



International Union of Radio Science U.S. Commission B

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MINUTES Commission B Business meeting

2015 IEEE APS & URSI
Vancouver, BC, Canada
July 21, 2015

1. Meeting called to order at 5:00 pm by Chair John Volakis.
2. John Volakis welcomed members and guests.
3. John Volakis thanked previous chair Sembiam Rengarajan for his service.
4. Sign-up sheets were circulated.
5. Guests were introduced.
6. Minutes of the 2014 Boulder business meeting were approved.
7. John Volakis thanked Christos Christodoulou for his service as the former technical activity chair.
8. Chair John Volakis welcomed Branislav Notaros as the new technical activities chair and thanked for his commitment.
9. Chair Report-- Officers
 - Officers
 - Introduced Chelsea Bock who will help with website
Chelsea Bock, Program Coordinator, Board on International Scientific Organizations
Policy and Global Affairs
The National Academies of Sciences, Engineering, and Medicine
500 Fifth Street, NW, Washington, DC 20001, phone: 202-334-2302
 - USNC Officers
 - Additional members (such as at large)
 - Student travel program and paper competition
 - International officers

10. Chair Report-- Website Information

We have synchronized all meeting minutes onto the commission B page on national academy site: http://sites.nationalacademies.org/PGA/biso/URSI/PGA_080674

The site includes minutes of Business Meetings since 1997, full membership list, nomination form, and other information.

UIC Site, USNC-B: <http://www.ece.uic.edu/~URSICommb/>

Minutes from the Business Meetings (back to 1997) are there.

Other links: USNC: <http://www.usnc-ursi.org/>

International URSI-B: <http://www.ursi.org/B/index.htm>

International URSI: <http://www.ursi.org/>

11. Chair Report-- URSI Meetings

- Sembiam Rengarajan introduced hotel for EMTS, John Volakis expressed gratitude for Sembiam for bringing EMTS.
 - George Uslenghi corrected John Volakis about SPC for EMTS.
- Joint APS/URSI meetings
- International URSI Triennial Meetings
 - John Volakis thanked AT-RASC and Uslenghi
 - Steven Ross corrected the City for the Korea meeting
- Announcement for 2017 GASS
- Other meetings of interest

12. Chair Report—Action Items

1: Will Com B participate 2017, all pass

2: About abstract and paper.

- *Discussions*
 - Yahya Rahmat-Samii: “What is the importance of going to explore with one page? One page may not deserve to be on there.”
 - Ross Stone: “If it is only one page, then it won’t be on explore. APS Ad had a motion. The issue is if we should give people that option.”
 - Ross thinks it makes sense to give that option, however, the downside is more work to review. But it may attract more people to the meeting.
 - Ross wants to move it.
 - Uslenghi asked if this applies to only the Boulder meeting or both summer and Boulder meetings.
 - Don Wilton: “Is Boulder meeting also sponsored by IEEE?” **Answered: Yes.**
 - Ronald Pogorzelski asked clarifications on what APS AdCom said about the issue.
 - Bob Nevels: “Everyone is required to have the same requirement, two pages. Most conference like Eucap are all required to have 2 pages to go to IEEE explore.”
 - Yahya Rahmat-Samii talked about the advantage of URSI’s current one-page abstract.
 - Mike Jensen asked to clarify the motion. **Clarified.**
 - Called for a motion.
 - Motioned made for part 2-a on David Jackson’s report. Ross moved the motion, Edward Kuester Seconded it.

Vote, motion passed for 2-page option

• **Discussions**

- David Jackson suggested if the 2020 meeting should be North American RS meeting. He said it would be a bit short. He also clarified that the Boulder Meeting will have to be canceled.
- **Motion: still have 2020 Boulder meeting.**
- George Uslenghi raised question of if by having a 2020 Boulder meeting, it would make it a pressure that all committee to have two meetings in the same year.
- Steve Long asked the question of its name. **Answer:** It is National not North American meeting.
- Uslenghi pointed out that it would force us to attend 3 meetings in one year.
- Pogorzelski: “The purpose of the Boulder meeting is to satisfy URSI requirement to meet once a year. Once we join Montreal meeting, then we already satisfy this requirement.”
- Mahta Moghaddam: “Not a done deal right? Other commission can vote too, right?”
- Amir Zaghoul: “Why we are changing the rule that we have followed many years?”
- Ross: “There are actually no rule.”
- All (many members) commented that it was only a tradition.

Vote, motion failed.

