ADVANCE PROGRAM
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CONFERENCE LOCATION
Puerto Rico, a Caribbean Island 100 miles long and 35 miles wide, offers lush, exotic beauty and the same conveniences and amenities as the United States. Puerto Rico, which became a U.S. territory in 1917 and a U.S. Commonwealth in 1952, has the same currency, reliable phone system, and electrical standards as the U.S. In fact, both English and Spanish are officially spoken. La Isla del Encanto, “the island of enchantment,” as it is often called, features white sandy beaches, rolling mountains, the only tropical rain forest in the U.S. National Forest System, two of the world’s eight bioluminescent bays, and beautifully preserved Old San Juan – a 500-year-old city with cobblestone streets enclosed by a massive wall built during the Spanish colonial period. With the shift of strength from military to economic, Puerto Rico has become the only Caribbean island where industry and commerce exceed agricultural production.

With over 500 daily flights from major cities throughout the U.S. and Europe, San Juan is easily accessible. The host venue is a bustling city of 1.5 million people where all visitors still find friendly Latin American hospitality. San Juan combines historical beauty and a beautiful coastline with modern convenience. Interstate-style highways link San Juan with many popular destinations throughout the island, such as the Arecibo Observatory, containing the world’s largest radar dish and radio telescope.

CONFERENCE VENUE & HOST HOTEL
The venue for MicroRad’06, the Wyndham Condado Plaza Hotel, is located just 15 minutes by car from the San Juan International Airport, only 5 minutes by taxi from historical Old San Juan, and is within walking distance of a wide variety of restaurants. The Wyndham Condado, literally steps from the Atlantic Ocean, offers its guests a private beach, three pools, five restaurants, and a variety of nonmotorized water sports equipment from kayaks to paddle boats. During the evening breaks, entertainment options are abundant either on-site or via a brief taxi ride to Old San Juan!

AIRLINE TRAVEL
Puerto Rico is serviced via air travel through Luis Muñoz Marin International Airport. Most major U.S. hubs — including Atlanta, Boston, Chicago, New York, Philadelphia, and Washington, DC — offer daily non-stop service to San Juan. Airlines serving Puerto Rico include American, Continental, Delta, JetBlue, United, Northwest, KLM, Lufthansa, British Airways, Air France, Air Canada, among others.
GENERAL INFORMATION

Climate ...
The average year-round temperature is 82º F (28º C), with mild easterly trade winds.

Cuisine ...
Although a wide range of international cuisines are available, authentic Puerto Rican and Caribbean are more common. Many major American restaurant chains are found island-wide. A light continental breakfast and lunch are included each day as part of the registration fee. A restaurant guide will be included in each registration packet to assist guests in locating dining options for evening meals.

Currency ...
The U.S. dollar is the official and only currency used in Puerto Rico. Major U.S., Canadian, and European banks have branches on the Island. ATM’s are plentiful, and linked to major worldwide banking networks.

Customs and Documents ...
Puerto Rico is a U.S. Commonwealth with U.S. citizenship. Therefore, passports are not necessary for U.S. citizens. Foreign nationals should have valid passports and visas as required. Travelers flying from Puerto Rico to the U.S. are subject to check-in baggage inspection by the U.S. Department of Agriculture at the airport because they prohibit taking certain fruits and plants into the U.S.

Driving ...
Gas is sold by the liter, distance is measured in kilometers, and speed is measured in miles per hour. Many national and local car rental companies operate at the airport and at key locations in the tourist districts.

Electricity ...
Electricity is 110 volts, with U.S. style power outlets.

Languages ...
Puerto Rico has two official languages, Spanish and English.

Meals ...
Breaks and Lunches ... A light continental breakfast, morning and afternoon break, and lunch are included each day as part of the registration fee.

Messages ...
Guests should provide hotel contact information to the appropriate persons for receiving telephone messages and faxes.

Phone System ...
The phone system is the same as in the U.S. (Sprint, Cingular, MCI, etc.). The Island’s area codes are 787 and 939. You need to dial the area code before placing a call anywhere within Puerto Rico and the U.S. For international calls, international codes apply. Calling cards used in the U.S. can be used in Puerto Rico as well.

Postal and Mail Services ...
The U.S. Postal Service provides the same reliable service as in the U.S. and all major courier services, such as FedEx, DHL, Eagle, UPS, among others service Puerto Rico.

Size and Population ...
Puerto Rico is approximately 100 by 35 miles (160 by 56 km), which is roughly the size of Connecticut. The Island’s population is 3.9 million.

Taxes ...
There is no sales tax in Puerto Rico. There is an 11% tax on room charges in hotels with casinos, 9% tax on hotels without casinos and 7% on small inns.

Taxis ...
Visitors may use regular taxis that charge metered rates, or tourist taxis, whose drivers have received special training to serve the tourist areas. The tourist taxis are painted white with the official logo on their front doors and offer fixed rates. The charge from the airport to the Wyndham Condado is US$12.00.

Time ...
Puerto Rico recognizes Atlantic Standard Time which is one hour later than U.S. Eastern Standard Time.

Tipping ...
A 15% to 20% tip is customary. Some hotels and restaurants add a 10% to 17% service charge to the total bill.
TOURS AND CONFERENCE EVENTS

TOURS & CONFERENCE EVENTS (BY DATE)
The following technical and social tours, and conference events have been organized to give MicroRad 2006 participants and their guests a brief glimpse of Puerto Rico. All charters (buses) will depart at the designated times from the Wyndham Condado Hotel main lobby. Guests who miss the charter departure may join the tour by way of taxi transportation. Reservations for all tours must be made in advance. Tickets to the conference banquet may be purchased in advance of arrival or on-site at the registration desk through 18:00 on Tuesday, February 28.

