

CURRICULUM VITAE FOR IVAN B. DJORDJEVIC

CHRONOLOGY OF EDUCATION

Postdoctoral Institutions:

- University of Arizona, Tucson, USA, 12/2001-9/2002
- National Technical University of Athens, Athens, Greece, 4/2000-5/2001

8/1999	Ph.D.	Electrical Engineering University of Nis, Nis, Yugoslavia Dissertation: Analysis and Optimization of Coherent Optical Systems with the Phase-Locked Loop Advisor: Mihajlo C. Stefanovic
2/1997	M.S.	Electrical Engineering University of Nis, Nis, Yugoslavia Thesis: Performance of Coherent Optical Systems Advisor: Mihajlo C. Stefanovic GPA: 10/10
11/1994	B.S.	Electrical Engineering University of Nis, Nis, Yugoslavia Thesis: Performance of Satellite Communication Systems Advisor: Mihajlo C. Stefanovic Graduated with highest distinction (the Best Student of the University Award) GPA: 9.65/10 Majored in Electronics and Telecommunications

CHRONOLOGY OF EMPLOYMENT

8/12 –Present	Associate Professor (Tenured) Department of Electrical and Computer Engineering University of Arizona, Tucson, AZ Joint Appointment with College of Optical Sciences University of Arizona, Tucson, AZ
1/13-12/16	Guest/Visiting Professor & TU Fellow Technische Universität Darmstadt, Darmstadt, Germany
7/06 – 7/12	Assistant Professor Department of Electrical and Computer Engineering, College of Engineering Joint Appointment with College of Optical Sciences University of Arizona, Tucson, AZ
1/04 – 7/06	Research Assistant Professor Department of Electrical and Computer Engineering University of Arizona, Tucson, AZ
9/03 – 12/05	Senior Lecturer in Telecommunications Faculty of Computing, Engineering and Mathematical Sciences (now Bristol Institute of Technology) University of the West of England, Bristol, UK
9/02 – 9/03	Research Scientist Department of Electrical and Electronic Engineering University of Bristol Bristol, UK

12/01 – 9/02	Research Scientist Department of Electrical and Computer Engineering University of Arizona, Tucson, AZ
6/01 – 12/01	Senior Member of Technical Staff Tyco Telecommunications Eatontown, NJ, USA
4/00 – 5/01	Postdoctoral Fellow School of Electrical and Computer Engineering National Technical University of Athens, Athens, Greece
1/96 – 9/00	Telecommunication Equipment Specialist National Telecommunications Company Nis, Yugoslavia
11/94 – 1/96	Research/Teaching Assistant Faculty of Electronic Engineering University of Nis Nis, Yugoslavia

HONORS AND AWARDS

- 1885 Society Distinguished Scholar Award, 2014
- NSF CAREER Award, NSF CCF, 2010
- Elected to Senior Member Grade, Institute of Electrical and Electronics Engineers (IEEE), January 2011
- The Best Paper in the field of Telecommunications Award and Telenor Award, ETRAN 2007
- The Best Student of the University Award, University of Nis, Nis, Yugoslavia, 1995
- The Highest GPA Student Award, University of Nis, Nis, Yugoslavia, 1995
- Serbian Ministry of Science and Technology, 1995
 - M.Sc. Scholarship
- Serbian Ministry of Education, 1991-1994
 - B.Sc. Scholarship

SERVICE/OUTREACH

National/International Outreach

- Lead Guest Editor, IEEE Signal Processing Magazine, special issue on Advanced DSP and Coding for Multi-Tb/s-per-Channel Optical Transport (publication date: March 2014)
- Editor, IEEE Communications Letters
- Associate Editor, Frequenz
- Associate Editor, International Journal of Optics
- CLEO 2012-2014 TPC Member
- IEEE Photonics Conference (previously known as the IEEE LEOS Annual Meeting) 2009- 2012
Optical Communications Committee Member
- ACP 2010, 2014 TPC Member
- OFC 2011-2013, Digital Transmission Systems Committee Member
- SPIE PhotonicsWest 2014-2016 TPC Member
- IEEE TELSIS 2013, 2015 TPC Member
- IEEE GLOBECOM 2013-2015 Workshop OWC TPC Member
- IEEE Senior Member, Jan. 2011-present
- IEEE Member, 2002-2010
- IEEE Photonics Society Senior Member
- IEEE ComSoc Senior Member
- IEEE Communications Society Technical Committee on Transmission, Access and Optical Systems (TAOS) (Member)