• **Discussions**

- Majority of members commented/suggested that the motion should be “This is only to consider to have a 2012 Boulder meeting”.
- **Vote, motion passed.**

13. Committee Report-- Technical Activities Report

Branislav Notaros presented the Technical Activity report (attached at the end of these meeting minutes).

14. Committee Report-- Membership Committee

Ed Rothwell presented Membership Committee Report.

Reminders were made for qualifications for both associate and full members.

One nomination, John Young, was reviewed for full membership.

John Young was asked to leave the room while members reviewed and voted for him. He was elected unanimously.

15. Chair Report-- Old Business

None.

16. Chair Report-- New Business

None.

17. Adjourned at 6:12 pm.



URSI Commission-B Special Sessions & Stats

**21 July 2015
Vancouver, BC, Canada**

**Branislav M. Notaros
Colorado State University**

2015 IEEE AP-S Int. Symposium & North American URSI Mtg., Vancouver, BC, Canada
AP-S/URSI Joint Special Sessions – SP (19 sessions)

Session Title	Organizer(s)
Millimeter-Wave Antenna Arrays for 5G Wireless Handheld Devices	Mohammad Sharawi , Tayeb Denidni
Advances in the Development of GNSS Antennas and Controlled Radiation Pattern Arrays	Ning Yang, Ronald Johnston
Innovative Analytical and Numerical Techniques for the Solution of Open EM Problems: Complex Scattering Problems, Special Materials, Nanostructures	Guido Lombardi, Andrea Alu
Antennas and Sensors for Epidermal Electronics Gaetano Marrocco	John Batchelor
Compressive Sensing and Applications in Antennas and Imaging Technologies	Ozlem Kilic, Aly Fathy
Novel Designs and Applications of Wireless Power Transfer	Bingnan Wang, Sameer Sonkusale
Passive and Active Nano-Antennas	Richard Ziolkowski, Samel Arslanagic
Additive Manufacturing of Antennas and Electromagnetic Structures	Bae-Ian Wu, Isaac Ehrenberg
Memorial Session for Julien Perruisseau-Carrier	Sean Hum, Ozlem Aydin Civi
4D Antenna Arrays: Theory, Techniques and Applications	Paolo Rocca, Shiwen Yang
Exploring Innovative Ways to Revitalize EM Education Globally	Parveen Wahid, Tzyh-Ghuang Ma, Cynthia Furse
Metatronics: Theory, Methods and Applications	Giacomo Oliveri, Nader Engheta, Stefano Maci
Power-Efficient, Wearable and Wireless Biomedical Sensors	Reza Fazel-Rezai, Sima Noghianian
International Collaborations on Next-Generation Radio Astronomical Instrumentation I, II, and III	David Davidson, Karl F. Warnick
Special Session to Honour the Career of Prof. P.L.E. Uslenghi	Roberto Graglia, Nicolaos Alexopoulos
Millimeter-Wave Antennas for 5G Wireless Handheld Devices	Mohammad Sharawi, Tayeb Denidni
Fundamental Considerations of Electromagnetic Energy and Interactions: Theory and Applications	Yahya Antar, Said Mikki

For Reference:

2012 APS/URSI Chicago, IL: 13 APS/URSI Joint Special Sessions

2013 APS/URSI Orlando, FL: 10 APS/URSI Joint Special Sessions

2014 APS/URSI Memphis, TN: 16 APS/URSI Joint Special Sessions

2015 IEEE AP-S Int. Symposium & North American URSI Mtg., Vancouver, BC, Canada
URSI B Sessions – UB (35 sessions, 279 papers) – according to the Program

Session Title	No. of Papers	Session Chair(s)
Printed Antennas and Applications	8	Poster Session
Nanoantenna Considerations	10	Nader Behdad, Andrey Miroshnichenko
Nonlinear Media	3	Poster Session
Dispersion-Engineered Periodic Structures and Applications	6	Poster Session
Guided Waves and Waveguiding Structures	9	Carey Rappaport, Symon Podilchak
Millimeter-Wave and Terahertz Antennas	10	Poster Session
Active Antennas and Matching Techniques	9	Edward Rothwell, Jessica Ruyle
Theoretical Electromagnetics	6	Ioannis Besieris, Michael Havrilla
Lens and Aperture Antennas	5	Poster Session
MIMO Antennas and Systems	4	Ronald Johnston, Dimitris Anagnostou
Metamaterial Lenses and Lens Antennas	9	Raj Mittra, Francisco Falcone
Reconfigurable Antennas and Transmission Lines	5	Poster Session
Imaging, Inverse Scattering and Remote Sensing	10	Mahta Moghaddam, Ozlem Kilic
Nanoscale Electromagnetics	10	Weng Cho Chew, Silvio Hrabar
Antenna Measurement Concepts and Techniques	9	Sembiam Rengarajan, Puyan Mojabi
High-Frequency Techniques	5	Amir Boag, Matteo Albani
Electrically Small and Low Profile Antennas	10	Poster Session
UWB Antennas and Electromagnetics	5	Poster Session