El Yunque Rainforest (S1)
Sunday, February 26, depart at 09:00
Guests will experience a 45-minute drive through typical island towns as charters traverse the Puerto Rican landscape to El Yunque Rainforest. There you will see lush tropical vegetation, thousand-year-old trees, wild orchids, giant ferns, tropical hardwoods and waterfalls. From the heart of this breathtaking beauty, guests will experience the incessant yet delightful chattering of the “Coqui” and the chattering of unseen tropical birds. Tour guests may avail themselves to two main hikes in the rainforest — one, a 35-minute hike down Big Tree Trail or La Mina trail ending at La Mina Waterfalls, or two, a one-hour more athletic hike up to Mt. Britton where guests will enjoy the magnificent views of the forest and the northeastern coast.

Charters will depart the Wyndham Condado Hotel at 09:00, returning at 15:00. Cost per person: US$77.00, including entrance fee and a boxed lunch. Guests should wear comfortable clothing and hiking shoes, bringing snacks and water as needed for the hike.

Arecibo Observatory Technical Tour (T1)
Monday, February 27, depart at 08:15
The Arecibo Observatory is part of the National Astronomy and Ionosphere Center (NAIC) operated by Cornell University under a cooperative agreement with the National Science Foundation. Featuring the world’s largest single-dish radio telescope — a 20-acre radar dish with its 600-ton suspended platform, sitting in an impressive 565-foot sinkhole — the Observatory is recognized as one of the most important national centers for research in radio astronomy, planetary radar and terrestrial aeronomy. In addition, an Optical Laboratory with a variety of instrumentation used for the passive study of terrestrial airglow is located at the Observatory. A lidar together with a Fabry-Perot interferometer is primarily used to measure neutral winds and temperatures of the middle atmosphere. This capability complements that of the incoherent scatter radar, and gives Arecibo a unique capability in the world in terms of aeronomic research.

Closed to the public on Mondays, MicroRad guests will receive a private tour and technical presentation by Arecibo researchers, followed by a catered lunch. Charters will depart the Wyndham Condado Hotel at 08:15, returning at 15:30. Cost per person: US$42.00 including entrance fee and lunch.

Welcome Reception (E1)
Tuesday, February 28, 17:30 - 19:00
Wyndham Condado Hotel, Laguna Pool Terrace
All MicroRad participants and their guests are invited to attend the welcome reception, relaxing with a pina colada or glass of wine and enjoying the company of colleagues. A conference name badge is required for entrance. Complimentary.

Conference Banquet @ Bacardi (E2)
Thursday, March 2, 18:30 - 22:30, depart at 18:00
Relish in a private party at Casa Bacardi, beginning with a cocktail reception and a private tour of the 17,000 square foot “Cathedral of Rum.” On the property, MicroRad guests will experience the sights, sounds, smell and taste of Bacardi’s rich history, including everything from vast fermentation vats to high-speed bottling machinery at work. The tour includes a walk through Bacardi’s history and development landmarks at the family museum. An exquisite dinner featuring local favorites awaits our guests at the lofty, bat-like pavilion featuring a 1930s art deco bar. The evening ends with a stroll through the Bacardi gift shop stocked with works of local artists and artisans, as well as Bacardi favorites.

Charters will depart the Wyndham Condado Hotel at 18:00, returning at 22:30. Cost per person: US$60.00

Camuy Caves (S2)
Saturday, March 4, depart at 08:00
Charters will take MicroRad guests to the northwestern part of the island to the destination of Camuy Cave Park. Known as one of the most massive cave networks in the Western Hemisphere, including the recent development of two crater-like sinkholes and caves, the caverns are easily visited with modern trolleys that transport guests down to the entrance of the caves. Guests will enjoy a guided tour of the great cavern system, featuring the underground river, huge stalagmites and rocky ravines. After surfacing via the trolleys, guests will have an opportunity to purchase refreshments and souvenirs before returning to San Juan.

Charters will depart the Wyndham Condado Hotel at 08:00 returning at 15:00. Cost per person: US$75.00 including entrance fee and boxed lunch. Guests should wear comfortable clothing and hiking shoes — please note that walkways within the caves could be wet and slippery; therefore, rubber soled shoes are recommended.

Tourists will experience a 45-minute drive through typical island towns as charters traverse the Puerto Rican landscape to El Yunque Rainforest. There you will see lush tropical vegetation, thousand-year-old trees, wild orchids, giant ferns, tropical hardwoods and waterfalls. From the heart of this breathtaking beauty, guests will experience the incessant yet delightful chattering of the “Coqui” and the chattering of unseen tropical birds. Tour guests may avail themselves to two main hikes in the rainforest — one, a 35-minute hike down Big Tree Trail or La Mina trail ending at La Mina Waterfalls, or two, a one-hour more athletic hike up to Mt. Britton where guests will enjoy the magnificent views of the forest and the northeastern coast.

Charters will depart the Wyndham Condado Hotel at 08:00, returning at 15:00. Cost per person: US$77.00, including entrance fee and a boxed lunch. Guests should wear comfortable clothing and hiking shoes, bringing snacks and water as needed for the hike.
REGISTRATION

All attendees, including invited presenters, must be registered to participate in MicroRad 2006. A conference name badge must be worn at all times while attending conference-related functions.

METHODS OF PAYMENT
Credit Cards — American Express, Mastercard and VISA will be accepted. Please note that if your credit card is declined or is invalid, an alternate means of payment must be used to remit fees.

Checks — Checks must be payable in US$ and drawn on a US bank. Checks should be made payable to MicroRad 2006.

Wire Transfers — Contact microrad06@ieee.org for wire instructions.

†Collective payments must be accompanied by a list of participant names and the details of payment for each person.
††Bank charges may not be deducted from the registration fee; attendees will be responsible for all bank charges.

