

# The 4th TRMM and GPM International Science Conference

November 13-16, 2012, Akihabara UDX GALLERY NEXT, Tokyo, Japan

## Oral Program (final)

### DAY-1: November 13 (Tuesday)

#### 8:30 Registration

#### (Opening Session) Chair: K. Nakamura

9:00 - 9:10 Welcome from JAXA

*Riko Oki (JAXA/EORC)*

9:10 - 9:20 Welcome from NASA

*Ramesh Kakar (NASA Headquarters)*

9:20 - 9:40 Lessons of TRMM and Perspective to the Future Mission (Invited)

*Akimasa Sumi (NIES)*

9:40 - 10:00 TRMM's Original Objectives After 15 Years in Orbit (Invited)

*Christian Kummerow (Colorado State University)*

10:00 - 10:20 TRMM Precipitation Radar Development – History and Lessons Learned – (Invited)

*Masahiro Kojima (JAXA GPM/DPR Project)*

10:20 - 10:40 My Memories of TRMM PR – Its Prehistory and Beginning – (Invited)

*Ken'ichi Okamoto (Tottori University of Environmental Studies)*

#### 10:40 - 11:10 Break

#### (Session 1: TRMM, GPM and Constellations) Chair: G. Skofronick Jackson

11:10 - 11:30 JAXA TRMM and GPM Status

*Riko Oki (JAXA/EORC)*

11:30 - 11:50 NASA TRMM and GPM Status

*Scott A. Braun (NASA/GSFC)*

11:50 - 12:10 The Megha-Tropiques Mission: What TRMM Taught Us ?

*Remy Roca (CNRS)*

12:10 - 12:30 Current Status of the AMSR2 and the GCOM-W1 “SHIZUKU”

*Keiji Imaoka (JAXA/EORC)*

#### 12:30 - 13:50 Lunch Break

**(Session 2: Radar Algorithm) Chair: C. Kummerow**

- 13:50 - 14:10 Characteristics of Rain Estimates by the TRMM Precipitation Radar (Invited)  
*Toshio Iguchi (NICT)*
- 14:10 - 14:25 The Current Status of Precipitation Retrieval Algorithm for the GPM/DPR  
*Shinta Seto (The Univ. of Tokyo)*
- 14:25 - 14:40 Some Issues Related to DPR Performance  
*Robert Meneghini (NASA/GSFC)*
- 14:40 - 14:55 Global Vertical Reflectivity Profile Analysis Using TRMM PR Observations: Application to Tropical Storms  
*Chandrasekar V. Chandra (Colorado State University)*
- 14:55 - 15:10 Constraining CloudSat-based Snowfall Profiles Using Surface Observations and C-band Ground Radar  
*Ziad S. Haddad (NASA/JPL)*

**15:10 - 16:40 Poster Session I & Break**

*See Poster Program (DAY-1)*

**(Session 3: Microwave Radiometer Algorithm) Chair: T. Iguchi**

- 16:40 - 17:00 The Evolution of Passive Microwave Precipitation Retrievals – The Impact of A-priori Information (Invited)  
*Christian Kummerow (Colorado State University)*
- 17:00 - 17:15 Status of BRAIN Algorithm for the Megha-Tropiques Mission  
*Sahra Kacimi (NASA/JPL)*
- 17:15 - 17:30 Transitioning from CRD to CDRD in Bayesian Satellite Precipitation Retrieval: Mitigating Against Solution Ambiguity in Use of Multi-channel Passive Microwave Radiometer Measurements  
*Kwo-Sen Kuo (NASA/GSFC) on behalf of Eric A. Smith (CRCES)*
- 17:30 - 17:45 A Physical Approach to the Inversion of Hydrological Products from TRMM and the GPM Constellation Sensors  
*Sid Ahmed Boukabara (NOAA and JCSDA)*

**19:00 - 21:00 Conference Dinner**

*at Cafe La Bohème G-Zone Ginza (1-2-3, Ginza, Chuo-ku, Tokyo)*

*<http://www.boheme.jp/gzone/?lang=en>*

## **DAY-2: November 14 (Wednesday)**

### **(Session 4: Precipitation Algorithm & Products I) Chair: R. Adler**

- 9:00 - 9:15 Overview of Global Rainfall Map Using Satellite-Borne Microwave Radiometers by the GSMaP Project  
*Takuji Kubota (JAXA/EORC)*
- 9:15 - 9:30 Improvement of Satellite Rainfall Products for Orographic Heavy Rainfall  
*Shoichi Shige (Kyoto University)*
- 9:30 - 9:45 Improving and Evaluating Ice-Phase Precipitation Models for GPM Radar-Radiometer Algorithm Applications  
*Lin Tian (GESTAR - NASA/GSFC) on behalf of William S. Olson (UMBC JCET)*
- 9:45 - 10:00 Detecting and Estimating Falling Snow from GPM Sensors  
*Gail Skofronick Jackson (NASA/GSFC)*
- 10:00 - 10:15 Simulation of Melting Ice-Phase Precipitation Particles for GPM Radar and Radiometer Retrievals  
*Benjamin Johnson (JCET/UMBC - NASA/GSFC)*
- 10:15 - 10:30 Development of the synthetic GPM simulator: construction of GV-constrained CRM database  
*Takamichi Iguchi (University of Maryland)*