2015 IEEE AP-S Int. Symposium & North American URSI Mtg., Vancouver, BC, Canada
URSI B Sessions – UB cont'd (35 sessions, 279 papers) – according to the Program

Session Title	No. of Papers	Session Chair(s)
Domain-Decomposition and Discontinuous-Galerkin Methods	10	Qing Huo Liu, Marinos Vouvakis
Techniques for Enhancing Efficiency and Accuracy of IE and PDE Solvers	10	Weng Cho Chew, Pasi Ylä-Oijala
Frequency Selective Surfaces and Extraordinary Transmission	9	Edward Kuester, David R. Jackson
Theoretical Studies in Metamaterial Characterization	10	Andrea Alu, Gullu Kiziltas
Time-Domain Integral-Equation Methods	10	Balasubramaniam Shanker, Hakan Bagci
Frequency-Domain Integral-Equation Methods	10	Andrew Peterson, Branislav Notaros
Antenna Arrays I	9	Poster Session
Antenna Arrays II	5	Poster Session
Volume-Surface Integral-Equation Methods	5	Vladimir Okhmatovski
Advances in FDTD Modeling and Applications	10	Susan Hagness, Jean-Pierre Berrenger
Filter Design, Transitions and Feeding Networks	7	Poster Session
Propagation Phenomena and Effects	5	Poster Session
RFID Antennas, Systems and Applications	9	Poster Session
Scattering, Diffraction and Rough Surface Scattering	8	Poster Session
Wireless Communications and Sensor Networks	8	Poster Session
Design and Applications of Metasurfaces	10	Ariel Epstein, Gurkan Gok
Fast Direct Integral-Equation Solvers	10	Francesco Andriulli, Abdulkadir Yücel

For Reference:

2014 URSI Boulder, Colorado, URSI B Sessions and Papers:

12 URSI B sessions + **7** joint sessions = **19** sessions;

72 URSI B papers + **52** joint papers = **124** papers

2015 IEEE AP-S Int. Symposium & North American URSI Mtg., Vancouver, BC, Canada

Papers submitted, accepted, rejected, and withdrawn

(Breakdown: AP, URSI, URSI from US authors, URSI from Canadian authors)

Submitted	Accepted	Rejected	Withdrawn
Total Submitted: 1974	Total Accepted: 1867	Total Rejected: 105	Total Withdrawn: 31
- AP Submitted: 1392	- AP Accepted: 1301	- AP Rejected: 89	- AP Withdrawn: 24
- URSI Submitted: 572	- URSI Accepted: 549	- URSI Rejected: 16	- URSI Withdrawn: 7
- URSI From US: 328	- URSI from US: 322	- URSI From US: 6	- URSI from US: 6
- URSI From Canada: 56	- URSI from Canada: 56	- URSI From Canada: 0	- URSI from Canada: 0

URSI	Submitted Papers	Accepted Papers	Sessions
A	28	27	3
B	292	279	35
C	13	13	2
D	10	9	2
E	12	10	1
F	80	78	10
G	6	4	1
J	10	10	1
K	47	46	7
URSI Special	74	73	1
Total	572	549	64

URSI B vs. URSI All vs. APS/URSI All

	URSI B	URSI All	APS/URSI All
APS/URSI 2015 Vancouver	279 (50% of all URSI papers)	549 (30% of all papers)	1836 (accepted – withdrawn)
URSI Boulder 2014	124 (B only 72; joint: 52) (31% of all URSI papers)	394	

Historical Data

2010	Boulder	83 ⁽³⁴⁴⁾	10	
		papers in special sessions: (B-only: 16, Joint: 12, Total:28)		
2010	Toronto			
		URSI B only	269	17% of total conference papers
		All URSI	405	26% of total conference papers
2011	Boulder	86 ⁽³⁵⁶⁾	11	
		papers in special sessions: (B-only: 5, Joint: 31, Total:36)		
2011	Spokane			
		URSI B only	313	23% of APS+URSI (259 B only _ 54 in SS)
		All URSI	442	33% of APS+URSI (348 URSI only+94 in SS)