REGISTRATION FEES (LATE)

<table>
<thead>
<tr>
<th>Category</th>
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<tr>
<td>IEEE Member</td>
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</tr>
<tr>
<td>Non-Member</td>
<td>$400.00</td>
</tr>
<tr>
<td>Student</td>
<td>$225.00</td>
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CANCELLATION POLICY
Cancellations received prior to end of day 10 February 2006 are entitled to a full refund less a $50.00 processing fee (not including social tour/event fees which will only be refunded if the ticket is resold). No refunds will be granted following 10 February 2006.

ON SITE REGISTRATION AND CHECK IN
All attendees are required to check in at the Registration Desk upon arrival at the conference site. Materials — including a name badge which must be worn at all times while in attendance, certificate of participation, and a receipt of payment — will be included in the registration packet provided to each registered participant.

Early check-in and registration packet pick up will be available Monday, February 27, from 5:30 - 7:00pm adjacent to the Royal Room — located across the sky bridge from the main hotel lobby, down one level.

INCLUSIONS
The participant registration fee includes:

• admission to conference sessions
• admission to the welcome reception (Tuesday)
• light continental breakfast each day
• coffee/tea breaks each day
• lunch each day
• one copy of the conference Proceedings on CD ROM.

REGISTRATION DESK
The Registration Desk will be open at the following times to assist you ...

Monday February 27 17:30 - 19:00
Tuesday February 28 07:00 - 18:00
Wednesday March 1 07:00 - 18:00
Thursday March 2 07:00 - 16:00
Friday March 3 07:00 - 18:00

QUESTIONS
Questions may be directed to the conference staff via email to microrad06@ieee.org, or via telephone to +1.281.251.5422.

TECHNICAL PROGRAM

A complete listing of MicroRad 2006 technical presentations may be found on the following pages. Poster presentations will be highlighted during each extended break. The Wyndham Condado is split between two buildings — the Ocean Wing (main hotel) and the Laguna Wing (across sky bridge, which is located on the second level of the Ocean Wing past the casino). Conference events and sessions will be held in the following locations ...

Technical Sessions  ... Royal Room (Laguna Ground Floor)
Continental Breakfast & Breaks  ... Garden Room and Terrace (adjacent to Royal Room)
Lunch  ... Condado Room (Ocean Wing lobby)
Reception  ... Laguna Pool
SESSION 1 — SENSOR CALIBRATION

08:00 Satellite Microwave Radiometer Calibration Monitoring for Long-Term Land Observations (invited)
Jet Propulsion Laboratory
Pasadena CA USA

08:20 JMR Noise Diode Stability After Three Years On-Orbit and Recalibration Methodology
Brown, S., S. Desai, S. Keihm and C. Ruf
Jet Propulsion Laboratory
Pasadena CA USA

08:40 Recalibration of Microwave Sounding Unit Using Simultaneous Nadir Overpasses for Climate Studies
Zou, C-Z.
NOAA/NESDIS
Camp Springs MD USA

09:00 Stabilization of the Brightness Temperature of a Calibration Warm Load for Space-Borne Microwave Radiometers
De Amici, G., and D. Kunkee
Northrop-Grumman Co
Redondo Beach CA USA

09:20 Thermal Tests of a Microwave External Calibration Load
McKague, D.S.
Ball Aerospace & Technologies Corp
Boulder CO USA

09:40 - 10:20 Break and Poster Presentations

POSTER PRESENTATIONS
L-Band and K-Band Correlated Noise Calibration System (CNCS) Architecture
De Roo, R., C. Ruf, B. Lim, L. van Nieuwstadt, C. Wineland, S. Giovanni and K. Sabet
The University of Michigan
Ann Arbor MI USA

Experimental Validation of Fringe-Washing Calibration Techniques in Aperture Synthesis Radiometry
Kainulainen, J., R. Butora, K. Rautiainen and M. Hallikainen
Helsinki University of Technology
Espoo Finland

Simple Calibration Scheme for a Fully Polarimetric Correlating Radiometer
Pham, H., R.D. De Roo and A.W. England
University of Michigan
Ann Arbor MI USA

Calibration and Validation of the NOAA-18 Microwave Radiometers
Mo, T.
NOAA/NESDIS
Camp Springs MD USA

SMOS Calibration Subsystem FM Characterisation
Helsinki University of Technology
Espoo Finland
SESSION 2 — INSTRUMENTS AND ADVANCED TECHNIQUES

10:20  A New L-Band Radiometer for Sea Salinity and Soil Moisture Measurements (invited)
Skou, N., and S.S. Søbjærg
Technical University of Denmark
Lyngby Denmark

10:40  MIRAS Functional Test Results for the SMOS Mission (invited)
Martin-Neira, M., I. Corbella, S. Beraza and J. Benito
European Space Agency / ESTEC
Noordwijk Netherlands

11:00  Ground Calibration of Flight Models of Reference Radiometer of MIRAS
Colliander, A., J. Suomela, K. Veijola, J. Kettunen, L. Ruokokoski, V. Kangas, J. Lahtinen and M. Hallikainen
Helsinki University of Technology
Espoo Finland

11:20  Geostationary Passive Microwave Observation System Simulation Experiment (invited)
University of Colorado
Boulder CO USA

11:40  LEO Microwave Imager and Sounder for Operational Meteorological Applications and Climate Research
Goutoule, J-M., L. Costes, C. Bredin, C. Prigent and U. Klein
EADS Astrium
Toulouse France

12:00 - 13:30  Lunch Break

POSTER PRESENTATIONS

Radiometric Performance of Interferometric Synthetic Aperture Radiometer HUT-2D
Kainulainen, J., K. Rautiainen and M. Hallikainen
Helsinki University of Technology
Espoo Finland

MIRAS Airborne Demonstrator
Ribó, S., M. Martín-Neira, I. Cabeza, S. Tauriainen and N. Duffo
ESA/ESTEC
Noordwijk Netherlands

