



SPACOMM 2012

The Fourth International Conference on Advances in Satellite and
Space Communications

April 29 - May 4, 2012

Chamonix / Mont Blanc, France

SPACOMM 2012 Editors

Timothy Pham, Jet Propulsion Laboratory, USA

Petre Dini, Concordia University, Canada // China Space Agency Center, China

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2012) by International Academy, Research, and Industry Association (IARIA)
Please refer to the Copyright Information page.

Printed by Curran Associates, Inc. (2012)

International Academy, Research, and Industry Association (IARIA)
412 Derby Way
Wilmington, DE 19810

Phone: (408) 893-6407
Fax: (408) 527-6351

petre@iaria.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

SPACOMM 1: SATELLITE AND SPACE COMMUNICATIONS I

A Real Time Algorithm for Bandwidth and Time-Slot Assignment for Rain Faded DVB-RCS Systems	1
<i>Mohamed Al-Mosawi, Rinat Khusainov, Boris Gremont</i>	
A Practical Simulation Tool for Predicting Spectral Regrowth in Communication Satellite Receivers	6
<i>Veli Yanikgonul, Murat Husnu Sazli, Lokman Kuzu, Mesut Gokten, Ahmet Fazil Yagli</i>	
Assessment of Weather Effects on DSN Antenna Tracking at Ka-band.....	12
<i>Timothy Pham</i>	
Nonlinearity Compensation Technique for Common Band Satellite Channel	16
<i>Takehiro Ishiguro, Takao Hara, Minoru Okada</i>	

SPACOMM 2: SATELLITE AND SPACE COMMUNICATIONS II

DVB-S2 Model Based on Reed-Solomon Outer Encoder	21
<i>Iva Basic, Kresimir Malaric, Emil Dunic</i>	
Outage Probability Evaluation of Land Mobile Satellite Cooperative Diversity Communication System.....	26
<i>Xu Wang, Mingchuan Yang, Qing Guo</i>	
In Orbit Antenna Pattern Tests and Service Coverage Measurements of COMS	31
<i>Jin Ho Jo, Moon Hee You, Seong Pal Lee, Jae Hoon Kim</i>	
Determining the Accuracy of the On Board Propagation Software for Optical Intersatellite Link	36
<i>Umit C. Yilmaz, Ismail H. Cavdar, Cemal Sakaci</i>	

SPACOMM 3: SATELLITE AND SPACE COMMUNICATIONS III

Complete Partitioning Policy with Different Handover Priority Schemes for Multi-Class Traffic in LEO Mobile Satellite Systems.....	41
<i>Amr Salah El-Din Hashim Matar, Ibrahim I. Ibrahim, Gamal Abd Elfadeel, Hesham M. Z. Badr</i>	
A Raptor-based Adaptive Erasure Code over Ka-band Space Channel.....	48
<i>Jie Zhou, Jian Jiao, Zhi-Hua Yang, Shu-Shi Gu, Qin-Yu Zhang</i>	
A LT-Based Distributed Codes Over Erasure Channel	53
<i>Liting Wei, Jian Jiao, Zhihua Yang, Shushi Gu, Qinyu Zhang, Youhua Fan</i>	
A CFDP-based Multi-state Model on Ka-band Weather-dependent Channel	60
<i>Huiyuan Li, Zhihua Yang, Jian Jiao, Qinyu Zhang</i>	

SPACOMM 4: SATELLITE AND SPACE COMMUNICATIONS IV

An Improved Double Retransmission Scheme to Deferred NAK CFDP	67
<i>Haitao Wu, Zhihua Yang, Jian Jiao, Qinyu Zhang</i>	
A Weather-forecasting Improved CFDP over Ka-band Channel.....	73
<i>Qiuping Zheng, Zhihua Yang, Jian Jiao, Qinyu Zhang</i>	
Optimum Selective Beam Allocation Scheme for Satellite Network with Multi-spot Beams	78
<i>Unhee Park, Hee Wook Kim, Dae Sub Oh, Bon Jun Ku</i>	

SPACOMM 5: SIGNAL PROCESSING IN TELECOMMUNICATIONS

Investigating the Effect of Bit Depth Rescaling on Spectral Bands Cross-Correlation in Hyperspectral DataCube.....	82
<i>Ayman Mahmoud Mohamed Ahmed, Salwa ElRamly</i>	
New Factor Graph Based Multiuser Detector for Spectrally Efficient CPM	86
<i>Nele Noels, Marc Moeneclaey</i>	
Dependency of SAR Image Structure Descriptors with Incidence Angle	92
<i>Corneliu Octavian Dumitru, Mihai Datcu</i>	

Evaluation of Complexity Versus Performance for Turbo Code and LDPC Under Different Code Rates	98
<i>Alaa Eldin Hassan, Moawad Dessouky, Atef Abou Elazm, Mona Shokair</i>	

SPACOMM 6: APPLICATIONS

Narrowband Uplink Transmission in LTE-based Satellite Radio Interface.....	104
<i>Hee Wook Kim, Kunseok Kang, Bon-Jun Ku</i>	
Data-Bits Asynchronous Tracking Loop Scheme for High Performance Real-Time GNSS Receivers	108
<i>Pedro Roncagliolo, Javier Garcia, Carlos Muravchik</i>	
Author Index	