All 2014 URSI-B Boulder Sessions

Session Title	Number of papers	Chairs or Organizers
Advances in Antenna Arrays	9	John Volakis Atef Elsherbeni
Metamaterials Structures	10	Filippo Capolino Yahya Rahmat-Samii
Antenna Theory, Design and Measurement	10	Dejan Filipovic Christos Christodoulou
Scattering and Inverse Scattering	5	Danilo Erricolo Piergiorgio Uslenghi
Wideband Antennas	4	Kubilay Sertel Sembiam Rengarajan
Complex Media & Novel Materials for Antennas	5	James Breakall Michael Havrilla
Guided Waves and Waveguiding Structures	4	Filippo Capolino Hao Xin,
Microstrip & Printed Devices and Antennas	5	Sembiam Rengarajan Gregory Huff
Electromagnetic Interaction and Coupling	5	David Jackson Zoya Popovic
Terahertz Applications	5	Hao Xin John Volakis
Antenna Theory and Design	4	Everett Farr Gregory Huff
Numerical Methods	6	Branislav Notaros Atef Elsherbeni,

2014 URSI-B Joint Sessions at Boulder

Session Title	Number of papers	URSI Commission	Organizers
Biophotonics	5	B/K	Jamesina Simpson Ilker Capoglu
Small Satellite Radio Science and Technology	10	B/F	William Blackwell Reyhan Baktur,
Cognitive Radio and Signal Processing	5	B/C	Christos Christodoulou Jean-Francois Chamberland
Spectrum Challenges and Changes	9	B/CE	Lawrence Cohen Thomas Higgins
Wireless Power Transfer and Energy Harvesting Systems	5	B/CE	Majid Manteghi Danilo Erricolo
Advances in Human Body Modeling for Sensing	9	B/K	Yahya Rahmat-Samii Erdem Topsakal
Terahertz Medical Imaging	9	B/K	Kubilay Sertel Zachary Taylor

2014 URSI Boulder Summary

	Number of Sessions	Number of Papers
URSI Commission-B Total	12 (B) 1 (C/B joint) 1 (F/B joint) 2 (CE/B joint) 3 (K/B joint) <hr/> 19 (Total)	72 5 10 14 <u>23</u> 124
URSI Total (All Commissions)	52	394

2014 URSI B Papers (Boulder, Colorado), attendance:

Total Papers (including joint) in all Sessions: 394 (124 URSI B, including Joint)

URSI B only papers : 72

Papers in joint sessions: 52

USNC-URSI National Radio Science Meetings					
Special Sessions since 2010					
2010	2011	2012	2013	2014	2015
3	9	4	4	7	

Possible Commission B Special Sessions for the 2016 USNC-URSI National Radio Science Meeting, Boulder, Colorado

- | | |
|---|--|
| 1. Terahertz Antennas and Applications | Kubilay Sertel, Ohio State, & Hao Xin, Univ. of Arizona |
| 2. 3D Printed Antennas | Jenifer Bernhard, Univ. of Illinois, & Jacob Adams, North Carolina State |
| 3. Wearable Antennas and Electronics | John Volakis, Ohio State, & Manos Tentzeris, Georgia Tech |
| 4. Millimeter-Wave Antennas and Back-Ends | Dejan Filipovic, Univ. of Colorado, & John Papapolymerou, Georgia Tech |
| 5. Transformation Electromagnetics and Optics | Do-Hoon Kwon, UMass Amherst, & Douglas Werner, Penn State |
| 6. Energy Harvesting Rectennas and Back-Ends | Zoya Popovic, Univ. of Colorado, & Regan Zane, Utah State |
| 7. Antennas for Small Satellites | Reyhan Baktur, Utah State, & Wayne Shiroma, University of Hawaii |
| 8. Antennas/RF for Medical Imaging and Sensing | Susan Hagness, Univ. of Wisconsin, & Cynthia Furse, Univ. of Utah |
| 9. Uncertainty Quantification in CEM and EDA | Jamesina Simpson, Univ. of Utah, & Sourajeet Roy, Colorado State |
| 10. Reconfigurable Antennas and Circuits | Christos Christodoulou, U. of New Mexico, & Xun Gong, U. of Central Florida |
| 11. Emerging Applications of CEM | Branislav Notaros, Colorado State, & Qing Liu, Duke |
| 12. Electromagnetics Education | Branislav Notaros, Colorado State, & Karl Warnick, BYU |

USNC-URSI National Radio Science Meetings						
Special Sessions since 2010						
2010	2011	2012	2013	2014	2015	2016
3	9	4	4	7		12