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Map of meeting rooms .................................... Inside back cover
On behalf of the organizing committee, it is my pleasure to welcome you to the beautiful Islands of Hawaii. Besides the beauty of the State, we are delighted to offer you an informative conference and stimulating technical sessions that discuss state-of-the-art developments in wireless communications and its associated technologies. This is our second conference and this year we are honored to have our sister society “The Applied Computational Electromagnetics Society” (ACES) hold its annual meeting jointly with us. With our emphases on the electromagnetic aspects of wireless communications, antennas, propagation, and microwave components, the joint activities with ACES are complementary and provide broader benefits and a more comprehensive program for addressing research and development needs of this phenomenally growing wireless communications technology. In addition, short courses and a plenary session will help further complement the technical program with broader presentations as well as with the basic educational and training needs in some of the emerging areas of this technology. I truly hope that you will enjoy your stay in Hawaii and find the prepared technical program stimulating, informative and of lasting favorable impact on future research in the wireless communications and applied computational electromagnetics areas.

Hawaii tropical islands offer ample opportunities to relax and enjoy the numerous tourist and sight seeing programs. Possibly more than any place else on earth, Hawaii offers a variety of activities that fit every need, taste, desire, and mode of relaxation. So, please take advantage of your stay and enjoy the breathtaking sites that you can only find and see in Hawaii. To ensure your enjoyment, however, we prepared a couple of very popular tourist attractions, including a visit to the Polynesian Cultural Center, the number one tourist attraction in Hawaii, and also a luau dinner as it is one of the traditional dinners for visitors. Our staff will be delighted to help you schedule other world famous and very popular site seeing tours including a visit to the USS Arizona at Pearl Harbor, Hanauma Bay Nature Preserve for snorkeling, and the north shore for world class surfing.

We are very happy to welcome you to Hawaii and we certainly hope that you will enjoy the breathtaking sites in Honolulu, and find the scheduled technical sessions stimulating and pertinent to our focus on emphasizing the significant role of electromagnetics research in enabling the next generation wireless communications technology. The conference co-chair, members of the organizing committee, the large number of the students volunteers, and I are looking forward to welcoming you to Hawaii.

Magdy F. Iskander
General Chair
STEERING COMMITTEE

General Chair
Magdy F. Iskander
University of Hawaii at Manoa
iskander@spectra.eng.hawaii.edu
Phone: (808) 956-3434

ACES Co-Chairs
Atif Z. Elsherbeni
University of Mississippi
atef@olmiss.edu

IEEE-APS Co-Chairs
Michael Jensen
Brigham Young University
jensen@ee.byu.edu

IEICE, TG-EMT Co-Chairs
Makoto Ando
Tokyo Institute of Technology, Japan
mando@antenna.ee.titech.ac.jp

ACES Liaison
Tapan Sarkar
Syracuse University
tksarkar@syr.edu

MTT-S Liaison
Barry S. Perlman
U.S. army- RDECOM
barry.perlman@us.army.mil

ARO Liaison
Dev Palmer
U.S. army -ARO
dev.palmer@us.army.mil

European Network ACE Liaison
Juan R. Mosig
Laboratory of Electromagnetics and Acoustics, Switzerland
Juan.Mosig@epfl.ch

Technical Program Administrators
Zhengqing Yun
University of Hawaii at Manoa
zqyun@spectra.eng.hawaii.edu
HAWAII GENERAL INFORMATION

OAHU is the main point of entry for Hawaii and home to over 75% of the Hawaiian population. It has maintained its importance as a naval base and was made famous when the Japanese bombing of Pearl Harbor occurred here on December 7, 1941. While it is more crowded than the nearby islands, Oahu is still home to some beautiful beaches, luxury resorts and is a great place to visit.

2005 IEEE/ACES Conferences Registration HOURS
Sunday....................April 3................. 7:30 AM - 5:00 PM
Monday....................April 4................... 7:30 AM - 5:00 PM
Tuesday...................April 5................... 7:30 AM - 5:00 PM
Wednesday........April 6 ..................... 7:30 AM - 5:00 PM
Thursday ...............April 7.................... 7:30 AM -12:00 PM

LOCAL WEATHER
Hawaii has two seasons: the summer (dry season) and the winter (wet season). Both seasons are warm as there is very little variation in temperature year-round. But, the wet season can be daunting for the visitor, often bringing gray clouds and showers. The best bet for constant sun on Oahu is Waikiki Beach. The average temperature on Oahu for the month of April is 83 during the day and 69 in the evening.

TRANSPORTATION OPTIONS

Bus
Oahu has a municipal bus system called – what else? - The Bus. You can ride anywhere on the island for $2.00. For a private route map, check the local convenience or drug stores. For more information, call The Bus at (808) 848-5555.

Trolley
Two-hour tours of 20 sites in Oahu depart from the Hilton Hawaiian Village at 15 minute intervals every day between 8 AM and 4 PM.

Car/Limousine Service
Duke’s Limousine (www.dukeslimo.com)........ (808) 738-1878
Allstate............................................................. (808) 845-9301
Taxi Service
You can usually catch a taxi from any hotel. Restaurants will call a taxi for you. Drop rates are $1.50 and $1.50 per mile.

Allstate............................................................ (808) 845-9301
Rabi Transportation & Tour............................ (808) 922-4900
M W Transportation Inc.................................. (808) 593-8555
Royal Taxi & Tour Corporation...................... (808) 946-8282
Alpha Hawaii Taxi & Tours............................ (808) 923-1111
Charley’s Taxi & Tours................................... (808) 531-2333
HMK Taxi & Tours.......................................... (808) 591-1333

BUSINESS HOURS ON OAHU
Stores
10 or 11 AM to at least 5 PM Monday-Saturday with restricted hours on Sunday. Stores in Waikiki tend to keep later hours, especially during the tourist season.

Restaurants
Lunch 11:30 AM – 2:30 PM. Dinner 5:30 – 10 PM. Bars/Nightclubs until 2 AM, at which time that are legally required to stop serving alcohol. Clubs with cabaret licenses can stay open until 4 AM.

THINGS TO DO ON OAHU
(Please inquire with the hotel Concierge for more information.)

DOLE PLANTATION
Originally opened as a fruit stand in 1950, it re-opened to the public as Hawaii’s “Pineapple Experience” in 1989 after an extensive remodeling of its previous facilities. In May of 1997, Dole plantation completed another $125,000 interior renovation that simulates building facades patterned after old Haleiwa Town. Dole Plantation welcomes nearly one million visitors a year. Guests of the Plantation enjoy a variety of attractions and activities including the Pineapple Garden Maze, the Guinness Book of World Record’s 1998 “World’s Largest Maze;” informational displays and presentations about pineapple and the history of Dole; and the plantation center offering hundreds of unique pineapple related and Dole brand items, including the world famous “DoleWhip.” Every week, Dole Plantation sells more that 3,500 fresh Hawaii-grown pineapple for consumption at the store or for shipment around the world. It is near Wahiawa on the way to the North Shore, approximately a 45 minute drive from Waikiki. Admission to the Dole Plantation is free. Admission to the Maze is $5.00 Adults, $3.00 Children.
**HISTORIC CHINATOWN** There are several ways to tour the historic Chinatown district of Honolulu, the oldest its kind in the United States. Contact the Chinese Chamber of Commerce at (808) 533-3181 regarding their two-hour tours through the area every Sunday morning. Additionally, the Hawaii Heritage Center at (808) 521-2749 leads tours through the area on Friday mornings.

**HONOLULU ZOO** A top notch zoo located in downtown Honolulu, this is home to a number of endangered and local species. In the last few years, the African Savannah has been attracting visitors with its 10 acres filled with African Animals. The zoo is 43 acres in total and is often crowded. Go early to beat the masses.

**IOLANI PALACE** Iolani Palace was the official residence of King Kalakaua from 1882 until his death in 1891 and of his sister-successor, Queen Lili‘uokalani, until the overthrow of the Hawaiian Monarchy in 1893. It is an interesting site to visit for its preservation of the royal environs. Guided tours are available.

**KODAK HULA SHOW** This Waikiki institution started in 1937 as an opportunity for visitors to expose their Kodak film to performances of Hawaiian dance in an outdoor setting. The one hour free show includes young and old and offers brief instructions on the hula.

**NATIONAL CEMETERY OF THE PACIFIC** This crater is a national cemetery for 35,000 folks from Asia and the South Pacific who have been killed throughout three different wars. There are some famous and some unknown buried in the tombs here, and the headstones are marked accordingly. Be sure to read the text as you pass through.

**SEA LIFE PARK** This is a popular destination for visitors to Honolulu. Catch a bird’s eye view of the life of any of a number of aquatic species, including the dolphin, penguin and sea lion. This is 62 acres of marine life. A great place to bring kids as there is also a petting pool here. Regular Admission:

- Adults $24.96, Juniors 4-12 $12.48. At Splash U., you can touch, feed, and teach high flying dolphins how to jump, dance, and sing. $89.96 Adults, $77.48 Kids which includes admission to the park. At Sea Trek, you can walk in their Hawaiian Reef Tanks among a kaleidoscope of marine life. $89.96 Adults Minimum age is 12. Includes admission to the park. Dolphin Adventures allows you to learn about daily dolphin life and interact directly with them. $139.96 Adults. Minimum age is 13. Includes admission to the park. Parking is $3. Shuttle Service available from select Waikiki Hotels $5.
**USS Arizona Memorial**  This is a lengthy trip; but, well worth the time spent. You will wait at the visitor center for a shuttle to take you out to the Memorial of the USS Arizona, the historic ship whose sinking by the Japanese at Pearl Harbor on December 7, 1941 marked the US entrance into WW II. The ship is still partially submerged under the water and the memorial is a marker seated upon the hull. The wait is longer the later you arrive and, including the tour, can take up to 4 hours. The visitor center has some interesting pieces of the USS Arizona’s history to explore as you wait.

**Waikiki Aquarium**  Experience life under the sea in its entire splendor. The Waikiki Aquarium is home to one of the most impressive collections of underwater species. View the chambered nautilus, a shark, exhibit, and the endangered monk seal all at one location. A recent $3 million facelift has brought a reef environment to the park.