### **10:30 - 11:00 Break**

### **(Session 5: Precipitation Algorithm & Products II) Chair: T. Kubota**

- 11:00 - 11:15 The Use of TMI and GMI as a Calibration Transfer Standard  
*Thomas T. Wilheit (Texas A&M University)*
- 11:15 - 11:30 Combined Product Using TRMM/PR and CloudSat  
*Nobuhiro Takahashi (NICT)*
- 11:30 - 11:45 A Reduction of Discontinuity due to the Orbit Boost in a TRMM Precipitation Radar Product for Climate Studies  
*Satoshi Kida (JAXA/EORC)*
- 11:45 - 12:00 Enhancing TRMM with a Near-realtime System and Special Products  
*Eric F. Stocker (NASA/GSFC)*
- 12:00 - 12:15 Precipitation Products from EUMETSAT's Satellite Application Facility on Support to Operational Hydrology and Water Management (H-SAF)  
*Daniele Biron (Centro Nazionale di Meteorologia e Climatologia Aeronautica) on behalf of Alberto Mugnai (CNR-ISAC)*

### **12:15 - 13:35 Lunch Break**

**(Session 6: GV and Local Rainfall I) Chair: W. Peterson**

13:35 - 13:50 Japan's Ground Validation Plan for GPM DPR

*Kenji Nakamura (Nagoya University)*

13:50 - 14:05 GPM GV Field Activities: DSD Variability

*Walter Petersen (NASA GSFC/Wallops Flight Facility)*

14:05 - 14:20 Observations of Temperature and Size Dependency of the Liquid Water Content of Wet Snow

*Yasushi Fujiyoshi (Hokkaido University)*

14:20 - 14:35 Algorithm Validation Effort for BRAIN: Ice Microphysics in Continental Africa, Indian Ocean and South-America

*Nicolas Viltard (LATMOS-IPSL)*

14:35 - 14:50 Analysis of the 23-24 May 2011 Hail Storm Observed in MC3E using HIWRAP and Polarimetric Radar

*Lin Tian (GESTAR - NASA/GSFC)*

14:50 - 15:05 Validation of TRMM Estimated Rainfall Data with Rain Gauge Data in Bangladesh and Bhutan

*Abdul Mannan (SAARC Meteorological Research Centre)*

15:05 - 15:20 Intercomparison of Satellite-based Rainfall Estimates in the Brahmaputra Basin

*Mandira Singh Shrestha (International Centre for Integrated Mountain Development)*

15:20 - 15:35 Vertical Structure of a Squall Line in Bangladesh Analyzed by TRMM PR, Doppler Radar and WRF

*Rafi Uddin (Bangladesh University of Engineering and Technology)*

**15:35 - 16:05 Break**

**(Session 7: GV and Local Rainfall II) Chair: M. Shrestha**

16:05 - 16:20 Rainfall Estimation by Using Surface Radar at Vientiane, Lao

*Takehiko Satomura (Kyoto University)*

16:20 - 16:35 Precipitation Climatology in Vietnam by Utilizing Satellite and Ground Based Observations

*Jun Matsumoto (Tokyo Metropolitan University)*

16:35 - 16:50 Performance of the Global Satellite Mapping of Precipitation (GSMaP) Data over Vietnam and its Topographic Correction

*Thanh Ngo-Duc (Hanoi University of Science)*

16:50 - 17:05 Impact of Intraseasonal Variations to the Spatial Distribution of Coastal Heavy Rainbands Intensity during HARIMAU IOP 2011 Campaign in the West Sumatera

*Ardhi A. Arbain (Agency for The Assessment and Application of Technology (BPPT), Indonesia)*

17:05 - 17:20 Flash Flood Early Warning System in Lao PDR

*Bounteum Sysouphanthavong (Department of Meteorology and Hydrology, Lao PDR)*

17:20 - 17:35 Focusing Mechanisms and the Devastation of Tropical Storm Washi in the Cities of Cagayan de Oro and Iligan, Northern Mindanao

*Esperanza Cayanan (Philippine Atmospheric, Geophysical and Astronomical Services Administration) on behalf of Susan Espinueva*

