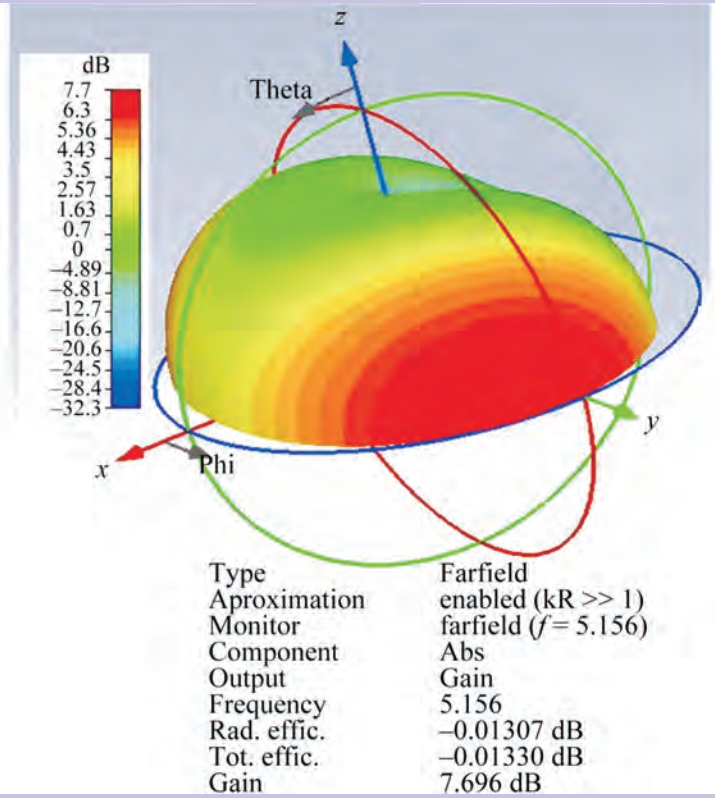
Scientific Research

International Journal of

Communications, Network and System Sciences

ISSN: 1913-3715

Volume 4, Number 6, June 2011



ISSN: 1913-3715

www.scirp.org/journal/ijcns/

JOURNAL EDITORIAL BOARD

ISSN 1913-3715 (Print) ISSN 1913-3723 (Online)
http://www.scirp.org/journal/ijcns/

Editor-in-Chief

Prof. Boris S. Verkhovsky	New Jersey Institute of Technology, USA

Editorial Board

Prof. Dharma P. Agrawal	University of Cincinnati, USA
Prof. Adel R. Awad	University of Tishreen, Syria
Prof. Eduardo A. Castro	La Plata National University, Argentina
Prof. Hengda Cheng	Utah State University, USA
Prof. Ko Chi Chung	National University of Singapore, Singapore
Prof. Daniel B. da Costa	Federal University of Ceara, Brazil
Dr. Franca Delmastro	Italian National Research Council, Italy
Dr. Pablo R. Duchowicz	La Plata National University, Argentina
Prof. Mohamed B. El_Mashade	Al_Azhar University, Egypt
Prof. Kurt J. Engemann	Iona College, USA
Prof. Morteza Esmaeili	Isfahan University of Technology, Iran
Dr. Li Huang	Interuniversity Microelectronics Centre, Netherlands
Prof. Hiroaki Ishii	Kwansei Gakuin University, Japan
Prof. N. Ch. S. N. Iyengar	VIT University, India
Prof. Felipe Lara-Rosano	National Autonomous University of Mexico, Mexico
Dr. Nicola Mastronardi	Institute of Computational Mathematics “M. Picone”, Italy
Dr. Lim Nguyen	University of Nebraska-Lincoln, USA
Prof. Yi Pan	Georgia State University, USA
Prof. Yuriy S. Polyakov	USPolyResearch, USA
Prof. Suresh Rai	Louisiana State University, USA
Dr. Kosai Raoof	Joseph Fourier University, France
Prof. Bimal Roy	Indian Statistical Institute, India
Prof. Shaharuddin Salleh	University Technology Malaysia, Malaysia
Prof. Innokentiy V. Semushin	Ulyanovsk State University, Russia
Dr. Hrishikesh Venkataraman	Dublin City University, Ireland
Prof. Shi Ying	Wuhan University, China

Editorial Assistant

Jing Guo	Scientific Research Publishing, USA. Email: ijcns@scirp.org

Int'l J. of Communications, Network and System Sciences, **2011, 4, 357-415**
Published Online June 2011 in SciRes (http://www.SciRP.org/journal/ijcns/)

