June 1, 2009
URSI Commission A Business Meeting

2009 IEEE AP-S/URSI
Charleston, SC

Ozlem Kilic
The Catholic University of America
Washington, DC
kilic@cua.edu

Agenda

- Welcome and Guests: ***Attendance List*** & Officers
- Minutes of the January 2009 Meeting (Boulder)
- Meetings: Upcoming & Topics
- Technical Activities
- Membership, new nominations
- Old Business
- New Business
- Adjourn (Next Meeting – January, Boulder)

Officers of Commission A

- Chair : Ozlem Kilic, CUA (2008-2011)
- Vice Chair: Chris Holloway, NIST
- Secretary: Mike Janezic, NIST (voted by e-mail, 15 responses, all in favor, 2/09)

Jan 2009 – URSI/USNC Commission A, Boulder, CO
Highlights of the Minutes

1. Approved participation of Commission A in the AP-S/URSI meetings until 2012.
2. Next General Assembly will be held in Istanbul, Turkey, August 13-20, 2011. USNC will propose to sponsor the student paper competition there as well.
3. The limitation on the number of co-authors for student paper competition: There are concerns about too many authors providing advisory role for student papers. Currently there is no limit on the number of co-authors. However, all co-authors are required to submit a letter stating their role was advisory only. Imposing a limit was favored by some members but not strongly. There was a suggestion of requiring the student to be the only author. The discussion was left for another time on this recommendation.
4. Imposing a limit on the number of times a student can receive travel grant for the conference: The members were all in favor of limiting the number of awards to two per student.

Meetings: Upcoming & Topics

- 2010 URSI NRSM Boulder, CO, 6-9 January
- APS/URSI Joint Meeting, Toronto, Canada 10-17 July
  - 2010 Not a North American Radio Science Meeting
- 2011 APS/URSI Joint Meeting, Spokane, 3-7 July
- 2012 APS/URSI Joint Meeting, Chicago, 8-13 July

Technical Activities 2009 AP-S/URSI

- Total number of accepted papers = 1396
  - AP-S: 1048
  - URSI: 348 (25% of total)
  - URSI A: 26 (7.5% of all URSI papers)
- **URSI A Sessions:**
  Session 422: "Signal Analysis and Enhanced Algorithms for EM Metrology" (6 URSI-A papers)
  Session 526: "Material Characterization" (6 URSI-A papers)
  Session IF213: "Antenna Performance Analysis and Optimization " (10 URSI-A papers)

  Joint APS/URSI-A Sessions
  Session 110: "Antennas for 60 GHz applications" (1 URSI-A paper and 10 APS papers)
  Session 205: "Compact Antennas for Wireless Communications" (1 URSI-A paper and 8 APS papers)
  Session 326: "Applications of Dielectric Resonator and Lens Antennas"(1 URSI-A paper and 7 APS papers)

  Joint APS/URSI-A/URSI-B/URSI-K Session
  Session 309: "Biomedical Applications and EM Exposure"(1 URSI-A paper, 1 URSI-B paper, 2 URSI-K papers and 5 APS papers

Membership

- Seeking for new members, please consider nominating recent graduates, Ph.D. and M.S. students
- Requirements:
  - Technical Competence
  - Interest in URSI
  - Guidelines for Assoc:
    - 1-2 Single Author papers, 3-4 overall
    - 2 URSI presentations (at least 1 from A)
  - Guidelines for Full:
    - 3-4 Single Author papers, 5-6 overall
    - 3 URSI presentations (at least 2 from A)
- Nominations for Full Member
  - David Wikner
- Nominations for Associate Member
  - Brandon Good

David Wikner, ARL

- Education:

  - Stanford University, MS Physics, 1988.
  - Ohio Wesleyan University, BA Physics, Mathematics, 1986.

David Wikner, ARL (1/4)

- Education:
  - Stanford University, MS Physics, 1988.
  - Ohio Wesleyan University, BA Physics, Mathematics, 1986.

- Summary of Qualifications:

- Principal investigator for the research and exploration of millimeter-wave (MMW) imaging technology and phenomenology.
- Army representative on joint service panels for imaging through obscurants.
- MMW radar design engineering and scattering phenomena expert.
- Co-Chair of Millimeter Wave Imaging Conferences for SPIE (8 years).
- Technical representative/consultant for DARPA and others on multiple programs.
- Invited speaker for many technical panels and conferences including IEEE and MSS.

David Wikner (2/4)

- Experience

U.S. Army Research Laboratory, Adelphi, MD

Team Leader, Millimeter Wave Sensor Technology

- Initiate, guide, and execute DoD programs in millimeter-wave (MMW) imaging phenomenology, devices and systems.
- Guide programs on RF micro-Doppler Signatures of Humans and Compact Radar technology
- Design advanced MMW imaging systems and plan/conduct phenomenology experiments.
- Market team capabilities and expertise to other organizations for technology transition and to obtain funds to enhance team programs (DARPA, AFRL, AMRDEC, CERDEC, DoD joint service panels).
- Consult with numerous government agencies as a subject matter expert on MMW imaging phenomenology.
- Managed passive MMW imaging program (11 years, ~$25 million). Program resulted in the world's most advanced 25,000-pixel, 30-Hz MMW camera.
- Developed and managed with DARPA a successful program for new affordable focal plane array technologies for MMW Imaging. The program has achieved the world's most sensitive MMW detectors and will result in affordable imaging technology for new systems.