**Emergency Numbers**

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<thead>
<tr>
<th>Service</th>
<th>Phone Number</th>
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<tr>
<td>Ambulance/Fire/Police</td>
<td>911</td>
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<tr>
<td>AAA Emergency Road Service</td>
<td>(800) 222-4357</td>
</tr>
<tr>
<td>Child Crisis Service</td>
<td>(808) 521-2377</td>
</tr>
<tr>
<td>Handicapped Crisis Line</td>
<td>(808) 538-0279</td>
</tr>
<tr>
<td>Poison Control Center</td>
<td>(808) 941-4411</td>
</tr>
<tr>
<td>Rape Crisis Line</td>
<td>(808) 524-7273</td>
</tr>
<tr>
<td>Youth Crisis Hotline</td>
<td>(800) 843-5200</td>
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<tr>
<td>or (808) 521-4555</td>
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<td>Straub Doctors on Call – Van Dispatch for</td>
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<tr>
<td>Hospital and Hotel Clinics</td>
<td>(808) 971-6000</td>
</tr>
<tr>
<td>Queen’s Medical Center (24 Hour)</td>
<td>(808) 538-9011</td>
</tr>
</tbody>
</table>

**Social Events**

- **Welcome Reception**  Sunday, April 3
- **Polynesian Cultural Center**  Monday, April 4
- **Luau**  Tuesday, April 5
- **Banquet**  Wednesday, April 6
SHORT COURSES

April 3:  8:00 – 12:00 AM
1. Principles of mobile communication viewed under a Maxwellian context: Dr. Tapan K. Sarkar
2. Neural networks and their applications to electromagnetic modeling: Dr. Christos Christodoulou
3. Diversity Combining in Fading Channels: Dr. Lal Godara
4. Dielectric resonator antenna, theory and design: Dr. Ahmed Kishk

April 3:  1:00 – 5:00 PM
5. Finite element method in time and frequency domains for solution of electromagnetic field problems: Dr. Magdalena Salazar Palma
6. Use of higher order basis in solution of electromagnetic field problems: Dr. B. Kolundzija
7. Application of genetic algorithms in electromagnetics: Dr. Randy Haupt
8. Antennas for wideband and phased array applications: Dr. Ahmed Kishk and Dr. Atef Elsherbeni

SC-1:  PRINCIPLES OF MOBILE COMMUNICATION VIEWED UNDER A MAXWELLIAN CONTEXT (Tapan K. Sarkar, Syracuse University)

Nowadays, we hear frequently that we need to invent new antenna theory, or that antenna is a channel and it is something different from a conventional antenna and so on. However, from a Maxwellian point of view, antenna theory has been fixed as the northern star at least for a hundred years and even today what we called Maxwell’s equations has withstood the erosion and corrosion of progress. Even relativity had little effect as it is built in. Therefore introducing terminologies like Smart Antennas appears to lack a scientific justification. The objective of the short course is to present the Maxwellian point of view and initiate a dialog as to why the principles of mobile communication particularly dealing with MIMO and broadband channel modeling can be justified from a strictly scientific point of view. The following topics will be discussed in the half day course.

1. How does MIMO perform near field beamforming and how does it relate to ray tracing in near field analysis?
2. Are researchers modeling a perfectly dispersionless channel as we know air is dispersionless?
3. How does the Shannon Channel Capacity justify the existence of a 56 kilobit/sec modem currently installed in modern computers, communicating over a 3 kHz bandwidth telephone channel?
4. Reciprocity is a more powerful methodology than MIMO beamforming even in a complex near field electromagnetic scenario.
5. How does one accurately analyze the vector electromagnetic problem which is related to wireless than the scalar acoustic model which is not related to a wireless model?
6. Do we need to develop new communication techniques based on estimation rather than on detection?

7. Can the Sommerfeld analysis of an antenna radiating over an imperfect ground plane accurately validate the empirical Hata model and its derivatives, and accurately predict the experimental data of Okamura?

SC-2: NEURAL NETWORKS AND THEIR APPLICATIONS TO ELECTROMAGNETIC MODELING (Christos Christodoulou and Amalendu Patnaik, University of New Mexico)

Artificial neural network (ANN) methods have recently been recognized as a new alternative for RF and microwave modeling. These are now becoming an emerging tool in enhancing the effectiveness of computer-aided modeling and design of RF and microwave systems. In the last decade or so, ANNs have found several applications in the design of antennas as well. The dominating aspect in antenna technology is the search for mathematical models that will predict practical antennas more precisely and hence sharpen CAD techniques in manufacturing. ANN’s can learn and generalize from data allowing antenna and microwave circuit model development even when component formulas are unavailable. ANN models are easier to update as technology changes. ANNs are universal approximators allowing re-use of the same modeling technology for both linear and nonlinear problems. Yet, ANN models are simple and model evaluation is very fast. There is also an increased initiative in integrating of ANN technique with the existing numerical methods for the efficiency enhancement of the exiting computational models, such as, FEM, MOM, and FDTD. This tutorial will introduce the fundamentals of using ANNs for antenna analysis and design. This will also bring the participants to the forefront of this emerging field.

Presentation Outline:
1. Introduction and Overview
2. Neural Network Structures
3. Training of Neural Networks
4. Modeling and Optimization for Antenna Design
   a. ANN Models for Antenna Design
   b. ANN Models for Antenna Analysis
5. Smart Antenna Modeling
6. Application of ANN for Computational Electromagnetics
7. Concluding Remarks and Emerging Trends
In mobile communication channels the received signal is a combination of many components arriving from various directions due to multipath propagation resulting in a large fluctuation in the received signals. This phenomenon is called fading. In this tutorial a brief review of fading channels will be presented, distributions of the signal amplitude and the received power on an antenna will be developed, analysis of a single antenna noise limited as well as interference limited system in Rayleigh and Nakagami fading channels will be presented by deriving results for average bit error rate and outage probability. The results would show how fading affects the performance of a single antenna system.

Then a comprehensive analysis of diversity combining, which is a process of combining several signals with independent fading statistics to reduce the large attenuation of desired signal in the presence of multipath, will be presented. The diversity combining schemes described and analysed will include selection combiner, switched diversity combiner, equal gain combiner, maximum ratio combiner, optimal combiner, generalized selection combiner, cascade diversity combiner and macroscopic diversity combiner. Both noise limited and interference limited systems will be analysed in various fading conditions by deriving results for average bit error rate and outage probability.

Recently, interest in small efficient antenna has increased. One of the candidates is the dielectric resonator antenna (DRA), which is made of high dielectric constant materials and mounted on top of a ground plane or on a grounded dielectric substrate of lower permittivity. This antenna is more efficient than the microstrip antenna because of the absence of conducting edges. Also, wideband DRA are possible. The techniques used to achieve broadband DRA antennas are discussed. Some DRA’s has achieved over 50% bandwidth. The short course provides an overview for the development of the DRA. The theory and design principles and the radiation mechanisms will be discussed. Several excitation techniques are discussed with their applications to different DRA types. The DRA array design and performance are also considered.
The objective of this half day short course is to present the finite element method for the solution of electromagnetic field problems in the time and frequency domains. Particularly, the use of the entire domain associated Laguerre polynomials generate a time domain formulation that gets rid of the Courant stability condition and therefore generates an unconditionally stable time domain methodology without the time variable. Examples will be presented to illustrate the application of this new time domain technique. In addition, the frequency domain formulations will also be described and the use of Nedelec elements which generate a system matrix with low condition number will be outlined. Use of a higher order basis improves the arte of convergence. Finally, the use of an exact radiation condition in a finite element methodology will be presented for the solution of open region problems.

The objective of this half day short course is to illustrate the use of higher order basis functions which provides faster convergence. This is also true for finite-element and also for time domain techniques. For integral equations, it guarantees continuity of the charge. Results are presented to illustrate this point. A higher order basis function has a higher degree of continuity. For example, the pulse function is piecewise continuous function and is a polynomial of zero degree. The linear triangle function is a first order basis function as it is a polynomial of first degree. A higher order basis in this context will then deal with polynomials of degrees greater than one. We will deal with polynomials up to the ninth degree. Therefore, use of a higher order basis not only guarantees continuity of the function but also a few of its derivatives. However, we have to very careful in dealing with a higher order basis. This is because the charge is discontinuous at the feed point of an antenna and also at the end of the structure where the current with the appropriate orientation either goes to zero or has a singularity. Hence, the charge is discontinuous. We demonstrate in this course that use of higher order basis over electrically large patch sizes offer a computational advantage as the number of unknowns scales quite moderately with size and frequency. This is true not only for the solution of the integral form of Maxwell’s equations but also for the differential form. However, in using a higher order basis one has to be very careful as increasing the basis beyond a certain order may deteriorate the condition number of the matrix equation that needs to be solved for. Hence a compromise needs to be made between the choice of the order of the basis and the condition number of the matrix. It has been our experience that if the polynomials beyond the ninth order are not considered in the expansion, then the resulting matrix equations
are quite stable and can be solved in an accurate fashion. Both theoretical analysis and numerical examples will be presented to illustrate these subtle features.

**SC-7: APPLICATION OF GENETIC ALGORITHMS IN ELECTROMAGNETICS (Randy L. Haupt, The Pennsylvania State University)**

Numerical optimization helps us find the "best" design for a given application. Traditional optimization methods are based upon analytical formulations that were derived to find a local minimum. Most realistic designs today, however, have many local minima and a large assortment of variables. The genetic algorithm (GA) has caught on as a way to optimize practical designs. This course is intended to introduce the student to numerical optimization, GAs, and GA applications in electromagnetics problems.