TABLE OF CONTENTS

Volume 4 Number 6 June 2011

Space Complexity of Algorithm for Modular Multiplicative Inverse
B. Verkhovsk y.....357
Multi-Resolution Fourier Analysis Part I: Fundamentals
N. Yah ya B ey.....364
Low Complexity Discrete Bit-Loading for OFDM Systems with Application in Power Line Communications
K. S. Al-Mawali, A. Z. Sadik, Z. M. Hussain.....372
Modified Dual Segment Rectangular Dielectric Resonator Antenna Terminated in a Bio-Medium
R. K. Gangwar, S. P. Singh, D. Kum ar.....377
PCA Application in Channel Estimation in MIMO-OFDM System
M. Nasseri, H. Bakhshi, S. Sahebdel, R. Falahian, M. Ahmadi.....384
Performance Study of the Association TCM-UGM/STBC to Reduce Transmission Errors of JPEG Images
M. Benaissa, A. Bassou, M. Beladgham, A. M. Lakhdar.....388
Impact of Mobility on Delay-Throughput Performance in Multi-Service Mobile Ad-Hoc Networks
M. Amnai, Y. Fakhri, J. Abouchabaka.....395
FEAR: Fuzzy-Based Energy Aware Routing Protocol for Wireless Sensor Networks
I. M . A LMomani, M . K . S aadeh.....403

The figure on the front cover is from the article published in Int'l J. of Communications, Network and System Sciences, 2011, Vol. 4, No. 6, pp. 377-383, by Ravi Kumar Gangwar, Surya Pal Singh and Devendra Kumar.

Copyright © 2011 SciRes.

International Journal of Communications, Network and System Sciences (IJCNS)

Journal Information

SUBSCRIPTIONS

The *International Journal of Communications, Network and System Sciences* (Online at Scientific Research Publishing, www.SciRP.org) is published monthly by Scientific Research Publishing, Inc., USA.

Subscription rates:

Print: $79 per issue.
To subscribe, please contact Journals Subscriptions Department, E-mail: sub@scirp.org

SERVICES

Advertisements
Advertisement Sales Department, E-mail: service@scirp.org

Reprints (minimum quantity 100 copies)
Reprints Co-ordinator, Scientific Research Publishing, Inc., USA.
E-mail: sub@scirp.org

COPYRIGHT

Copyright©2011 Scientific Research Publishing, Inc.

All Rights Reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, scanning or otherwise, except as described below, without the permission in writing of the Publisher.

Copying of articles is not permitted except for personal and internal use, to the extent permitted by national copyright law, or under the terms of a license issued by the national Reproduction Rights Organization.

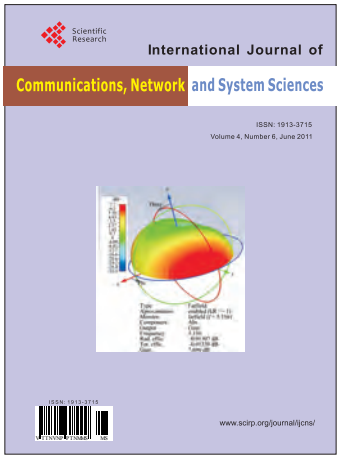
Requests for permission for other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works or for resale, and other enquiries should be addressed to the Publisher.

Statements and opinions expressed in the articles and communications are those of the individual contributors and not the statements and opinion of Scientific Research Publishing, Inc. We assumes no responsibility or liability for any damage or injury to persons or property arising out of the use of any materials, instructions, methods or ideas contained herein. We expressly disclaim any implied warranties of merchantability or fitness for a particular purpose. If expert assistance is required, the services of a competent professional person should be sought.

PRODUCTION INFORMATION

For manuscripts that have been accepted for publication, please contact:
E-mail: ijcns@scirp.org

Call for Papers



International Journal of

Communications, Network and System Sciences (IJCNS)

ISSN 1913-3715 (Print) ISSN 1913-3723 (Online)

http://www.scirp.org/journal/ijcns/

IJCNS is an international refereed journal dedicated to the latest advancement of communications and network technologies. The goal of this journal is to keep a record of the state-of-the-art research and promote the research work in these fast moving areas.

Editor-in-Chief

Prof. Boris S. Verkhovsky	New Jersey Institute of Technology, USA

Subject Coverage

This journal invites original research and review papers that address the following issues in wireless communications and networks. Topics of interest include, but are not limited to:

Ad Hoc and Mesh Networks	Network Survivability
Coding, Detection and Modulation	Next Generation Network Architectures
Cognitive Radio	Reconfigurable Networks
Communication Networks Architecture Design	Resource Management
Cooperative Communications	Satellite Communication
Embedded Distributed Systems	Sensor Networks
Global Networks	Simulation and Optimization Tools
Heterogeneous Networking	UWB Technologies
MIMO and OFDM Technologies	Wave Propagation and Antenna Design
Network Protocol, QoS and Congestion Control	Wireless Personal Communications
Network Reliability, Security and Privacy	

We are also interested in:

- Short reports—Discussion corner of the journal:
  2-5 page papers where an author can either present an idea with theoretical background but has not yet completed the research needed for a complete paper or preliminary data.
- Book reviews—Comments and critiques.

Notes for Intending Authors

Submitted papers should not have been previously published nor be currently under consideration for publication elsewhere. Paper submission will be handled electronically through the website. All papers are refereed through a peer review process. For more details about the submissions, please access the website.

Website and E-Mail

http://www.scirp.org/journal/ijcns ijcns@scirp.org