Ohba**, (Japan Nuclear Safety Research Association)*
- 10:55      *Description of Observations Collected around the Fukushima Site by the US DOE Teams, **Dr. Steve Kreek**, (Lawrence Livermore National Laboratory)*
- 11:15      *CTBTO Radionuclide Detections in the Aftermath of the Fukushima Release and a Necessity for Improved Source Inversion Algorithms, **Dr. Monika Krysta**, (Comprehensive Nuclear-Test-Ban Treaty Organization – (CTBTO))*
- 11:35      *Session II – Q&A and discussion*
- 12:00      *Lunch (NCAR Mesa Laboratory Cafeteria)*

### **Session III – Methods for Source Term Estimation of Atmospheric Radiation Release**

- 13:00      *Introduction of Wednesday STE Methods Session, **Dr. Paul E. Bieringer**, (National Center for Atmospheric Research)*
- 13:05      *Survey of Estimation Methods for Amount of Radioactive Materials Emitted from the Nuclear Power Station During Severe Accident, **Dr. Ryohji Ohba**, (Japan Nuclear Safety Research Association)*
- 13:15      *Source Term Estimation and Atmospheric Dispersion Simulations of Radioactive Materials Discharged from the Fukushima Daiichi Nuclear Power Plant due to Accident, **Dr. Nagai Haruyasu**, (Japan Atomic Energy Agency)*

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- 13:45      *Development of an Estimation Method for the Amount of Radioactive Materials Emitted from the Nuclear Power Station During the Severe Accident, **Dr. Ryohji Ohba**, (Japan Nuclear Safety Research Association)*
- 14:15      *Back-trajectory Based Methods for Source Parameter Estimation, **Dr. Andrew Annunzio**, (National Center for Atmospheric Research)*
- 14:30      *Coffee break*
- 14:45      *Source Term Estimation for the 2011 Fukushima Nuclear Accident, **Dr. Guido Cervone**, (George Mason University)*
- 15:05      *Polynomial Chaos Based Minimum Variance Approach for Characterization of Source Parameters, **Dr. Tarun Singh**, (State University of New York at Buffalo)*
- 15:25      *Estimation of Errors in Inverse Modeling of Accidental Release of Atmospheric Pollutant: Application to the Reconstruction of the Cesium-137 and Iodine-131 Source Terms from the Fukushima Daiichi Power Plant, **Dr. Marc Bocquet**, (University of Paris)*
- 15:45      *Session III – Q&A and discussion*
- 16:00      *NCAR Tour*
- 17:00      *Adjourn*
- 19:00      *No host dinner*

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Thursday, February 23, 2012

<b><u>Session IV</u> – Methods for Source Term Estimation of Atmospheric Radiation Release (Continued)</b>
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- 08:00      *Continental breakfast*
- 08:30      *Introduction of Thursday STE Methods Session, **Dr. Paul E. Bieringer**,  
(National Center for Atmospheric Research)*
- 08:35      *A Survey of Evolutionary and Probabilistic Approaches to the **Estimation  
of Sources for Atmospheric Releases of Contaminants**, **Dr. Branko  
Kosovic**, (National Center for Atmospheric Research)*
- 08:55      ***Estimation of Source Parameters for Hazard Releases**, **Dr. Gareth  
Brown**, (UK Defense Science and Technology Laboratory (Dstl))*
- 09:15      ***An Adjoint Approach for the Estimation of Source Terms for Atmospheric  
Releases**, **Luna Rodriguez** (National Center for Atmospheric Research)*
- 09:35      *Session IV – Q&A and discussion*
- 10:00      *Coffee break*

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### **Session V – Atmospheric Data Assimilation, Modeling, and Relevant Physical Processes**

- 10:15      *Introduction to Atmospheric Modeling and Physical Processes Session, Dr. Paul E. Bieringer, (National Center for Atmospheric Research)*
- 10:20      Mesoscale Modeling and Data assimilation for Atmospheric Transport and Fate of Radioactive Materials, **Dr. Yubao Liu**, (National Center for Atmospheric Research)
- 10:40      *Modeling the Physical Processes that Impact the Fate and Fall-out of Radioactive Materials, Van Ramsdell, (Pacific Northwest National Laboratory)*
- 11:00      Session V – Q&A and discussion
- 11:30      *Lunch (NCAR Mesa Laboratory Cafeteria)*

### **Session VI – Session Break-out Groups**

- 13:00      *Introduction to Break-out Group Session, Dr. Paul E. Bieringer, (National Center for Atmospheric Research)*
- 13:05      Discussions on topics presented in previous sessions (designated facilitators will facilitate discussion, prepare, and present reports)
- Break-out group discussion (each group will consist of about 4-8 members)
- Define current state of the topic
  - Identify and prioritize gaps
  - Suggest path forward
- Break-out group report preparation (group discussion facilitators prepare reports with help from group members)
- 14:45      *Coffee break*

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### **Session VII – Plenary Session with Reports from Break-out Sessions**

- 15:00      *Session I Break-out Session Report/Presentation*
- 15:15      *Session II Break-out Session Report/Presentation*
- 15:30      *Session III Break-out Session Report/Presentation*
- 15:45      *Session IV Break-out Session Report/Presentation*
- 16:00      *Session V Break-out Session Report/Presentation*
- 16:15      *Plenary session Q&A and discussion*
- 17:00      *Adjourn*
- 19:00      *No host dinner*

### **Session VIII – Poster Sessions**

Posters will be available for viewing and discussion during all of the session coffee and lunch breaks. The posters will also be included in the break-out session discussions.

- P1.**      *Radiological Source Characterization Using L1 norm Minimization, **Dr. Tarun Singh**, (State University of New York at Buffalo)*
- P2.**      *Application of the HYSPLIT Model for Source Term Estimation, **Lori Mandable**, (George Mason University)*

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Friday, February 24, 2012

### **Session IX – Science and Steering Committee Meeting**

08:00am *Continental breakfast*

08:30am *Post workshop science committee break-out meeting*

10:30am *Break*

12:00pm *Meeting adjourned and Lunch*