Multi-Sensor Microwave Soil Moisture Remote Sensing Using NASA's Combined Radar/Radiometer (ComRAD) System
O’Neill, P.E., R.H. Lang, K.R. Carver, M. Kurum and C. Utka
George Washington University
Washington DC USA

Handheld L-Band Microwave Radiometer
Chikando, E.N., J.R. Piepmeier, E. Levine and C. White
Morgan State University
Baltimore MD USA

Present and Future Research and Technology Development in CNES for Microwave Radiometer
Goldstein, C., M. Trier, A. Maestrini and J-C. Orlhac
DCT/SI/AR
Toulouse France

The Development of Radiophysical Methods for the Polarization (including stereo) Images Acquisition Millimeter Range
Russian Academy of Sciences
Fryazino Moscow Region Russia
TUESDAY, FEBRUARY 28, 2006 • 13:30 - 15:10

SESSION 3 — INSTRUMENTS AND RFI MITIGATION

13:30  Spectrum Management and Interference Mitigation in Passive Earth Remote Sensing (invited)
       Gasiewski, A.J.
       University of Colorado
       Boulder CO USA

13:50  Evolution of the Global RF Environment and Considerations for Space Based Radiometer Design Below 20 GHz (invited)
       Kunkee, D.
       The Aerospace Corporation
       Los Angeles CA USA

14:10  Agile Digital Detector for RFI Mitigation (invited)
       Ruf, C.S., S. Misra and R. De Roo
       University of Michigan
       Ann Arbor MI USA

14:30  The Iowa State University Direct Sampling L-Band Digital Radiometer
       De Roo, R., B.K. Hornbuckle and C. Erbas
       University of Michigan
       Ann Arbor MI USA

14:50  A Prototype Geostationary Synthetic Thinned Aperture Radiometer (GeoSTAR) for Atmospheric Temperature Sounding
       Tanner, A.B., B.H. Lambrigsten, S.T. Brown, W.J. Wilson,
       J.R. Piepmeier, C.S. Ruf and B. Lim
       Jet Propulsion Laboratory
       Pasadena CA USA

15:10 - 15:50  Break and Poster Presentations

POSTER PRESENTATIONS

Interference Measurements at L-Band Using Synthetic Aperture Radiometry
       Rautiainen, K., J. Pallonen, S. Tauriainen, J. Kainulainen, R. Butora and M. Hallikainen
       Helsinki University of Technology
       Espoo Finland

Concept of AMSR Follow-On Instrument for the GCOM-W Satellite
       Imaoka, K., M. Kachi, A. Shibata, T. Kimura, M. Kasahara, Y. Iida, Y. Tange and H. Shimoda
       Japan Aerospace Exploration Agency
       Tokyo Japan

Interference Measurements at L-Band Using Synthetic Aperture Radiometry
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       Japan Aerospace Exploration Agency
       Tokyo Japan
SESSION 4 — EXPERIMENTAL CAMPAIGNS

15:50 The Use of Microwave Radiometers in Experimental Campaigns for Atmospheric Research: From Radiometer Intercomparisons to Studies Dedicated to Clouds Studies (invited)
   Crewell, S., D. Engelbart and U. Löhnert
   University of Munich
   Munich Germany

16:10 The 2004 North Slope of Alaska Arctic Winter Radiometric Experiment: Overview and Highlights (invited)
   Westwater, E.R., D. Cimini, V. Mattioli, A. Gasiewski, M. Klein, V. Leuski and J. Liljegren
   CIRES-CU/NOAA ESRL
   Boulder CO USA

16:30 AMSR-E Calibration and Validation Using the NOAA Polarimetric Scanning Radiometer System
   Klein, M., A.J. Gasiewski, B.B. Stankov, V. Leuski, V. Irisov, B.L. Weber, G.A. Wick, V. Zavorotny, T. Wilheit, D.J. Cavalieri, D. Cline, T.J. Jackson, J. Comiso and E.S. Lobl
   NOAA ESRL
   Boulder CO USA

16:50 Measurements of Soil Moisture in Australia Using the Airborne Polarimetric Emirad L-Band Radiometer
   Søbøjerg, S.S., J.E. Balling and N. Skou
   Technical University of Denmark
   Lyngby Denmark

17:10 APMIR C- and X-Band Data from SMEX05/POLEX Near Des Moines, Iowa
   Naval Research Laboratory
   Washington DC USA

POSTER PRESENTATIONS

SMOSREX Field Experiment for Soil Moisture and Land Surface Processes Remote Sensing: Status and Long Term Features of the Experiment
   CESBIO
   Toulouse France

Teaching and Conducting Scientific Research: An Experience in Joint USA-Russia-Bulgaria-Holland-Ukraine International Collaboration Between the Universities and Academic Institutions in GIS and Microwave and Optical Remote Sensing from Spacecraft, Piloting and Unmanned Aircraft Platforms and Rovers
   Russian Academy of Sciences
   Fryazino Moscow Region Russia
SESSION 5 — SATELLITE MISSIONS: SALINITY AND SOIL MOISTURE

08:00  The Soil Moisture and Ocean Salinity Mission Current Status (invited)
Kerr, Y.H., P. Waldteufel, J-P. Wigneron, F. Cabot, J. Font and M. Berger
CESBIO (CNES-CNRS-IRD-UPS)
Toulouse France

08:20  Aquarius: A Mission to Monitor Sea Surface Salinity from Space (invited)
Le Vine, D.M., G.S.E. Lagerloef, F. Pellerano, S. Yueh and R. Colomb
NASA Goddard Space Flight Center
Greenbelt MD USA

08:40  The Hydros Soil Moisture and Freeze/Thaw Mission: Science Algorithm Development and Status (invited)
Entekhabi, D., E. Njoku and P. O’Neill
Jet Propulsion Laboratory
Pasadena CA USA