1. Local optimizers and the advantages of GAs
2. Introduction to GAs – Algorithm details plus MATLAB implementation
3. Examples
4. Improvements:
   a. Parameter selection
   b. Multiple objective optimization
   c. Hybrid GA
5. Applications in electromagnetics – arrays, horns, reflectors, adaptive antennas
6. GA relatives:
   a. Particle swarm optimization
   b. Simulated annealing
   c. Ant colony optimization
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<tr>
<th>Time</th>
<th>AM Session</th>
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<tr>
<td>Mon</td>
<td>Technologies for Ultra-Wideband Communications</td>
<td>CEM for Applied Analysis and Synthesis</td>
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<td>Emerging Algorithms for MIMO Systems</td>
<td>Wide Band Antennas</td>
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<td>Special Session: Electromagnetic Modeling by WiPL-d</td>
<td>Phased Array and Active Antennas</td>
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<td>Advances in Time Domain Techniques</td>
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<td>Integral Equation Methods and Applications</td>
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<td>Tue</td>
<td>Plenary Session</td>
<td>MIMO and Diversity System Characterization</td>
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<td>Special Session: Technology for Emerging Commercial Millimeter Wave</td>
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<td>Special Session: Electromagnetic Modeling by FEKO</td>
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<td>Low Frequency Electromagnetic Applications</td>
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<td>Asymptotic and High Frequency Techniques</td>
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<td>Wed</td>
<td>Special Session: Communication Antenna Analysis and Design</td>
<td>MIMO Systems</td>
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<td>Hybrid CEM Techniques</td>
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<td>Fast and Efficient CEM Methods</td>
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<td>Design and Analysis of Circuit Architectures</td>
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<td>Propagation Channel Characterization</td>
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<td>Special Session: Recent Electromagnetics and Antenna activities in the European NET “ACE”</td>
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<td>Electromagnetic Analysis of Wave Phenomena</td>
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<td>Thu</td>
<td>Integrated Antennas for Portable Devices</td>
<td>Beamforming and Smart Antennas</td>
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<td>System Architectures and Analysis</td>
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<td>Electromagnetic Compatibility and Interferences</td>
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<td>Time</td>
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<tr>
<td>8:00</td>
<td>Performance of Ultra-Wideband Transmission with Pulse Position Amplitude Modulation and RAKE Reception</td>
<td>Wei Li, T. Aaron Gulliver, Hao Zhang, University of Victoria, Canada</td>
</tr>
<tr>
<td>8:20</td>
<td>Time Hopping QPSK Impulse Signal Transmission for Ultra Wideband Communication System in the Presence of Multipath Channel</td>
<td>Chaiyaporn Khemapatapan, Watit Benjapolakul, Chulalongkorn University, Thailand, Kiyomichi Araki, Tokyo Institute of Technology, Japan</td>
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<tr>
<td>8:40</td>
<td>Exploitation of Extra Diversity in UWB MB-OFDM System</td>
<td>Joo Heo, KyungHi Chang, Inha University, Korea</td>
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<tr>
<td>9:00</td>
<td>Source Localization using Reflection Omission in the Near-Field</td>
<td>Ziba Ebrahimian, Robert A. Scholtz, University of Southern California, USA</td>
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<tr>
<td>9:20</td>
<td>Position localization with impulse ultra wide band</td>
<td>Guoping Zhang, S. V. Rao, Radio and communication device, Institute for infocom research, Singapore</td>
</tr>
<tr>
<td>9:40</td>
<td>Coffee Break</td>
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<tr>
<td>10:00</td>
<td>Receiver Sites for Accurate Indoor Position Location Systems</td>
<td>Ziba Ebrahimian, Robert A. Scholtz, University of Southern California, USA</td>
</tr>
<tr>
<td>10:20</td>
<td>Characterization of the Ultra-Wide Band Channel</td>
<td>Marco Di Renzo, Giuliano Manzi, Wireless Embedded Systems Technologies, Italy, Mauro Feliziani, Fabio Graziosi, Fortunato Santucci, University of LAquila, Italy</td>
</tr>
<tr>
<td>10:40</td>
<td>Design and Performance Analysis of a UWB Tracking System for Space Applications</td>
<td>Jianjun Ni, NASA Johnson Space Center, USA, Richard Barton, University of Houston, USA</td>
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<tr>
<td>11:00</td>
<td>UWB Sampler for Wireless Communications and Radar</td>
<td>Jeong-Woo Han, Cam Nguyen, Texas A&amp;M University, USA</td>
</tr>
</tbody>
</table>
8:00  Precodings for Transmission Rate Increasing for MIMO Single Carrier Block Transmissions
Shusuke Narieda, Katsumi Yamashita, Osaka Prefecture University, Japan

8:20  Design of Synchronization Sequences in a MIMO Demonstration System
Guangqi Yang, Wei Hong, Haiming Wang, Nianzu Zhang, Southeast University, China

8:40  Compensation of Channel Information Error using First Order Extrapolation in Eigenbeam Space Division Multiplexing (E-SDM)
Toshihiko Nishimura, Takahiko Tsatsumi, Takeo Ohgane, Yasutaka Ogawa, Hokkaido University, Japan

9:00  Spatial Division Multiplexing of Space Time Block Codes for Single Carrier Block Transmission
Haiming Wang, Wei Hong, Xiqi Gao, Xiaohu You, Southeast University, China

9:20  Adaptive Channel Estimation for Multiple-Input Multiple-Output Frequency Domain Equalization
Xu Zhu, Fareq Malek, Yi Gong, The University of Liverpool, UK, Nanyang Technological University, Singapore, Yi Huang, The University of Liverpool, UK

9:40  Coffee Break

10:00 On MIMO Signal Processing for Adaptive W-CDMA and OFDM Wireless Transceivers
Danijela Cabric, Dejan Markovic, Robert W. Brodersen, UC Berkeley, USA

10:20 Performance Analysis of Adaptive Interleaving for MIMO-OFDM Systems
FengYe Hu, ShaXun Wang, Yang Liu, Jilin University, China

10:40 Adaptive MQAM Modulation for MIMO systems
Ramkumar Gowrishankar, M. Fatih Demirkol, University of Hawaii, USA

11:00 Multiuser Detectors for MIMO DS/CDMA Systems
Fang-Biau Ueng, Shang-Chun Tsai, Jun-Da Chen, NCHU, Taiwan

11:20 The Joint Space-Time Signal Detection Algorithm for MIMO DS-CDMA Systems with Multipath Fading Channels
Yung-Yi Wang, Ying Lu, St. John’s & St. Mary’s Inst. Of Tech., Taiwan, Jiunn-Tsair Chen, National Tsing Hua Univ., Taiwan
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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</table>
| 8:00  | Analysis of Dipole Antenna Printed on Thin Film by using Electromagnetic Simulators  
Mitsuo Taguchi, Yuki Matsunaga, Nagasaki University, Japan |
| 8:20  | Electrically Large Structure in WIPL-D -- Scattering Simulation of an Airplane  
Mengtao Yuan, Tapan K. Sarkar, Syracuse University, USA |
| 8:40  | Into the Twilight Zone: How Does WIPL-D Perform in Quasistatics?  
Ari Sihvola, Helsinki University of Technology, Finland, Tapan Sarkar, Syracuse University, USA, Branko Kolundzija, University of Belgrade, Yugoslavia |
| 9:00  | Extended Limits of WIPL-D on PCs  
Drazen S. Sumic, Branko M. Kolundzija, University of Belgrade, Yugoslavia |
| 9:20  | Efficient Analysis of Microwave Devices Based on Polygonal Modeling and WIPL-D Numerical Engine  
Miodrag Tasic, Branko Kolundzija, University of Belgrade, Yugoslavia |
| 9:40  | Coffee Break |
| 10:00 | Equalization of Numerically Calculated Element Patterns for Root-Based Direction Finding Algorithms  
Hossam A. Abdallah, Wasyl Wasylkiwskyj, Ivica Kopriva, The George Washington University, USA |
| 10:20 | WIPL-D Parallelization Effort  
Christopher Card, Black River Systems Company, USA |
| 10:40 | Beta Test Analysis of WIPL-DP  
Saad N. Tabet, NAVAIR, USA, Christopher Card, Black River Systems Company, USA |
| 11:00 | WIPL-D Results and Time Domain Response for an Impulse Radiating Antenna (IRA)  
Mary C. Taylor, Tapan K. Sarkar, Syracuse University, USA |
| 11:20 | Deep Ground Penetrating Radar (GPR) – WIPL-D Models of Buried Sub-Surface Radiators  
John Norgard, US Air Force Academy, USA, Michael Wicks, Air Force Research Laboratory, USA, Randy Musselman, US Air Force Academy, USA |
| 11:40 | High Performance Low Cost Ferroelectric Phase Shifters Designed for Simple Biasing  
Wayne Kim, Magdy Iskander, University of Hawaii, USA, Clifford Tanaka, Trex Enterprises, USA |
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<tr>
<th>Time</th>
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<tr>
<td>8:00</td>
<td>“Introduction to Antennas” – An Antenna Training DVD</td>
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<td>Alan Nott. BEE CEng, MIEE, Antuition Enterprises, Australia</td>
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<td>8:20</td>
<td>Shielding Effectiveness of Three Dimensional Gratings using</td>
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<td>the Periodic FDTD Technique and CPML Absorbing</td>
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<td>J. Alan Roden, J. Paul Skinner, Steven Johns, The Aerospace Corporation, USA</td>
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<tr>
<td>8:40</td>
<td>Hybrid Parallel Finite Difference Time Domain Simulation of Nanoscale Optical Phenomena</td>
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<td>M. C. Hughes, M. A. Stuchly, University of Victoria, Canada</td>
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<tr>
<td>9:00</td>
<td>A Comparative Study of RCS Computation Codes</td>
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</table>
|       | Tse Tong Chia, Teng Wah Ang, Kheng Hwee Lim, Sheng Chye Philip Ou, Kar Heng Yar  
|       | DSO National Laboratories, Singapore, David ROWSE, Matthew AMOS, Alan KEEN, Neil Pegg, Andres Thain, BAE Systems, UK |
| 9:20  | Modeling an HF NVIS Towel-Bar Antenna on a Coast Guard                   |
|       | Patrol Boat - A Comparison of WIPL-D and the Numerical Electromagnetics Code (NEC) |
|       | Darla Mora, Christopher Weiser, Michael McKaughan, United States Coast Guard Academy, USA |
| 9:40  | Coffee Break                                                            |
| 10:00 | Modeling Multiple HF Antennas on the C-130/Hercules Aircraft - Part II   |
|       | Stanley J. Kubina, Christopher W. Trueman, David Gaudine, Anita Ka Ki Lau, Concordia University, Canada |
| 10:20 | Modeling Antennas on Automobiles in the VHF and UHF Frequency Bands, Comparisons of Predictions and |
|       | Nicholas DeMinco, Institute for Telecommunication Sciences, USA         |
| 10:40 | FDTD Analysis of a New Leaky Traveling Wave Antenna                      |
|       | G. M. Zelinski, M. L. Hastriter, M. J. Havrilla, J. S. Radcliffe,       |
|       | G. A. Thiele, Air Force Institute of Technology, USA                    |
| 11:00 | Optimization of Aperiodic Waveguide Mode Converters                     |
|       | G. J. Burke, D. A. White, C. A. Thompson, Lawrence Livermore National Laboratory, USA |
| 11:20 | Analysis, Design and Fabrication of Centimeter-Wave Dielectric Fresnel Zone Plate Lens and Reflecter |
|       | Ali Mahmoudi, University of Qom, Iran                                   |
| 11:40 | A Generalized MATLAB-based Distributed-computing Optimization Tool      |
|       | Keith A. Lysiak, Jason Polendo, Southwest Research Institute            |
1:20 Wideband Printed Lotus Antenna
Abdelnasser Edek, Atef Elsherbeni, Charles Smith, University of Mississippi, USA