- IEEE ComSoc Signal Processing and Communications Electronics Technical Committee (Member)
- OSA Lifetime Member
- Journals and Conferences Reviewer:
 - IEEE Photonics Technology Letters
 - IEEE Communications Letters
 - IEEE Transactions on Communications
 - IEEE/OSA Journal of Lightwave Technology
 - IEEE Transactions on Information Theory
 - IEEE Transactions on Wireless Communications
 - IEEE/OSA Journal on Selected Topics in Quantum Electronics
 - IEEE Journal of Selected Areas in Communications
 - IEEE Transactions on Signal Processing
 - Quantum Information Processing
 - IET Optoelectronics
 - OSA Optics Letters
 - OSA Optics Express
 - IEEE Communications Magazine
 - IEEE Photonics Journal
 - IEEE Transactions on Aerospace and Electronic Systems
 - Opto-Electronics Review
 - Frontiers of Optoelectronics
 - Journal of Parallel and Distributed Computing
 - AEUE International Journal of Electronics and Communications
 - Applied Physics B - Lasers and Optics
 - Wireless Personal Communications
 - Optical Engineering
 - Journal of Zhejiang University Science C (Computers & Electronics)
 - FREQUENZ
 - China Communications
 - IEEE International Conference on Communications (ICC)
 - IEEE International Symposium on Information Theory (ISIT)
 - IEEE Global Communications Conference (Globecom)
 - Wireless and Optical Communications Conference (WOCC)
- External Examiner/Project Proposal Evaluator for:
 - Israel Science Foundation
 - European Research Council (ERC)
 - Serbian Ministry of Education, Science, and Technological Development
 - McMaster University, Canada
 - University of Melbourne, Australia
 - Gwangju Institute of Science and Technology, Gwangju, Korea

Departmental and College Committees

- Peer Review Committee (PRC), ECE, 8/13-8/16
- Computer Policy Committee Member, ECE, 8/11-8/12
- Instructional Equipment and Software Planning Committee, ECE, 8/11-8/12
- Graduate Studies Committee (GSC) Member, ECE, 8/07 – 8/11
- College Graduate Studies Committee, 10/09-08/12
- MS in Photonic Communication Engineering Admission Committee Member, 06/10-present

Courses Developed/Modernized

- Digital Communications Systems (ECE 435A/535A) (Course developed)
- Quantum information processing and quantum error correction (ECE 633) (Course developed)
- Advanced optical communication systems (ECE/OPTI632) (Course developed)
- Wireless communications (ECE638) (Course developed)
- Introduction to digital communications (ECE435) (Course modernized)
- Optical communication systems ECE/OPTI 430/530 (Course modernized)

New Academic Degree Program Development

- A member of the team that developed a new joint MS degree program of two Colleges (College of Optical Sciences and College of Engineering) entitled MS in Photonic Communications Engineering, which started in Spring 2011. The ECE632 (Advanced Optical Communications) course, developed by Dr. Djordjevic, is thought as a core course for this academic program. The ECE 638 (Wireless Communications), another course thought by Dr. Djordjevic, is an elective course for this program.

Courses Taught

- ECE 633: Quantum Information Processing and Quantum Error Correction (Fall 2014, Fall 2011, Fall 2009)
- ECE 435A/535A Digital Communications Systems (Spring 2015, Spring 2014)
- ECE 638: Wireless Communications (Fall 2015, Fall 2012, Fall 2010, Spring 2009)
- ECE 435: Introduction to Digital Communications (Fall 2011, Fall 2010, Fall 2009, Fall 2008, Fall 2004)
- ECE/OPTI 632: Advanced Optical Communication Systems (Spring 2012, Fall 2010, Fall 2007)
- ECE/OPTI 430/530: Optical Communication Systems (Spring 2010, Spring 2007, Fall 2006)
- ECE 429/529: Digital Signal Processing (Spring 2008)
- ECE 340: Engineering Systems Analysis (Spring 2012, Spring 2008)
- ECE 537: Digital Communications Systems II (2005, co-taught with Prof. Vasic)
- ECE 535: Digital Communications Systems I (2005, co-taught with Prof. Vasic)
- University of the West of England UFE004C2: Introduction to Communication Systems and Signals (two semesters' course: one semester on Signals & Systems, one semester on Communication Systems)
- University of the West of England UFE084H1: Electrical Interface (equivalent to Introduction to Electrical Engineering)