09:00  coSMOS: Measurement Requirements and First Results
Berger, M., Y. Kerr and J. Walker
ESA/ESTEC
Noordwijk Netherlands

09:20  Sea Surface Salinity Retrieval from Space: Potential Synergetic Use of GNSS-R Signals to Improve the Sea State Correction and Application to the SMOS Mission (invited)
Camps, A., M. Caparrini, R. Sabia and G. Ruffini
Polytechnic University of Catalonia (UPC)
Barcelona Spain

09:40 - 10:20  Break and Poster Presentations
SESSION 6 — SEA SURFACE

10:20  Is Sea Spray a Factor in Microwave Backscatter from the Ocean?
      Plant, W.J., W.C. Keller and W.E. Asher
      University of Washington
      Seattle WA USA

10:40  Impact of Sea Surface Roughness on Passive Remote Sensing of the Ocean Surface Salinity at L-Band
      Reul, N., and B. Chapron
      Institut Francais de recherche et d’Exploitation Plouzane France

11:00  Physical Ocean Retrievals for WindSat
      Meissner, T., and F. Wentz
      Remote Sensing Systems
      Santa Rosa CA USA

11:20  WindSat Wind Vector Retrievals in the Presence of Clouds
      Jelenak, Z., T. Mavor, L. Connor and P.S. Chang
      NOAA/NESDIS/ORA
      Camp Springs MD USA

11:40  An Algorithm to Retrieve Wind Speed Inside Storms by Using 6 and 10 GHz Data of AMSR
      Shibata, A.
      Earth Observation Research Center / JAXA
      Tokyo Japan

12:00 - 13:30  Lunch

POSTER PRESENTATIONS

Macroscopic Microwave Model of Foam with Distributed Parameters
      Raizer, V.
      Zel Technologies/NOAA
      Fairfax VA USA

Azimuthal Variation of the Emissivity of Foam from C and X Band Polarimetric Measurements
      Naval Research Laboratory
      Washington DC USA

Azimuthal Dependence of the Microwave Emission from Foam Generated by Breaking Waves at 18.7 and 37 GHz
      Colorado State University
      Fort Collins CO USA

Evaluation of Marine Surface Winds Observed by Active and Passive Microwave Sensors on ADEOS-II
      Ebuchi, N.
      Hokkaido University
      Sapporo Japan
WEDNESDAY, MARCH 1, 2006 • 13:30 - 15:10

SESSION 7 — SEA ICE AND EM OCEAN MODELING

13:30 Characterizing WindSat Polarimetric Measurements Over Land and Ice (invited)  
Gaiser, P.W., and L. Li  
Naval Research Laboratory  
Washington DC USA

13:50 Characterizing AMSR-E 89 GHz A-Scan and B-Scan Differences: Application to Sea Ice Maps (invited)  
Heygster, G., L. Kaleschke and S-E. Ehlers  
University of Bremen  
Bremen Germany

14:10 Electromagnetic Modeling of Scattering by Non-Linear Waves on the Sea Surface  
Fuks, I., V. Zavorotny and A. Voronovich  
Zel Technologies and NOAA ESRL  
Boulder CO USA

14:30 Surface Curvature in Rough Surface Scattering (invited)  
Elfouhaily, T.M.  
University of Miami  
Miami FL USA

14:50 Model of the Radiometric Signal from the Sea Surface in the Presence of Currents (invited)  
Irisov, V.  
Zel Technologies and NOAA ESRL  
Boulder CO USA

15:10 - 15:50 Break and Poster Presentations

POSTER PRESENTATIONS

Potential Benefits of WindSat Data for Sea Ice Observation  
Partington, K., N. Walker, P. Clemente-Colon and Z. Jelenak  
National Ice Center  
Washington DC USA

Comparison of Sea Ice and Atmospheric Parameters Retrieved from Satellite Microwave Observations Against Operational Products from Canadian Weather and Ice Services  
Shokr, M.  
Environment Canada  
Toronto Canada

Present Applications and Future Plans for the Use of Passive Microwave Satellite Observations at the National Ice Center  
Clemente-Colón, P.  
National Ice Center  
Washington DC USA

Modeling of Brightness Temperature Variations Over the MIZ and Retrieval Algorithms for Sea Ice and Atmospheric Parameters  
Mitnik, L.M., and M.L. Mitnik  
V.I. Il’ichev Pacific Oceanological Institute  
Vladivostok Russia

Comparison of Sea Ice and Atmospheric Parameters Retrieved from Satellite Microwave Observations Against Operational Products from Canadian Weather and Ice Services  
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Mitnik, L.M., and M.L. Mitnik  
V.I. Il’ichev Pacific Oceanological Institute  
Vladivostok Russia
SESSION 8 — SNOW COVER

15:50  An Extensive Ground-Based Multi-Frequency Radiometer Campaign of Snow (invited)
Hallikainen, M., P. Lahtinen, T. Piepponen, L. Honkavaara and A. Schäfer
Helsinki University of Technology
Espoo Finland

16:10  Multifrequency Microwave Emission from the Antarctic Plateau (invited)
Macelloni, G., M. Brogioni, P. Pampaloni and E. Santi
IFAC-CNRS
Florence Italy

16:30  Snow Cover Properties in the Colorado Rocky Mountains Using NOAA Polarimetric Scanning Radiometer Measurements
Stankov, B.B., A.J. Gasiewski, D. Cline, B.L. Weber, G.A. Wick and M. Klein
NOAA ESRL
Boulder CO USA

16:50  CoSMIR Measurements of Precipitable Water and Surface Emissivities Over Snow-Covered Sierra Mountains
Wang, J.R., P.E. Racette, J.E. Piepmeier, B. Monosmith and W. Manning
NASA Goddard Space Flight Center
Greenbelt MD USA