1:40 Comparative Study of Wideband Properties of Planar Solid and Strip Fractal Bow-Tie Dipoles
Andrey S. Andrenko, Fujitsu Laboratories LTD, USA

2:00 Planar Elliptical Monopole Fed with CPW for UWB Applications
Kenneth C L Chan, Yi Huang, Xu Zhu, University of Liverpool, United Kingdom

2:20 Techniques to Improve Ultra Wide Band Performance of Planar Monopole Antenna
X. N. Qiu, H. M. Chiu, A. S. Mohan, University of Technology, Australia

2:40 Design and Fabrication of a Multi-purpose Planar Antenna
Seong-il Park, Hyeon-Jin Lee, Yeong-seog Lim, Chonnam National University, Korea

3:00 Coffee Break

3:20 A Frequency-Selectable Patch Antenna of Circular Polarization with Integrated MEMS Switches
Sunan Liu, Ming-Jer Lee, G.-P. Li, Mark Bachman, Franco De Flaviis, University of California, Irvine, USA

3:40 Short Electromagnetic Pulse Probe Fed by Tow-Coaxial Balun: Sensitivity and Bandwidth Examining
Esrafil Jedari, Mohammad Hakak, Majid Okhovvat, Alireza Foroozesh, Iran Telecommunication Research Center, Iran

4:00 A UWB Antenna with a Stop-band Notch in the 5-GHz WLAN band
Seong-Youp Suh, Alan E. Waltho, Kirk W. Skeba, Jeff L. Schiffer, Intel Corporation, USA, Warren L. Stutzman, William A. Davis, Virginia Polytechnic Institute and State University, USA

4:20 Broadband Microstrip-Fed Modified Quasi-Yagi Antenna
Shih-Yuan Chen, Powen Hsu, National Taiwan University, Taiwan

4:40 Slot Antenna for Ultra Wideband System
Kamya Yekeh Yazdandoost, Ryuji Kohno, National Institute of Information and Communications Technology, Japan

5:00 Meandered Planar Inverted-F Antenna for PCS Mobile Phone
Joo-Seong Jeon, Man-Hoe Heo, KTF R&D, Korea, Jae-Won Noh, Ace Tech. R&D, Korea
1:20  Enhanced MVDR Beamforming Implementation with Arbitrary Linear Arrays on DS/CDMA
KyungSeok Kim, Yong-Seok Choi, Chang-Joo Kim, Ik-Guen Choi, Chonbuk National University, Korea

1:40  A Broadband Dual Circularly Polarized High Gain Microstrip Array
Weiping Dou, Dan Degutis, Antenna Research Associates Inc.

2:00  Development of Wideband Random Phased Arrays Composed of Modified Canted Sector Antennas
J. T. Bernhard, G. Cung, K. C. Kerby, P. E. Mayes, University of Illinois at Urbana-Champaign, USA

2:20  Low-cost Nonplanar Microstrip-line Ferrite Phase Shifter Utilizing Circular Polarization
Magdy F. Iskander, Jodie M. Bell, William W.G. Hui, University of Hawaii, USA, Jar J. Lee, Raytheon, USA

2:40  Active Frequency Selective Surfaces for Antenna Applications Electronically to Control Phase Distribution and Reflective/Transmissive Amplification
Peter Edenhofer, University of Bochum, Germany, Abbas Alpaslan , Siemens AG, Germany

3:00  Coffee Break

3:20  Thinned Interleaved Linear Arrays
Randy Haupt, The Pennsylvania State University, USA

3:40  Lattice Spacing Effect on Scan Loss for Bat-Wing Phased Array Antennas
Thinh Q. Ho, Charles A. Hewett, Lilton N. Hunt, SSCSD 2825, USA

4:00  Phased Array for Limited Coverage
Howard Luh, Space Systems/Loral

4:20  Wireless Communication Applications of the Continuous Transverse Stub (CTS) Array at Microwave and Millimeter Wave Frequencies
William Henderson, William Milroy, Thinkom Solutions Inc., USA

4:40  Low Cost Compact Active Integrated Antenna with a Reactive Impedance Surface
Fabio Urbani, University of Texas at Brownsville, USA, Filiberto Bilotti, Andrea Ali, Lucio Vegni, University of ROMA TRE, Italy

5:00  CFDTD Solution For Large Waveguide Slot Arrays
T. Ho, C. Hewett, L. Hunt, SSCSD 2825, USA, T. Ready, NAVSEA PMS 500, USA, M. Baugher, K. Mikoletz, NSWCDD J50, USA
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<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>1:20</td>
<td>Numerical Dispersion of the 2-D ADI-FDTD Method</td>
<td>Qing-xin CHU, South China University of Technology, China, Lin-nian Wang, Zhi-hui Chen, Xidian University, China</td>
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<td>1:40</td>
<td>A Novel HE-Coupling for Explicit Multigrid-FDTD</td>
<td>Peter Chow, Fujitsu Laboratories of Europe, UK, Takashi Yamagajo, Tetsuya Kubota, Takefumi Namiki, Fujitsu Limited, Japan</td>
</tr>
<tr>
<td>2:00</td>
<td>New FDTD Model for Excitation of Microstrip Lines</td>
<td>Mikko Kärkkäinen, Constantin Simovski, Murat Ermuth, Sergi Tretyakov, Pekka Ikonen, Helsinki University of Technology, Finland</td>
</tr>
<tr>
<td>2:20</td>
<td>FVTD Simulations of Archimedean Spiral Antennas on Thin Substrates in Planar and Conformal Configurations</td>
<td>Christophe Fumeaux, Dirk Baumann, Rüdiger Vahldieck, Swiss Federal Institute of Technology, Switzerland</td>
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<tr>
<td>2:40</td>
<td>Practical Considerations in the MRTD Modeling of Microwave Structures</td>
<td>Nathan Bushyager, Manos Tentzeris, The Georgia Institute of Technology, USA</td>
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<td>3:00</td>
<td>Coffee Break</td>
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<tr>
<td>3:20</td>
<td>A Multiresolution Model of Transient Microwave Signals in Dispersive Chiral Media</td>
<td>I. Barba, A. Grande, A.C.L. Cabeceira, J. Represa, Universidad de Valladolid, Spain</td>
</tr>
<tr>
<td>3:40</td>
<td>Modeling of Ground-Penetrating Radar for Detecting Buried Objects in Dispersive Soils</td>
<td>Konstantinos P. Prokopidis, Theodoros D. Tsiboukis, Aristotle University of Thessaloniki, Greece</td>
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<tr>
<td>4:00</td>
<td>Advances in the Adjoint Variable Method for Time-Domain Transmission Line Modeling</td>
<td>Peter A. W. Basl, Mohamed H. Bakr, Natalia K. Nikolova, McMaster University, Canada</td>
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<tr>
<td>4:20</td>
<td>A Comparison of Marching-on-in-Time Method with Marching-on-in-Degree Method for the TD-EFIE Solver</td>
<td>Zhong Ji, Tapan K. Sarkar, Mengtao Yuan, Syracuse University, USA, Baek Ho Jung, Hoseo University, Korea, Magdalena Salazar-Palma, Universidad Politécnica de Madrid, Spain</td>
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<td>4:40</td>
<td>Lightning Electromagnetic Fields Computation using Time Domain Finite Element Method</td>
<td>Glássio Costa de Miranda, Evandro José Ribeiro, Universidade Federal de Minas Gerais, Brazil</td>
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<tr>
<td>1:20</td>
<td>An Integral Equation Method for the Scattering from Multiple Multilayered cylinders</td>
<td>Fad Seydou, University of Oulu, Finland</td>
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<td>1:40</td>
<td>A New Integral Equation for the Calculation of the Internal Impedance of a Conductor</td>
<td>Luc Knockaert, Ghent University, Belgium</td>
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<td>2:00</td>
<td>The Effect of Integration Accuracy on the MoM VIE Solution for Dielectric Resonators</td>
<td>Shashank Kulkarni, Sergey Makarov, Worcester Polytechnic Institute, USA</td>
</tr>
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<td>2:20</td>
<td>Bistatic Scattering from a PEMC (Perfect Electromagnetic Conducting) Sphere: Surface Integral Equation Approach</td>
<td>Ari Sihvola, Pasi Yla-Ojala, Ismo V. Lindell, Helsinki University of Technology, Finland</td>
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<td>2:40</td>
<td>2D MFIE Solution Improvement by Regularization</td>
<td>Clayton P. Davis, Karl F. Warnick, Brigham Young University, USA</td>
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<td>3:00</td>
<td><strong>Coffee Break</strong></td>
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<td>3:20</td>
<td>Combined-Field Solution of Composite Geometries Involving Open and Closed Conducting Surfaces</td>
<td>Ozgur Ergul, Levent Gurel, Bilkent University, Turkey</td>
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<td>3:40</td>
<td>Formulation of surface integral equations for metallic, dielectric and composite objects</td>
<td>Pasi Ylä-Ojala, Matti Taskinen, Helsinki University of Technology, Finland</td>
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<td>4:00</td>
<td>A Simple Extrapolation Method Based on Current for Rapid Frequency and Angle Sweep in Far-Field Calculation</td>
<td>Cai-Cheng Lu, University of Kentucky, USA</td>
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<td>4:20</td>
<td>Fast Construction of Wavelet-Based Moment Matrices in Solving Thin-Wire Electric Field Integral Equations</td>
<td>Mr. Amir Geranmayeh, Prof. Rouzbeh Moini, Prof. S. H. Hesam Sadeghi, Amirkabir University of Technology, Iran</td>
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<td>4:40</td>
<td>Eddy currents in a gradient coil, modeled by rings and patches</td>
<td>J.M.B. Kroot, S.J.L van Eijndhoven, A.A.F. van de Ven, Eindhoven University of Technology, Netherlands</td>
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</table>
8:00 Research and Educational Opportunities at the Electrical and Communications System Division
   *Usha Varshney, Acting ECS Division Director NSF, USA*