David Wikner (3/4)

- Led experiments to quantify the propagation of MMW energy through a thick dust cloud, like those created by landing helicopters. This work guided the course of DARPA's Sandblaster program for helicopter brownout.
- Led experiments to measure the ability of MMW imagers to detect obstacles during cloudy and foggy conditions.
- Led effort to develop MMW bolometer detectors using the high temperature superconductor YBCO.
- Led experiments to measure the effect of cubic phase optical elements on the defocusing of short range MMW imagers. This work extends the utility of MMW concealed weapons imagers.
- Led experiments to measure the passive polarimetric MMW signature of trees, vehicles, soils, sand, asphalt, concrete, and other materials. This work has established a large phenomenological database for the MMW imaging community.

David Wikner, Publications (4/4)

Refereed journal papers

- "94-GHz Imager with Extended Depth of Field," Joseph N. Mait, David A. Wikner, Mark S. Mirotznik, Joseph van der Gracht, Gregory P. Behrmann, Brandon L. Good, Scott A. Mathews, IEEE Antennas and Propagation, accepted for publication.
- "Thin Film YBCO Pixels for MMW Detector," E. Zakar, D. Wikner, M. Dubey, P. Amirtharaj, Advances in Science and Technology, Vol. 54 (Sep. 2008) pp 434-438.
- "Epitaxial thin film YBCO membrane structure for thermal detectors," E. Zakar, D. Wikner, M. Dubey, D. Potrepka, S. Tidrow. Integrated Ferroelectrics, Vol. 95, Issue 1, Dec. 2007, pp. 17-25.
- "Millimeter-Wave Radiometry of Deciduous Trees at Low Depression Angle", D. Wikner, R. Dahlstrom, Radio Science, Vol. 33, No. 6, November-December 1998, pp1609-1615.

Editor / Reference works

- "Passive Millimeter-Wave Imaging Technology XI," Editors: Roger Appleby, David A. Wikner, Proceedings of the SPIE, Vol. 6211, 19 March 2008.
- "Passive Millimeter-Wave Imaging Technology X," Editors: Roger Appleby, David A. Wikner, Proceedings of the SPIE, Vol. 6211, 19 April 2007.
- "Passive Millimeter-Wave Imaging Technology IX," Editors: Roger Appleby, David A. Wikner, Proceedings of the SPIE, Vol. 6211, 19 April 2006.
- "Passive Millimeter-Wave Imaging Technology VIII," Editors: Roger Appleby, David A. Wikner, Proceedings of the SPIE, Vol. 5789, 30-31 March 2005.
- "Radar Sensor Technology VIII and Passive Millimeter-Wave Imaging Technology VII," Editors: Robert Trebits, James L. Kurtz, Roger Appleby, Neil A. Salmon, David A. Wikner, Proceedings of the SPIE, Vol. 5410, 14-15 April 2004.
- "Passive Millimeter-wave Imaging Technology VI and Radar Sensor Technology VII," Editors: Roger Appleby, David A. Wikner, Robert Trebits, James L. Kurtz, Proceedings of the SPIE, Vol. 5077, 23-24 April 2003.
- "Infrared and Passive Millimeter-wave Imaging Systems: Design, Analysis, Modeling, and Testing," Editors: Roger Appleby, Gerald C. Holst, David A. Wikner, Proceedings of the SPIE, Vol. 4719, 3-5 April 2002.

15 conference papers on radar, radiometer measurements, passive mmwave imaging techniques, mmwave wave propagation. etc.

Brandon Good, NSWCCD

- **EDUCATION: BS and MS in Electrical Engineering, December 2008**
  - The Catholic University of America, Washington, DC
  - Graduated Summa Cum Laude with a GPA of 3.75 on a 4.0 scale
- **EXPERIENCE:**
  - Designed, fabricated, and characterized frequency selective surfaces
  - Designed, built, and maintained Millimeter Wave Characterization System
  - Supervised undergraduate research assistants (CUA)
- **ACTIVITIES:**
  - Treasurer, IEEE Student Chapter, 2007-2008
  - Member, IEEE Student Chapter, 2006-2008
  - Habitat for Humanity 2004-2008

Brandon Good

- **PUBLICATIONS:**
- M.S. Mirotznik, S.A. Mathews, **B. Good**, C. Schultz, D. Wikner and J.N. Mait, 'Iterative Design of Moth-Eye AR Surfaces at Millimeter Wave Frequencies', submitted to **IEEE Trans on Antennas and Propagation** (December 2007).
- J.N. Mait, D. Wikner, M.S. Mirotznik, J. van der Gracht, S.A. Mathews and **B. Good**, 'Extended Depth-of-Field Imaging at 94 GHz', submitted to **IEEE Trans on Antennas and Propagation** (December 2007).
- S.A. Mathews, M.S. Mirotznik, **B.L. Good** and A. Pique, 'Rapid prototyping of frequency selective surfaces by laser direct-write', **Photonics West**, January 2007 (Invited Presentation)
- M.S. Mirotznik, O. Kilic, S.A. Mathews, and **B. Good**, 'Design of Moth-eye Antireflective Surfaces at Microwave and Millimeter Wavelengths', **North American Radio Science Meeting (URSI)**, Ottawa Canada, July 2007

End of the line

- Old Business
- New Business
- Adjourn (Next Meeting – January 2009, Boulder, CO)