17:10  Spatial Microwave Brightness Temperature Variations of Boreal Forests Under Dry Snow Cover Conditions
Lemmetyinen, J., J. Pulliainen, J-P. Kärnä, S. Tauriainen, J. Piilfyllyc and M. Hallikainen
Helsinki University of Technology
Espoo Finland

POSTER PRESENTATIONS

Microwave Signature of Polar Ice Sheets at Ku and S Bands
Bignami, C., P. Ferrazzoli, N. Pierdicca and L. Pulvirenti
University “La Sapienza” of Rome
Rome Italy

Snow Characterization on a Global Scale with Passive Microwave Satellite Observations
Cordisco, E., C. Prigent and F. Aires
CNRS/IPSL
Paris France

Spatial Mapping of Snow Water Equivalent and Snow Depth Over Large Areas by Assimilating AMSR-E Observations with Synoptic Weather Station Data
Pulliainen, J., J-P. Kärnä, J. Koskinen, P. Pylkkö and M. Hallikainen
Helsinki University of Technology
Espoo Finland

Observed Scaling Behavior of Snow and Soil Moisture Signatures from the CLPX and NAFE Campaigns
Kim, E.J., M. Tedesco and J. Walker
NASA Goddard Space Flight Center
Greenbelt MD USA

The Effect of Vegetation Cover on Snow Cover Mapping from Passive Microwave Data
Ghed Ira, H., J.C. Arevalo, T. Lakhankar and R. Khanbil Vardi
City University of New York
New York NY USA

Improvement in Estimating Snowpack Properties with SSM/I Data and Landcover Using an Artificial Neural Network
Azar, A.E., H. Ghedira, T. Lakhankar and R. Khanbilvardi
NOAA-CREST
New York NY USA
THURSDAY, MARCH 2, 2006 • 08:00 - 09:40

POSTER PRESENTATIONS
Validation of AMSR-Derived Soil Moisture: Lessons from SMEX02, SMEX03 and SMEX04
Lakshmi, V., J. Bolten and L. Guijarro
University of South Carolina
Columbia SC USA

Surface Topography and Mixed Pixel Effects on the Simulated L-Band Brightness Temperatures
Talone, M., A. Camps, M. Vall-Ilossera, S. Monerris and P. Ferrazzoli
Polytechnic University of Catalunya (UPC)
Barcelona Spain

Effect of Sub-Pixel Variability of NDVI and Land-Cover on Soil Moisture Retrieval from RADARSAT-1 Data
Lakhankar, T., H. Ghedira, A. Azar and R. Khanbilvardi
NOAA-CREST
New York NY USA

SESSION 9 — LAND: SOIL AND VEGETATION

08:00 Observations of Land Surface Passive Microwave Polarimetry (invited)
Jackson, T.J., P. Narvekar, R. Bindlish and L. Li
USDA ARS Hydrology and Remote Sensing Lab
Beltsville MD USA

08:20 The Effect of Intercepted Precipitation on the Microwave Emission of Maize at L-Band
Hornbuckle, B.K., A.W. England and M.C. Anderson
Iowa State University of Science and Technology
Ames IA USA

08:40 Soil Moisture Retrieval Using L-Band Radiometry: Dependence on Soil Type and Moisture Profiles: Results from the MOUSE 2004 Field Experiment
Monerris, A., M. Vall-Ilossera, A. Camps, R. Sabia, R. Villarino, M. Cardona, E. Alvarez and S. Sosa
Universitat Politècnica de Catalunya
Barcelona Spain

09:00 A Simple Modeling of a Bare Soil Emission at L-Band and Soil Moisture Retrieval on the SMOSREX Site
Escorihuela, M.J., Y. Kerr, P. de Rosnay, J.P. Wigneron, J.C. Calvet and F. Lemaitre
Centre d’Etudes Spatiales de la BIOSphere
Toulouse France

09:20 A Large Scale Monitoring of Earth’s Surface Parameters by Using Multitemporal AMSR-E Data (invited)
Paloscia, S., G. Macelloni, S. Pettinato and E. Santi
IFAC-CNR
Firenze Italy

09:40 - 10:10 Break and Poster Presentations
SESSION 10 — EM MODELING OF LAND AND CRYOSPHERE

10:20  Dependence of Brightness Temperature on Bistatic Scattering with Applications to Antarctica (invited)
       Mätzler, C., and P.W. Rosenkranz
       University of Bern
       Bern Switzerland

10:40  Active/Passive Modeling of Terrain (invited)
       Lang, R.H.
       George Washington University
       Washington DC USA

11:00  Modeling and Measuring the Microwave Characteristics of Arid Surfaces
       Grody, N.
       NOAA/NESDIS
       Camp Springs MD USA

11:20  Development of a Polarimetric Emission Model for Rough Surface Based on Advanced Integral Equation Model
       Chen, K-S., T-D. Wu and J.C. Shi
       National Central University
       Chung-Li Taiwan

11:40  Scattering and Emission in Snow Based on QCA/DMRT and Numerical Maxwell Model of 3 Dimensional Simulations (NMM3D) (invited)
       Liang, D., K. Tse, Y. Tan, L. Tsang and K.H. Ding
       University of Washington
       Seattle WA USA

12:00 - 13:30  Lunch

POSTER PRESENTATIONS

Flagging the Topographic Impact on the SMOS Signal
       Coret, L., Y.H. Kerr, P. Richaume and J-P. Wigneron
       CESBIO (CNES-CNRS-IRD-UPS)
       Toulouse France

An Integrated Snow Radiance and Snow Physics Modeling Framework for Cold Land Surface Modeling
       Kim, E.J., and M. Tedesco
       NASA Goddard Space Flight Center
       Greenbelt MD USA