8:30 Electromagnetics for Wireless Communications
   *Donald C. Cox, Harald Trap Friis Professor Stanford University, USA*

9:00 Preparing the Wireless Workforce
   *Susan Sauer Sloan, Executive Director Global Wireless Education Consortium (GWEC), USA*

**April 5 10:20-12:00 AM South Pacific 1**

10:20 A Neural Blind Beamformer for Cyclostationary Signals
   *Li Hongsheng, He You, Yang Rijie, Naval Aeronautical Engineering Institute, China*

10:40 A Low Complexity Adaptive Algorithm for Tracking of Eigenspace-Based Two-Dimensional Directions of Arrival
   *Kuo-Hsiung Wu, De-Lin Institute of Technology, Taiwan, Wen-Hsien Fang, Hsin-Jung Chen, National Taiwan University of Science and Technology, Taiwan, Jianne-Tsair Chen, Inst. Of Communications Engineering National Tsing Hua University, Taiwan*

11:00 Direction of Arrival (DOA) Estimation Using a Transformation Matrix Through Singular Value
   *Seunghyeon Hwang, T. K. Sarkar, Syracuse University, USA*

11:20 Real Time Angle of Arrival Estimation for GSM Signals
   *Peter S. Wyckoff, John T. Keeler, The Aerospace Corporation, USA*

11:40 Mutual Impedance of Receiving Array and Calibration Matrix for High-resolution DOA Estimation
   *Hiroyoshi Yamada, Yoshio Yamaguchi, Niigata University, Japan, Yasutaka Ogawa, Hokkaido University, Japan*
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<tr>
<td>10:20</td>
<td>Dielectric Resonator Antennas</td>
<td>Broadband Dielectric Resonator Antennas Excited by L-shaped Probe</td>
<td>Ahmed A. Kishk, Ricky Chair, Kai-Fong Lee, University of Mississippi, USA</td>
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<td>10:40</td>
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<td>FDTD Analysis of a Probe-Fed Dielectric Resonator Antenna in Rectangular Waveguide</td>
<td>Yizhe Zhang, Ahmed A. Kishk, Alexander B. Yakovlev, Allen W. Glisson, The University of Mississippi, USA</td>
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<td>11:00</td>
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<td>Wideband Dielectric Resonator Antenna with Parasitic Strip</td>
<td>Tso-Wei Li, Jwo-Shiun Sun, National Taipei University of Technology, ROC, Taiwan</td>
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<td>11:20</td>
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<td>Slot Fed Broadband Dielectric Resonator Antenna</td>
<td>Tso-Wei Li, Jwo-Shiun Sun, National Taipei University of Technology, ROC, Taiwan</td>
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<td>11:40</td>
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<td>Dual-frequency Dielectric Resonator Antenna with Inverse T-shape Parasitic Strip</td>
<td>Tso-Wei Li, Jwo-Shiun Sun, National Taipei University of Technology, ROC, Taiwan</td>
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<td>10:20</td>
<td>Electromagnetic Imaging</td>
<td>Numerical Modeling Interaction of RF Field in MRI with a Pregnant Female Model</td>
<td>M.L. Strydom, University of British Columbia, Canada, K. Caputa, M.A. Stuchly, University of Vancouver, Canada, P. Gowland, University of Nottingham, UK</td>
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<td>10:40</td>
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<td>Microwave Imaging of Three-Dimensional Dielectric Objects Employing Evolution Strategies</td>
<td>Payam Rashidi, Magda El-Shenawee, University of Arkansas, USA, Demetrio Macias, Université de Technologie de Troyes, France, Eric Miller, NorthEastern University, USA</td>
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<td>11:00</td>
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<td>Identification of Particles in Complex Structures from Scattering Data</td>
<td>Fad Seydou, T. Seppanen, University of Oulu, Finland, Omar Ramahi, University of Maryland, USA</td>
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<td>11:20</td>
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<td>Eccentric Annular Slot Antenna for Breast Cancer Detection Based on the Finite-Difference-Time-Domain</td>
<td>Vigneshwar K. Raja, Magda El-Shenawee, University of Arkansas, USA</td>
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<td>10:20</td>
<td>Time Domain Models of Negative Refractive Index Metamaterials</td>
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<td>Wolfgang J. R. Hoefer, Poman P. M. So, University of Victoria, Canada</td>
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<td>10:40</td>
<td>Spectral Analysis of Negative Refractive Index Metamaterials Utilizing Signal Processing Techniques and Time-Domain Simulations</td>
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<td>Titos Kokkinos, Raviraj S. Adve, Costas D. Sarris, University of Toronto, Canada</td>
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<td>11:00</td>
<td>Modeling of Metamaterial Structures Using an Extended FDTD Approach</td>
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<td>Suzanne Erickson, Joshua Wong, Titos Kokkinos, Costas D. Sarris, University of Toronto, Canada</td>
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<td>11:20</td>
<td>Microwave/Millimeter Wave Metamaterial Development Using the Design of Experiments Technique</td>
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<td>Daniela Staiculescu, Nathan Bushyager, Manos Tentzeris, Georgia Institute of Technology, USA</td>
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<td>11:40</td>
<td>Characterization of Meta-Material Using Computational Electromagnetic Methods</td>
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<td>Manohar D. Deshpande, Joon Shin, NASA Langley Research Center, USA</td>
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1:20  Technology for Emerging Commercial Applications at Millimeter-Wave Frequencies  
   Rudy Emrick, Steve Franson, Bruce Bosco, John Holmes, 
   Steve Rockwell, Motorola Inc., USA

1:40  High Performance SiGe BiCMOS Technology  
   Marco Racanelli, Sorin Voinegescu, Paul Kempf, University of Toronto, Canada

2:00  Multi-Gigabit Wireless Test Bed at Millimetre Waves  
   Oya Sevimli, Val Dyadyuk, David Abbott, Leigh Stokes,  
   Stephanie Smith, John Arch, Mei Shen, Rod Kendall, Juan Tello, CSIRO, ICT Centre, Australia

2:20  High Speed Data Communications based on W-band Automotive Radar MMIC  
   Carsten Metz, Bell Laboratories-Lucent Technologies, USA,  
   Torben Baras, Arbeitsbereich Hochfrequenztechnik – Tech. Univ. Hamburg-Harburg, Germany

2:40  Complementary Market Opportunities for Commercial & Military mm-Wave MMIC Devices  
   Roberto W. Alm, Raytheon RF Components, USA

3:00  Coffee Break

3:20  Circuit and Module Challenges for 60 GHz Gb/s Radio  
   Joy Laskar, Georgia Institute of Technology, USA

3:40  A Millimeter-Wave Multifunction Sensor for Wireless Monitoring of Displacement and Velocity  
   Seoktae Kim, Cun Nguyen, Texas A&M University, USA
April 5 1:20-5:00 PM  South Pacific 2

15  MIMO and Diversity System Characterization

1:20  Simulations of Diversity Gains of Multiple Omni and Directive Antennas in Rician Channel with varying K-
      Marin S. Stoytchev, David C. Wittwer, Antenna & Propagation Laboratory, USA

1:40  Deterministic Channel Modeling and Performance of Monopolarized and Multipolarized MIMO Wireless Channels
      Nuttapol Prayongpun, Kosai Raoof

2:00  Evaluation of Propagation Characteristics in Indoor Environment for MIMO System
      Hidetoshi Chiba, Yoshio Inasawa, Yoshitaka Hara, Yoshihiko Konishi, Shigeru Makino, Mitsubishi Electric Corporation, Japan

2:20  On the Channel Capacity in MIMO Systems for Aeronautical Channels
      Farid Ghanem, Tayeb Denidni, Gilles Delisle, Khalida Ghanem, University of Quebec, Canada

3:00  Coffee Break

3:20  Statistical Modeling of Site-specific Indoor Channels in Wireless Communications
      Chan-Ping Lim, John L. Volakis, Kabilay Sertel, Rickie W. Kindt, ElectroScience Lab, USA, Achilleas Anastasopoulos, The University of Michigan, USA

3:40  On the Diversity Gain Using a Butler Matrix in Fading MIMO Environments
      Alfred Grau, Franco De Flaviis, University of California at Irvine, USA, Jordi Romeu, Technical University of Catalonia, Spain

4:00  Space-Polarization Diversity for a 2x2 MIMO using Space Time Block Codes
      Nour Mohammad MURAD, David CARSENAT, Institut d’Ingenierie en Informatique de Limoges, France, Bernard JECKO, IRCOM(CREAP), IRCOM(CREAP)-CNRS UMR 6615, France

4:20  Performance of 2x2 MIMO Spatial Multiplexing in Indoor Environments
      Yasutaka Ogawa, Hiroshi Nishimoto, Toshikiko Nishimura, Takeo Ohgane, Hokkaido University, Japan

4:40  A Transmit Antenna Selection Diversity Scheme for Wireless Communications
      Jiaen Li, Myoung Seob Lim, Chonbuk National University, Korea
1:20  A Computer Simulation of 400 MHz and 1000 MHz Antennas Located on a High Mobility Multi-Wheeled
Keith Anthony Snyder, Northrop Grumman Mission Systems

1:40  Design and Analysis of a Pattern Selectable Airborne HF Antenna
Nathan P. Cummings, ARINC, USA

2:00  Hybrid Simulation of Electrically Large Millimeter-Wave Antennas
Steven J. Franson, Motorola Labs, USA

2:20  Loop-Dipole Antenna Modeling using the FEKO Code
Wendy Lippincott, Tom Pickard, Randy Nichols, Naval Research Lab, USA

2:40  Fast Multipole Solution of Metallic and Dielectric Scattering Problems in FEKO
Johannes J van Tonder, Ulrich Jakobus, EM Software and Systems-S. A (Pty) Ltd, South Africa

3:00  Coffee Break

3:20  A Horn-Fed Reflector Optimized with a Genetic Algorithm
Randy Haupt, The Pennsylvania State University, USA

3:40  Prediction of VHF Radiation Patterns on Gulfstream Aircraft
Christopher Penwell, Gulfstream Aerospace

4:00  Database Generation of Bistatic Ground Target Signatures
Amit Kumar Mishra, Bernard Mulgrew, University of Edinburgh, UK