### **DAY-3: November 15 (Thursday)**

#### **(Session 8: Precipitation Science I) Chair: Y. N. Takayabu**

- 9:00 - 9:20 Regional Variation of Morphology of Organized Convection in the Tropics and Subtropics: Where Did the Squall Lines Go? (Invited)  
*Edward J. Zipser (University of Utah)*
- 9:20 - 9:40 Features of Low-level Warm Rain Causing Heavy Rainfall over the East Asian Monsoon Region and their Consequences in PMW Rain Retrieval (Invited)  
*B. J. Sohn (Seoul National University)*
- 9:40 - 10:00 Global Climatology of Surface Precipitation: The Roles of TRMM and GPM  
*Robert Adler (University of Maryland)*
- 10:00 - 10:20 Fine-scale Rainfall Characteristics Stratified by Scale-based Precipitation Systems  
*Masafumi Hirose (Meijo University)*
- 10:20 - 10:40 A Satellite Study on Tropical Moist Convection and Environmental Variability: A Moisture and Thermal Budget Analysis  
*Hirohiko Masunaga (Nagoya University)*

#### **10:40 - 11:10 Break**

#### **(Session 9: Precipitation Science II) Chair: S. A. Braun**

- 11:10 - 11:30 Comparison of TRMM and Sounding-Based Precipitation and Latent Heating Estimates for CINDY/DYNAMO/AMIE (Invited)  
*Richard Johnson (Colorado State University)*
- 11:30 - 11:50 A Canonical Response of Precipitation to a Warmer Climate (Invited)  
*William K. Lau (NASA/GSFC)*
- 11:50 - 12:10 Summertime Variations of Rainfall Characteristics around Japan Observed from TRMM PR, and Comparisons with Reanalysis and Climate Model Data  
*Yukari N. Takayabu (The University of Tokyo)*
- 12:10 - 12:30 Identifying Oceanic Origin of Continental Rainfall through Integrated Transport  
*W. Timothy Liu (NASA/JPL)*

#### **12:30 - 13:50 Lunch Break**

**(Session 10: Model Application I) Chair: W.-K. Tao**

13:50 - 14:10 Evaluation of the Global Nonhydrostatic Model (NICAM) Simulation Using Satellite Observation and a Future Outlook of the Use of GPM (Invited)

*Masaki Satoh (The University of Tokyo)*

14:10 - 14:30 Status of Operational Use of TRMM/TMI in JMA NWP Systems and Preliminary Study toward TRMM/PR Data Assimilation (Invited)

*Yoshiaki Sato (Japan Meteorological Agency)*

14:30 - 14:50 Effective Assimilation of TRMM/GPM Precipitation in the NCEP Global Model with an Ensemble Kalman Filter

*Eugenia Kalnay (University of Maryland)*

**14:50 - 16:20 Poster Session II & Break**

*See Poster Program (DAY-3)*

**(Session 11: Model Application II) Chair: Y. Sato**

16:20 - 16:40 Assessing the Impact of Pre-GPM Constellation Microwave Radiance Data in the Goddard WRF Ensemble Data Assimilation System

*Philippe Chambon (NASA/GSFC)*

16:40 - 17:00 Precipitation Assimilation in NWP during TRMM Era and Beyond

*Sara Zhang (NASA/GSFC)*

17:00 - 17:20 Microphysics in Goddard Multi-scale Modeling System with Unified Physics

*Wei-Kuo Tao (NASA/GSFC)*

17:20 - 17:40 Validation Numerical Simulation of an Orographic Heavy Rainfall in the Southern Thailand with TRMM datasets for Forecasting and Early Warning in Risky Area

*Somkuan Tonjan (Thai Meteorological Department)*

## **DAY-4: November 16 (Friday)**

### **(Session 12: Multi-Satellite) Chair: T. Ushio**

9:00 - 9:20 Building the Complete Global Precipitation Data Record (Invited)

*George J. Huffman (NASA/GSFC)*

9:20 - 9:40 Gauge Adjusted Global Satellite Mapping of Precipitation (GSMaP\_Gauge) (Invited)

*Tomoo Ushio (Osaka University)*

9:40 - 10:00 Production of Global Satellite Mapping of Precipitation (GSMaP) Near-Real-Time and Reanalysis Versions, and Preparation for GPM

*Misako Kachi (JAXA/EORC)*

10:00 - 10:20 A Study of Ground Based and Satellite Estimated Rainfall Relationship at Downstream of Shinano River, Japan

*Narayan P. Gautam (ICHARM-PWRI, GRIPS)*

### **10:20 - 10:50 Break**

### **(Session 13: Hydrological Application) Chair: R. Oki**

10:50 - 11:10 Subseasonal Forecast Skills of Hydrometeorological Variables Associated with Land Initializations Including Influence of Human Activities (Invited)

*Tomohito Yamada (Hokkaido University)*

11:10 - 11:30 Verification of Satellite Based Rainfall Estimates GSMaP and Customization of a Correction Method for Indus River Basin

*Arslan Usman (Pakistan Meteorological Department)*

11:30 - 11:50 Estimation of the Uncertainty in Global Precipitation Measurements and Its Propagation through Terrestrial Hydrologic Simulations

*Hyungjun Kim (The University of Tokyo)*

11:50 - 12:00 Closing Remarks

*Riko Oki (JAXA/EORC)*

*Ramesh Kakar (NASA Headquarters)*

12:00 Adjourn

13:30 - 17:00 US-Japan Joint PMM Science Team Meeting (closed) at Room NEXT 2