The Microwave Response to Volume Density of Dry Snow and Man-Made Snow-Like Media
       Golunov, VA.
       Russian Academy of Sciences
       Fryazino Moscow Region Russia
POSTER PRESENTATIONS
Assessments of Special Sensor Microwave Imager and Sounder (SSMIS) Data for NOAA Operational Applications
Yan, B., and F. Weng
QSS Group Inc
Camp Springs MD USA

Relative Information Content of the Advanced Technology Microwave Sounder, the Advanced Microwave Sounding Unit and the Microwave Humidity Sounder
Kleespies, T.J.
NOAA/NESDIS
Camp Springs MD USA

Modeling Microwave Fully-Polarimetric Observations of a Sea Surface: A Neural Network Approach
Pulvirenti, L., F.S. Marzano and N. Pierdicca
University “La Sapienza” of Rome
Rome Italy

SESSION 11 — RETRIEVAL METHODOLOGIES AND RADIANCE ASSIMILATION I

13:30 Recent Advances in the Use of Microwave Radiances in Numerical Weather Prediction (invited)
English, S.
Met Office
Exeter UK

13:50 Uses of Satellite Microwave Measurements for Weather and Climate Studies (invited)
Weng, F.
NOAA/NESDIS Office of Research & Appls
Camp Springs MD USA

14:10 The Assimilation of SSMI and SSMIS Radiances at the Met Office
Bell, W., S. English and S. Swadley
Met Office
Exeter UK

14:30 Snow and Sea Ice Microwave Emissivity at AMSU Frequencies: Airborne Observations
Harlow, R.C.
Met Office
Exeter UK

14:50 A Possible Suite of Algorithms for the Retrieval of Water Vapour Using Saphir OnBoard Megha-Tropiques
Aires, F., C. Prigent and R. Roca
CNRS/IPSLL
Paris France

15:10 - 15:50 Break and Poster Presentations
SESSION 12 — RETRIEVAL METHODOLOGIES AND RADIANCE ASSIMILATION II

15:50 Antenna Pattern Synthesis and Deconvolution of Microwave Radiometer Imaging Data
   Swift, C.T., M.A. Goodberlet and S.C. Reising
   University of Massachusetts Amherst
   Amherst MA USA

16:10 The Relationship Between Space-Time Changes in Microwave Sea Surface Temperature and Air-Sea Heat Flux in the Labrador Sea
   Emery, W.J., P. Brandt, A. Funk and C. Boening
   University of Colorado
   Boulder CO USA

16:30 The Wet Tropospheric Correction for Altimetry in Coastal and Inland Water Regions
   Obligis, E., C. Desportes and L. Eymard
   Collecte Localisation Satellites
   Ramonville St-Agne France

16:50 Exploiting Bayesian Estimators to Retrieve Atmospheric and Sea Parameters from Microwave Radiometers (invited)
   Pierdicca, N., L. Pulvirenti and F. Silvio Marzano
   University “La Sapienza” of Rome
   Rome Italy

17:10 1D-VAR Retrieval of Temperature and Humidity Profiles from Ground-Based Microwave Radiometers
   Hewison, T.
   Met Office
   Exeter UK

POSTER PRESENTATIONS

Geographical Analysis of Systemic Errors in the Wet Tropospheric Correction
   Obligis, E., L. Eymard, S. Labroue and N. Tran
   Collecte Localisation Satellites
   Ramonville St-Agne France

Ground-Based Multi-Frequency Microwave Radiometry of Rainfall: Model-Based Analysis of Profile Retrieval Information Content
   Marzano, F.S., A. Memmo, S. Di Michele and P. Bauer
   University “La Sapienza” of Rome
   Rome Italy
POSTER PRESENTATIONS
Measurements and Retrievals from a New 183-GHz Water Vapor Radiometer in the Arctic
Cadeddu, M.P., J.C. Liljegren and A. Pazmany
Argonne National Laboratory
Argonne IL USA

An Operational G-Band (183 GHz) Water Vapor Radiometer
Pazmany, A.L.
ProSensing Inc.
Amherst MA USA

Improving the Modeling of Oxygen-Band Absorption: A Model-Measurement Comparison
Cadeddu, M.P., K. Cady-Pereira, S. Clough and J.C. Liljegren
Argonne National Laboratory
Argonne IL USA

SESSION 13 — ATMOSPHERE: TEMPERATURE AND HUMIDITY SOUNDING I

08:00  Retrievals of Atmospheric Temperature and Water Vapor Profiles in the Arctic (invited)
Liljegren, J.C., M.P. Cadeddu and A. Pazmany
Argonne National Laboratory
Argonne IL USA

08:20  Ground-Based Millimeter- and Submillimeter-Wave Observations of the Arctic Atmosphere (invited)
Cimini, D., E.R. Westwater, A.J. Gasiewski, M. Klein, V. Leuski, V. Mattioli and S. Dowlatshahi
CU/CIRES - NOAA/ETL
Boulder CO USA

08:40  Microwave Remote Sensing of Atmospheric Water from the Ground to the Mesosphere (invited)
Kaempfer, N., A. Haefele, C. Matzler, L. Martin and M. Schneebeli
University of Bern
Bern Switzerland

09:00  Accurate Ground Based Tropospheric Profiling with the RPG-HATPRO 14 Channel Filterbank Radiometer
Rose, T.
RPG Radiometer Physics GmbH
Meckenheim Germany

09:20  Measurement Uncertainty and Stability of a Miniaturized Water Vapor Radiometer Based on MMIC Technology
Iturbide-Sanchez, F., S.C. Reising, S. Padmanabhan and R.W. Jackson
Colorado State University
Fort Collins CO USA

09:40 - 10:20  Break and Poster Presentations
10:20 On the Use of Microwave Radiometry in Non Precipitating Atmosphere: Recent Results and Open Issues (invited)

Eymard, L., and F. Karbou
CNRS/IPSL/LOCEAN
Paris France


Boukabara, S.-A., F. Weng and Q. Liu
IMSG Inc @ NOAA/NESDIS/OR
Camp Springs MD USA