4:20  Analysis of a Narrow Slot backed by a Rectangular Cavity using FEKO
Vivek Ramani, C. J. Reddy, EM Software and Systems, USA, Anthony Q. Martin, Clemson University, USA
1:20  Motional Eddy Currents Analysis in moving solid iron using magnetic equivalent circuits method
Hooshang Gholizad, Mojtaba Mirsalim, Mehran Mirzayee, Amirkabir University of Technology, Iran

1:40  Analysis of a High-Speed Solid Rotor Induction Motor Using Coupled Analytical method and Reluctance Networks Mehran Mirzayee, Hasan Mehrjerdi, Amirkabir University of Technology, Iran

2:00  Electrostatic and Magnetostatic Finite-Difference Analysis without the ‘Staircase’ Effect Igor Tsukerman, University of Akron, USA

2:20  The Analysis of the Additional Substance Influence on the Grounding Grid Parameters by FEM Anton Habjanic, Mladen Trlep, University of Maribor, Slovenia

2:40  Low-Frequency EM Field Penetration Through Magnetic and Conducting Cylindrical Shields Michael A. Morgan, Naval Postgraduate School, USA

3:00  Electrodyamics of Dipolar Beads in an Electrophoretic Spherical Cavity Meng H. Lean, Armin R. Volkel, Palo Alto Research Center, USA

3:40  Multiscale Analysis of Panel Gaps in the Haystack Parabolic Reflector Nader Farahat, Polytechnic University of Puerto Rico, PR, Raj Mittra, The Pennsylvania State University, USA

4:00  Vectorial GO and Diffraction Decomposition of Physical Optics Scattering of Dipole Wave from Planar Surfaces in Terms of Modified Edge Representation Line Integrals Luis Rodriguez, Tokyo Institute of Technology, Japan, Ken-ichi Sakina, Hakodate National College of Technology, Japan, Makoto Ando, Tokyo Institute of Technology, Japan

4:20  Efficient Macromodeling for Systems Characterized by Sampled Data Rong Gao, Yidnekachew S. Mekonnen, José Schutt-Ainé, University of Illinois at Urbana-Champaign, USA, Wendemagegnehu T. Beyene, Rambus Inc, USA

4:40  A High-Frequency Asymptic Formulation for Temporal Characterization of Reflector Antennas Cassio Goncalves do Rego, Universidade Federal de Minas Gerais, Brazil, Flavio Jose Vieira Hasselmann, 2Pontifícia Universidade Católica, Brazil, Sandro Trindade Mordente Goncalves, Elias Lawrence Marques, Universidade Federal de Minas Gerais, Brazil
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<tr>
<th>Time</th>
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<th>Speaker(s)</th>
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<tr>
<td>8:00</td>
<td>Frequency Reconfigurable CPW-Fed Hybrid Folded Slot/Slot Dipole Antenna</td>
<td>G. H. Huff, J. T. Bernhard, University of Illinois as Urbana-Champaign, USA</td>
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<td>8:20</td>
<td>Modified Sierpinski Fractal Antenna</td>
<td>Tripti Luintel, Parveen Wahid, University of Central Florida, USA</td>
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<td>8:40</td>
<td>Parallel PSO/FDTD Algorithm for the Optimization of Patch Antennas and EBG Structures</td>
<td>Nanbo Jin, Yahya Rahmat-Samii, University of California Los Angeles, USA</td>
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<td>9:00</td>
<td>Antennas and Propagation for Body Centric Wireless Communications</td>
<td>A. Alomainy, C. G. Parini, University of London, UK, P. S. Hall, Y. I. Nechayev, C. C. Constantinou, University of Birmingham Edgbaston, UK</td>
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<td>9:20</td>
<td>Calculation of SAR using FDTD sub-domain approach</td>
<td>Tao Su, Raj Mittra, Wenhua Yu, Pennsylvania State University, USA, Joe Wiart, France Telecom, France</td>
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<tr>
<td>9:40</td>
<td>Coffee Break</td>
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<tr>
<td>10:00</td>
<td>Narrow Beam Adaptive Array for Advanced Wireless Applications</td>
<td>Meriam Rezk, Wayne Kim, Zhengqing Yun, Magdy Iskander, University of Hawaii at Manoa, USA</td>
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<tr>
<td>10:20</td>
<td>Neural Networks in Antenna Engineering - Beyond Black-Box Modeling</td>
<td>Amalendu Patnaik, National Institute of Science &amp; Technology, India, Dimitrios Anagnostou, Christos Christodoulou, University of New Mexico, USA</td>
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<tr>
<td>10:40</td>
<td>Analysis of a Linear Slot Array Comprised of Tilted Edge Slots Cut in the Narrow Wall of a Rectangular Waveguide</td>
<td>John C. Young, Jiro Hirokawa, Makoto Ando, Tokyo Institute of Technology, Japan</td>
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<tr>
<td>11:00</td>
<td>Antennas for Distributed Nanosatellite Networks</td>
<td>Thomas J. Mizuno, Justin D. Roque, Blaine T. Murakami, Lance K. Yoneshige, Grant S. Shiroma, Ryan Y. Miyamoto, Wayne A. Shiroma, University of Hawaii, USA</td>
</tr>
<tr>
<td>11:20</td>
<td>A Coupled-Antenna Interrogator/Receiver for Retrodirective Crosslinks in a Distributed Nanosatellite</td>
<td>Justin D. Roque, Stephen S. Sung, Blaine T. Murakami, Grant S. Shiroma, Ryan Y. Miyamoto, Wayne A. Shiroma, University of Hawaii</td>
</tr>
</tbody>
</table>

April 6 8:00-11:40 AM  South Pacific 1

Special Session: Communication Antenna Analysis and Design
8:00  Development of RF Subsystems for MIMO and Beyond 3G Systems  
Jianhong Chen, Wei Hong, Jianyi Zhou, Jianing Zhao, Jianjun Wang, Southeast University, China

8:20  Applications of MIMO Techniques to Sensing of Cardiopulmonary Activity  
Dragan Samardzija, Bell Laboratories, Lucent Technologies, USA, Olga Boric-Lubecke, Anders Host-Madsen, Victor M. Lubecke, University of Hawaii, USA, Amy D. Droitcour, Stanford University, USA

8:40  Modeling Front-End Signal Coupling in MIMO Systems  
Matthew L. Morris, Michael A. Jensen, Brigham Young University, USA

9:00  Signal Enhancement in a Near-Field MIMO Environment Through Adaptivity on Transmit  
Seunghyeon Hwang, T. K. Sarkar, Syracuse University, USA

9:20  HSDPA Capacity Enhancement using MIMO in a Pico-cell Environment  
Pedro Vieira, DEETC/Instituto Superior de Engenharia de Lisboa, Portugal, Maria Paula Queluz, António Rodrigues, IT/Instituto Superior Tecnico, Portugal

9:40  Coffee Break

10:00  Development of The MIMO System for Future Mobile Communications  
Wei Hong, Haiming Wang, Guangqi Yang, Nanzu Zhang, Jianyi Zhou, Southeast University, China

10:20  A Look at some of the Principles of Mobile Communication from a Maxwellian Viewpoint  
Tapan K. Sarkar, Syracuse University, USA

10:40  Performance of Space-Time Trellis Codes over Nakagami Fading Channels  
Mohammad O. Farooq, Wei Li, T. Aaron Gulliver, University of Victoria, Canada

11:00  A New CDMA/SDMA Architecture with Transmit Diversity  
Wei Li, T. Aaron Gulliver, University of Victoria, Canada

11:20  Feedback Equalization for MIMO systems  
Khalida Ghanem, Tayeb Denidni, University of Quebec, Canada
8:00  Parallel ICCG Solvers for a Finite-Element Eddy-Current Analysis on Heterogeneous Parallel Computation  
Takeshi Iwashita, Masaaki Shimasaki, Junwei Lu, Kyoto University, Japan

8:20  Full Wave Analysis of RF Signal Attenuation in a Lossy Cave using a High Order Time Domain Vector Finite  
James Pingenot, Robert Rieben, Daniel White, Lawrence Livermore National Laboratory, USA

8:40  Calculation of Polyphase Induction Motor Parameters Using Finite Element Method  
Reinaldo Shindo, Centro de Pesquisas de Energia Elétrica, Brazil,  
Antônio Carlos Ferreira, Universidade Federal do Rio de Janeiro, Brazil,  
George Alves Soares, – Programa Nacional de Conservação de Energia Elétrica/Centrais Elétricas Brasileiras, Brazil

9:00  A Highly Robust and Versatile Finite Element-Boundary Integral Hybrid Code for Scattering by BOR Objects  
Jian-Ming Jin, University of Illinois at Urbana-Champaign, USA

9:20  FE-BI Analysis of a Leaky-Wave Antenna with  
Leo Kempel, Stephen Schneider, Joshua Radcliffe, Dan Janning, Gary Thiele, AirForce Research Laboratory, USA

9:40  Coffee Break

10:00  Nested Multigrid Finite Element Analyses of Eddy Current Losses in Power Transformers  
Erich Schmidt, Vienna University of Technology, Austria,  
Joachim Schoeberl, Johannes Kepler University Linz, Austria,  
Peter Hamberger VA TECH EBG Transformatoren GmbH & Co, Austria

10:20  Virtual Design of Insulation Elements Based on FEM and Automated Optimization Process  
Peter Kitak, Joze Pihler, Igor Ticar, University of Maribor, Slovenia,  
Oszkár Bíró, Kurt Preis, Graz University of Technology, Austria

10:40  Application of an hp-adaptive FE method for computing electromagnetic scattering in the frequency domain  
Niklas Sehlstedt, Adam Zdunek, Swedish Defence Research Agency, Sweden,  
Waldemar Rachowicz, Cracow University of Technology, Poland

11:00  Study of Electromagnetic Scattering form Material Object Doped Randomly With Thin Metallic Wires Using Finite Element Method  
Manohar D. Deshpande, NASA Langley Research Center, USA

11:20  Acoustic Noise Signal Evaluation due to Magnetostrictive Effects in Electrical Equipment  
Osama A. Mohammed, Nagy Y. Abed, Shreerang Ganu, Shuo Liu, Florida International University, USA

11:40  Surface Based Differential Forms  
James Pingenot, Chaunyi Yang, Vikram Jandhyala, University of Washington, USA,  
Nathan Champagne, Louisiana Tech University, USA,  
Benjamin J. Fasenfest, Lawrence Livermore National Laboratory, USA
8:00  Two-Step Reduction Approach based on the Scattering-Symmetric Lanczos Algorithm for TLM-ROM  
Dzianis Lukashevich, Technische Universität München, Germany, Andreas Cangellaris, University of Illinois, Urbana-Champaign, USA, Peter Russer, Technische Universität München, Germany

8:20  High-Throughput Transmission Line Matrix (HT-TLM) System in Grid Environment for the Analysis of Complex Electromagnetic Structures  
Petr Lorenz, José Vagner Vital, Bruno Biscontini, Peter Russer, Technische Universität München, Germany

8:40  Fast Time Domain Integral Equation Solver for Dispersive Media with Auxiliary Green Functions  
E. Bleszynski, Monopole Research, USA

9:00  Discontinuous Galerkin Time--domain Simulations for Electromagnetic Wave Propagation in Photonic Crystals  
Misun Min, Argonne National Laboratory, USA

9:20  Fast Adaptive Mode Reduction Scheme for Efficient Computation of Cascaded Filters by the MoL  
Larissa Vietzorreck, Technische Universität München, Germany, Wilfrid Pascher, University of Hagen, Germany

9:40  Coffee Break

10:00  FDTD Calculations using Graphical Processing Units  
Matthew J. Inman, Atef Elsherbeni, Charles Smith, University of Mississippi, USA

10:20  The FDFD with the Iterative Multi-Region Technique for the Scattering from Multiple Three Dimensional Objects  
Mohamed Al Sharkawy, Veysel Demir, Atef Elsherbeni, University of Mississippi, USA

10:40  Efficient Calculation of Field Distribution with High-Resolution Using Ray-Tracing Method  
Zhengqing Yun, Magdy F. Iskander, University of Hawaii, USA

11:00  Two-Level Preconditioning Techniques for Electromagnetic Wave Scattering Problems  
Jeonghwa Lee, RAPT Industries, USA, Jun Zhang, Cai-Cheng Lu, University of Kentucky, USA

11:20  TM scattering from finite rectangular grooves in a conducting plane using overlapping T-block analysis  
Yong Heui Cho, Mokwon University, Republic of Korea

11:40  Adaptive Cross Approximation for MOM Matrix Fill for PC Problem Sizes to 157000 Unknowns  
John Shaeffler, Francis Canning, Simply Sparse Technologies, USA
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<tbody>
<tr>
<td>1:20</td>
<td>2D Coupled Electrostatic-Mechanical Model for Shunt-Capacitive MEMS Switch Based on Matlab Program</td>
<td>Elham K. I. Hamad, Abbas S. Omar, Otto-von-Guericke-University, Germany, Amr M. E. Safwat, Ain Shams University, Egypt</td>
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<tr>
<td>1:40</td>
<td>Dynamic and Electrical Analysis of MEMS Capacitor with Accelerated Motion Effects</td>
<td>Kohei Kawano, Shafrida Shahrani, Takashi Mori, Michiko Kuroda, Tokyo Institute of Technology, Japan, Manos M. Tentzeris, Georgia Institute of Technology, USA</td>
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<td>2:00</td>
<td>Fast Full-Wave Analysis of Distributed MEMS Transmission Lines by the MoL</td>
<td>Wilfrid Pascher, Reinhold Pregla, University of Hagen, Germany, Larissa Vietzorreck, Technische Universitat Munchen, Germany</td>
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<td>2:20</td>
<td>Chip-Package Codesign of Receiver Front End Modules for RF/Wireless Applications</td>
<td>Yasar Amin, Prof. Hannu Tenhunen, Prof. Dr. Habibullah Jamal, Dr. Li-Rong Zhong, Xuezhang Duo, Royal Institute of Technology, Sweden</td>
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<tr>
<td>2:40</td>
<td>A Wide-band 0.5 um CMOS Low-Noise Amplifier</td>
<td>Ivy Lo, Victor M. Lubecke, Olga Boric-Lubecke, University of Hawaii, USA, Derek Ah Yo, Ken Cheung, Oceanit Laboratories, USA</td>
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<td>3:00</td>
<td>Coffee Break</td>
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<td>3:20</td>
<td>Amplifier-Based Active Antenna Oscillator Design at 0.9-1.8 GHz</td>
<td>Isaac Waldron, Ayoob Ahmed, Sergey Makarov, Worcester Polytechnic Institute, USA</td>
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<td>3:40</td>
<td>Realization of a Sub-harmonic Mixer with a Substrate Integrated Waveguide Filter</td>
<td>Hongjian Tang, Yulin Zhang, Wei Hong, Southeast University, China</td>
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<td>4:00</td>
<td>Synthesis of a dual-passband elliptic filter with equalized group delay</td>
<td>Juseop Lee, Man Seok Uhm, Jong Heung Park, Electronics and Telecommunications Research Institute, USA</td>
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<tr>
<td>4:20</td>
<td>Unilateral Amplifier S-Parameter Extraction Technique</td>
<td>Kendall S. Ching, Ryan Y. Miyamoto, Wayne A. Shiroma, University of Hawaii, USA</td>
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<tr>
<td>4:40</td>
<td>Ultra-wideband Miniaturized Electromagnetic Bandgap Structures Embedded in Printed Circuit Boards: Theory, Modeling and Experimental Validation</td>
<td>Shahrooz Shahparnia, Omar M. Ramahi, University of Maryland, USA</td>
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<tr>
<td>5:00</td>
<td>Hybrid FDTD Analysis for Periodic On-Chip Terahertz (THz) Structures</td>
<td>Yasser A. Hussein, James E. Spencer, Stanford University, USA</td>
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</table>
1:20  A Vectorial Analysis of UHF Propagation in a Three-dimensional Multislit Street Waveguide
Edgar Silva Junior, Gilberto Arantes Carrijo, Federal University of Uberlandia, Brazil

1:40  An Efficient Wave Propagation Model for Simulation and Analysis of Multipath Effects of Mobile Users in Indoor and Urban Environment
Steve Hall, Jie S. Chen, Shankar Venkatesan, Lockheed Martin Space Systems, USA

2:00  A SBR Algorithm for Simple Indoor Propagation Estimation
Ryoichi Sato, Hiroshi Sato, Niigata University, Japan, Hiroshi Shirai, Chuo University, Japan

2:20  Propagation Prediction Software for Wireless Communication System Optimization
Chad Takahashi, Zhengqing Yan, Magdy F. Iskander, University of Hawaii, USA

2:40  Characterizing Dispersion in the Enclosed-Space Radio Channel using a Composite Mode Model
J.P. Vant Hof, D.D. Stancil, Carnegie Mellon University, USA

3:00  Coffee Break

3:20  Measurements of a CW signal in Brazil and Comparison with Prediction using ITU-R P.1546-1
A. J. Martins Soares, P. Carvalho, Universidade de Brasilia, Brasil

3:40  The Channel Characterization and Performance Evaluation of Mobile Communication Employing Stratospheric Platform
Iskandar, Wasedu University, Japan

4:00  Electromagnetic Propagation of Wireless Networks in Aircraft Cabins
Mennatoallah Youssef, Linda Vahala, Old Dominion University, USA, John Beggs, NASA Langley Research Center, USA

4:20  802.11ab Propagation Prediction Inside a B777
Genevieve Hankins, Linda Vahala, Old Dominion University, USA, John Beggs, NASA Langley Research Center, USA

4:40  Effect of Road Undulation on the Propagation Characteristics of Inter-Vehicle Communications in the
Atsushi Yamamoto, Koichi Ogawa, Matsushita Electric Industrial Co., Japan, Tetsuo Horinatsu, Fujitsu Ltd., Japan,
Katsuyoshi Sato, Masaaki Fujise, National Institute of Information and Communications Technology, Japan
1:20  European Effort Towards a Unified Framework for the Analysis of Antenna Structures  
   G. A. E. Vandenbosch, K.U. Leuven, Netherlands

1:40  Three Different Ways to Decorrelate Two Closely Spaced Monopoles for MIMO  
   S. Dossche, S. Blanch, J. Romeu, Universitat Politècnica de Catalunya, Spain

2:00  FDTD Analysis of Reflectarray Radiating Cells  
   Cadoret David, Laisné Alexandre, Marie-anne Milon, Gillard Raphaël, Institut d’Électricité et de Télécommunication de Rennes, France, Legay Hervé, Alcatel Space Toulouse, France

2:20  Built-in Multiband Antennas for Mobile Phone and WLAN Standards  
   Cyril Luxey, Pascal Ciais, Georges Kossiavas, Robert Staraj, Université de Nice-Sophia Antipolis, France

2:40  Multiscale Analysis of Array and Antenna Farm Problems  
   L. Matekovits, A. Laza, F. Vipiana, P. Pirinoli, G. Vecchi, Dept. of Electronics, Italy

3:00  Coffee Break

3:20  Integral Equation Formulation for the Impedance Representation of Aperture-Coupled Devices with Finite  
   Michael Mattes, Juan R. Mosig, Ecole Polytechnique Fédérale de Lausanne, Switzerland

3:40  A General Procedure to set up the Dyadic Green’s Function of Multilayer Conformal Structures and its Application to Microstrip Antennas  
   Michael Thiel, Truong Vu Bang Giang, Achim Dreher, German Aerospace Center, Germany

4:00  Binary Optical Mixing for Broadband THz Communication  
   C. Sydlo, Institut fur Hochfrequenztechnik Technische Universität Darmstadt, Germany, R. Mendis, University of Wollongong, Australia, J. Sigmund, M. Feiginov, H. L. Hartnagel and P. Meissner, Institut fur Hochfrequenztechnik Technische Universität Darmstadt, Germany

4:20  Planar Terahertz Antenna Optimisation  
   C. Sydlo, J. Sigmund, H.L. Hartnagel, Institut fur Hochfrequenztechnik Technische Universität Darmstadt, Germany, R. Mendis, University of Wollongong, Australia, M. Feiginov and P. Meissner, Institut fur Hochfrequenztechnik Technische Universität Darmstadt, Germany