11:00 Potential of AMSU-A and -B Brightness Temperatures for Monitoring the Monsoon Variability

Eymard, L., F. Karbou, S. Janicot and P. Terray
CNRS/IPSL/LOCEAN
Paris France

11:20 Characterizing Atmospheric Turbulence and Instrumental Noise Using Two Simultaneously Operating Microwave Radiometers

Nilsson, T., L. Gradinarsky and G. Elgered
Onsala Space Observatory
Onsala Sweden

11:40 Assessment of Clear Sky Atmospheric Attenuation Procedures for Propagation Application

Riva, C., L. Luini, C. Capsoni and A. Martellucci
Politecnico di Milano
Milano Italy

12:00 - 13:30 Lunch
POSTER PRESENTATIONS

The Radiometric Signatures of the MHS Millimeter Wavelength Channels and Their Application on Precipitation Estimates
Zhao, L., J. Zhao, F. Weng and R.R. Ferraro
NOAA/NESDIS/OSDPP
Camp Springs MD USA

Passive Microwave and Multi-Frequency Radar Remote Sensing of Mid- to High-Latitude Precipitation
Johnson, B.T., G.W. Petty, G.S. Jackson and J.R. Wang
University of Maryland Baltimore County
Baltimore MD USA

A Physical Algorithm to Estimate Snowfall Using Passive Microwave Measurements
Kim, M-J., D-E. Chang, J.A. Weinman and W. Olson
NASA Goddard Space Flight Center
Greenbelt MD USA

Physical Validation of Microwave Properties of Winter Precipitation over Sea of Japan
Aonashi, K., H. Eito and M. Murakami
Meteorological Research Institute
Ibaraki Japan

Multi-Spectral Remotely Sensed Snowfall Rate Estimation
Mejia, Y.A., S. Mahani and R. Khanbilvardi
NOAA-CREST / CCNY-CUNY
New York NY USA

SESSION 15 — ATMOSPHERE: CLOUDS AND PRECIPITATION I

13:30 Comparisons of Simulated and Observed Millimeter-Wave Measurements of Convective Precipitation
Blackwell, W.J., L.J. Bickmeier, F.W. Chen and R.V. Leslie
Lincoln Laboratory
Lexington MA USA

13:50 Observing Ice in Clouds from Space
Ackerman, S., D. O’C. Starr, G. Skofronick-Jackson, F. Evans, J.R. Wang, P. Norris, A. da Silva and B. Soden
NASA Goddard Space Flight Center
Greenbelt MD USA

14:10 Parameterizations of Single Scattering Properties of Melting Snow Particles for Microwave Remote Sensing of Precipitation
Kim, M-J., B. Johnson, G. Skofronick-Jackson and J.R. Wang
NASA Goddard Space Flight Center
Greenbelt MD USA

14:30 Evaluation of GEM Mesoglobal with SSM/I Data in Rainy Atmospheres: Model to Satellite Approach
Burlaud, C., G. Deblonde and J-F. Mahfouf
Meteorological Service of Canada
Dorval Quebec Canada

14:50 Analysis of the Potential of Millimeter Wave Observations for Precipitation Estimates: Use of Simulated Brightness Temperatures Derived from a Mesoscale Cloud Model
CNRS LERMA
Paris France

15:10 - 15:50 Break and Poster Presentations
SESSION 16 — ATMOSPHERE: CLOUDS AND PRECIPITATION II

15:50 Classification of TRMM Precipitation Radar Profiles with Application to TRMM Microwave Imager Interpretation (invited)
Chandrasekar, V., B. Zafar and W. Olson
Colorado State University
Fort Collins CO USA

16:10 Precipitation Retrieval and Analysis of Severe Storm Events Based on Cloud Dynamics and Radiation Database (CDRD) Approach (invited)
Mugnai, A., F. Baordo, J. Hoch, C.M. Medaglia, A. Mehta, E.A. Smith and G.J. Tripoli
Istituto di Scienze dell’Atmosfera e del Clima Roma Italy

16:30 Satellite Microwave Radiometry of Precipitating Clouds: Model-Based Retrieval Techniques and Sensor Synergy (invited)
University “La Sapienza” of Rome
Rome Italy

16:50 The Global Satellite Mapping of Precipitation (GSMaP) Project
Okamoto, K., T. Iguchi, N. Takahashi, K. Iwanami and T. Ushio
Osaka Prefecture University
Sakai Japan

17:10 Discrimination of Cloud and Rain Liquid Water Path by Ground-Based Polarized Microwave Radiometry
Czekala, H.
RPG Radiometer Physics GmbH
Meckenheim Germany

POSTER PRESENTATIONS

Global Precipitation Map Using Satellite-Borne Microwave Radiometers by the GSMaP Project: Production and Validation
Kubota, T., S. Shige, H. Hasizume, T. Ushio, K. Aonashi, M. Kachi and K. Okamoto
Osaka Prefecture University
Sakai Osaka Japan

Synergy Between Dual-Frequency Altimeters and Radiometers for Precipitation Studies
Tournadre, J., and J.F. Piolle
IFREMER
Plouzane France

Developing a Remotely Sensed Rainfall Retrieval Algorithm Using Multi-Spectral Information
Hernandez, C., S. Mahani and R. Khanbilvardi
NOAA-CREST / CCNY-CUNY
New York NY USA

Three Dimensional Effects in Polarization Signatures as Observed from Precipitating Clouds by Low Frequency Microwave Radiometer
Battaglia, A., C. Simmer and H. Czekala
University of Bonn
Bonn Germany

Analysis and Improvement of Cloud Models for Brightness Temperature Simulations
Basili, P., S. Bonafoni, V. Mattioli, P. Ciotti and E.R. Westwater
Università di Perugia
Perugia Italy