4:40  EMANT: Integration of GiD and Kratos, Open and Flexible Computational Tools.  
   Ruben Otin, Javier Mora, Eugenio Oñate, International Center For Numerical Methods in Engineering, Spain
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<tr>
<td>1:20</td>
<td>Time and Frequency Evolution of Precursor Fields in Dispersive Media using FDTD and Joint Time-Frequency</td>
<td>Reza Safian, Costas Sarris, Mohammad Mojahedi, University of Toronto, Canada</td>
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<td>1:40</td>
<td>Multiple Scattering of Plane Electromagnetic Waves by two Dielectric Coated Conducting Strips</td>
<td>Hassan A. Ragheb, Essam Hassan, King Fahd University of Petroleum and Minerals, Saudi Arabia</td>
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<td>2:00</td>
<td>Dipole Radiation in the Presence of a Planar Unidirectionally Conducting Screen</td>
<td>Binhao Jiang, Harbin University of Technology, China</td>
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<td>2:20</td>
<td>A New Method for Evaluation of Electromagnetic Field of Vertical Electric Dipole over Constant-Impedance Plane</td>
<td>Jiang Binhao, Liu Yongtan, Harbin University of Technology, China</td>
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<td>2:40</td>
<td>Hard and Soft Surfaces Realized by Frequency Selective Surfaces on a Grounded Dielectric Slab</td>
<td>Manish Hiranandani, Alexander B. Yakovlev, Ahmed A. Kishk, University of Mississippi, USA</td>
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<td>3:00</td>
<td>Coffee Break</td>
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<tr>
<td>3:20</td>
<td>A New Computational Method for Plasmon Resonances of Nanoparticles and for Wave Propagation</td>
<td>Igor Tsukerman, University of Akron, USA</td>
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<td>3:40</td>
<td>Far-Field RCS Prediction From Measured Near-Field Data Including Metal Ground Bounce</td>
<td>Yoshio Inasawa, Shinji Kuroda, Shinichi Morita, Hitoshi Nishikawa, Yoshihiko Konishi, Mitsubishi Electric Corporation, Japan</td>
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<td>4:00</td>
<td>Analysis of Electromagnetic Field in Inhomogeneous Medium by Fourier Series Expansion Methods</td>
<td>Tsuneki Yamasaki, Kastuji Isono, Takashi Hinata, Nihon University, Japan</td>
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<td>4:20</td>
<td>Educational Software Package for Electromagnetic Scattering from Simple Two and Three Dimensional Canonical and Non-Canonical Objects</td>
<td>Mohamed Al Sharkawy, Veyssel Demir, Atef Elsherbeni, University of Mississippi, USA</td>
</tr>
<tr>
<td>4:40</td>
<td>A New Approach to Electromagnetic Wave Diffraction by Plane with an Impedance Discontinuity</td>
<td>Binhao Jiang, Harbin University of Technology, China</td>
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</table>
8:00  Dual-band Circularly Polarized Microstrip Antenna  
*Tso-Wei Li, National Taipei University of Technology, Taiwan*

8:20  Multi-band Loop Antenna Integrated with a Telephone Handset  
*Muhammed Z Alam, Maria A. Stuchly, University of Victoria, Canada*

8:40  A Card-Type Inverted LFL Antenna for Dual-Frequency Operation  
*H. Nakano, K. Morishita, Y. Sato, H. Mimaki, J. Yamauchi, Hosei University, Japan*

9:00  A Circularly Polarized Dual-Band Microstrip Antenna  
*Cyril Luxey, Fabien Ferrero, Gilles Jacquemod, Robert Staraj, Universite de Nice-Sophia Antipolis, France*

9:20  Miniaturized, Wideband Fractal Patch Antenna  
*M.Jamshidifar, Javad .Nourinia, University of Urmia, Iran, F.Arazm, Ch.Ghobadi, Tehran University, Iran*

9:40  **Coffee Break**

10:00  Coupled Retractable Whip/Stub Antennas for Mobile Phones  
*Faton Tefiku, Kevin Li, Nokia Inc., USA*

10:20  Development of Mobile Phone Using Dual-interface SIM and Fingerprint Recognition  
*Meihong Li, Beihang University, China*

10:40  Analytical Calculation of Input Impedance of Rectangular Microstrip Patch Antennas on Finite Ground Planes  
*D. Chatterjee, E. Chettiar, University of Missouri Kansas City, USA*

11:00  A Study of Non-uniform Meandered and Fork-Type Grounded Antenna using iterative method.  
*Gharsallah Ali, Zairi hsan, Glaoui Mohamed, faculte des sciences de Tunis*

11:20  A Dual-Band Monopole Antenna for Mobile Communications  
*Yuehe Ge, Karu P. Esselle, Macquarie University, Trevor S. Bird, CSIRO ICT Centre, Australia*
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| 8:00  | New Constraints for Broadband Beamformers without Steering Delays  
Lal C. Godara, M. R. Sayyah Jahromi, The University of New South Wales, Australia |
| 8:20  | A New Implementation Approach for Cyclostationary Signal-Based Adaptive Arrays  
Fang-Biau Ueng, National Chung-Hsing University, Taiwan |
| 8:40  | Block Adaptive Beamforming via Parallel Projection Method  
Wen-Hsien Fang, National Taiwan University of Science and Technology, Taiwan, Sen-Hsien Hung, National Ocean University, Taiwan, Kuo-Hsiung Wu, De-Lin Institute of Technology, Taiwan |
| 9:00  | Steering Broadband Beamforming without Pre-steering  
M. R. Sayyah Jahromi, Lal C. Godara, The University of New South Wales, Australia |
| 9:20  | Phase-only Adaptive Processing based on the Direct Data Domain Least Squares Approach  
Wonsuk Choi, Tapan K. Sarkar, Syracuse University, USA |
| 9:40  | Coffee Break |
| 10:00 | A New GSC-Based Adaptive Array  
Fang-Biau Ueng, National Chung-Hsing University, Taiwan |
| 10:20 | Performance Enhancement by Using Switch-Beam Smart Antenna in 802.11a WLAN System  
Shao - Hua Chu, Hsin - Piao Lin, Ding - Bing Lin, National Taipei University of Technology, Taiwan |
| 10:40 | Design and Optimization of an Antenna Array for WIMAX Base Stations  
W. Mahler, F.M. Landstorfer, University of Stuttgart, Germany |
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<tr>
<td>8:00</td>
<td>The Next Generation Air to Ground Communication System Using for Air Traffic Control</td>
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<td>HO DAC TU, Waseda University, Japan</td>
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<td>8:20</td>
<td>Novel Interpolator Structure for Digital Symbol Synchronisation</td>
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<td>Markku Kiviranta, VTT Electronics, Finland</td>
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<td>8:40</td>
<td>An Efficient Timing Synchronization Method for OFDMA System</td>
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<td>JungJu Kim, Jungho Noh, KyungHi Chang, Inha University, Korea</td>
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<td>9:00</td>
<td>Improvement of Voice Activity Detection Algorithm Based on 3G Partnership Project</td>
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<td>Zhang Liang, Bian zhengzhong, Xi’an Jiatong University, China, GAO yingchun, Fourth Military Medical University, China</td>
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<td>Pham Bao Thi Ngoc, Takaaki Zakoji, Hidekazu Morata, Kiyomichi Araki, Tokyo Institute of Technology, Japan</td>
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<tr>
<td>9:40</td>
<td>Coffee Break</td>
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<tr>
<td>10:00</td>
<td>A Study of Multi-hop Mobile Communication Access Models Considering Elapsed Time from Coverage Area</td>
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<td>Yukiko Nasu, Shigeru Shimamoto, Waseda University, Japan</td>
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<tr>
<td>10:20</td>
<td>Digital joint phase and sampling instant synchronisation for UMTS standard</td>
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<td>Youssef Serrestou, Kosai RAOOF, Joel LIENARD, Laboratoire des Images et des Signaux(LIS), France</td>
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<td>10:40</td>
<td>Characterization of a Low Power, Short Range Wireless Transceiver</td>
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<td>Usha Neupane, Samuel M. Richie, Arthur Weeks, University of Central Florida, USA</td>
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<tr>
<td>11:00</td>
<td>Complex Spatial/Temporal CFAR</td>
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<td>Ziba Ebrahimian, University of Southern California, USA</td>
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<tr>
<td>11:20</td>
<td>The New Scheme for Data Rate Improvement in HF Communication without using Equalizer</td>
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<td>Vahid Heidari, Mohammad H. Alavi, Sharif University of Technology Tehran-Iran</td>
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<td>11:40</td>
<td>Fast Arithmetic of Elliptic Curve Cryptosystem in Mobile Communication</td>
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<td>Miao Ya-Lin, Zhang Liang, Bian Zheng-Zhong, Xi’an Jiatong University, China, Gao Ying-Chun, Fourth Military Medical University, China</td>
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### Electromagnetic Compatibility and Interference

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<tr>
<th>Time</th>
<th>Session</th>
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<tr>
<td>8:00</td>
<td>The Isolation Island and the Displacement of Decoupling Capacitors for Power Integrity Issues</td>
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<td>Ding-Bing Lin, Taipei university of Technology, Taiwan, Chun-Te Wu, Da-Yeh University, Taiwan, Guo-Chiang Hung, Taipei University of Technology, Taiwan</td>
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<td>8:20</td>
<td>Shield Design about Circumference of Choke Structure Used for Microwave Oven by Parallel FDTD</td>
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<td>Kouta Matsumoto, Osamu Hashimoto, Aoyama Gakuin University, Japan</td>
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<td>8:40</td>
<td>Graphical Analysis of Electromagnetic Coupling on B-737 and B-757 Aircraft for VOR and LOC IPL Data</td>
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<td>Madiha Jafri, Old Dominion University, USA, Linda Vahala, NASA Langley Resarch Center, USA, Jay Ely, Old Dominion University, USA</td>
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<td>9:00</td>
<td>Response Bounds Analysis for Transmission Lines Characterized by Uncertain Parameters</td>
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<td>Sami Barmada, Antonino Musolino, Marco Raugi, Universita di Pisa, Italy</td>
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<td>9:20</td>
<td>Computational Electromagnetics Applied to Analyzing the Efficient Utilization of the RF Transmission Hyperspace</td>
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<td>Andrew L. Drozd, Irina P. Kasperovich, Andrew C. Blackburn, Clifford E. Carroll, Jr., ANDRO Computational Solutions, USA, Chilukuri K. Mohan, Syracuse University, USA</td>
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<td>9:40</td>
<td>Broadband Over Power Lines (BPL) Interference Analysis</td>
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<td>Joel T. Fox, ARINC Engineering Services, USA</td>
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