Current PhD Students

- Ding Zou
- Zhen Qu
- Xiaole Sun
- Mingwei Yang
- Xiao Han

Former PhD Students

- Changyu Lin (Infinera)
- Tao Liu (Infinera)
- Yequn Zhang (ClariPhy)
- Murat Arabaci (ViaSat, Juniper Networks)
- Hussam G. Batshon (Subcom Tyco)
- Lyubomir L. Minkov
- Milos Ivkovic (Cornell University, co-supervised with Professors Vasic and Gabitov)
- Jose Castro (Panduit, co-advise with Dr. David Geraghty)

Current MS Students:

- Mickey Rhoades (ECE student)
- Aotuo Dong (OPTI student)

Former MS Students

- Xiao Han
- Di Xiao
- Paul Genz (University of Arizona)
- Hatice Irem Demir (TU Darmstadt, Germany) (MS thesis completed during student's visit to Dr. Djordjevic's Lab in 2014)
- Alaa Saleh (TU Darmstadt, Germany) (MS thesis completed during Dr. Djordjevic's sabbatical in 2013)
- Ding Zou (University of Arizona)
- Tao Liu (University of Arizona)
- Mahesh Sharma (Qualcomm)
- Hussam G. Batshon (Subcom Tyco)

- Samita R. Pokhrel
- Anita Patil (co-advise with Dr. David Geraghty)
- Varsha S. Rao (Qualcomm, co-advise with Prof. Bane Vasic)

PUBLICATIONS

Books and Book Chapters

- [B-1] I. B. Djordjevic, *Advanced Optical and Wireless Communications Systems*. Springer, to appear in 2017.
- [B-2] I. B. Djordjevic, *Quantum Biological Information Theory*. Springer, Nov. 2015.
- [B-3] M. Cvijetic, I. B. Djordjevic, *Advanced Optical Communications and Networks*. Artech House, 2013.
- [B-4] I. B. Djordjevic, *Quantum Information Processing and Quantum Error Correction: An Engineering Approach*. Elsevier/Academic Press, 2012.
- [B-5] I. Djordjevic, W. Ryan, and B. Vasic, *Coding for Optical Channels*. Springer, 2010.
- [B-6] W. Shieh and I. Djordjevic, *OFDM for Optical Communications*. Elsevier, Oct. 2009.
- [B-7] I. B. Djordjevic, "Advanced coding for fiber-optics communications systems," in *The Potential for Networks with Capacities Exceeding the Nonlinear Threshold*, (A. Ellis, Editor), Pan Stanford Publishing Pte. Ltd, UK, in print.
- [B-8] I. B. Djordjevic, Z. Qu, "Coded Orbital Angular Momentum Modulation and Multiplexing Enabling Ultra-High-Speed Free-Space Optical Transmission," in *Optical Wireless Communications - An Emerging Technology*, (M. Uysal, C. Capsoni, Z. Ghassemloo, A. Boucouvalas, E. G. Udvary, Editors), Springer, 2016.
- [B-9] I. B. Djordjevic, Z. Qu, "Coded Orbital-Angular-Momentum-Based Free-Space Optical Transmission," in *Wiley Encyclopedia of Electrical and Electronics Engineering*, Feb. 2016. (12 pages)
Available at: <http://onlinelibrary.wiley.com/doi/10.1002/047134608X.W8291/abstract>
- [B-10] I. B. Djordjevic, "Advanced coding for optical communication systems," in *Optical Fiber Telecommunications VI*, (I. Kaminow, T. Li and A. Willner, Editors), pp. 221-296, Elsevier/Academic Press, May 2013.
- [B-11] I. B. Djordjevic, "Coding and modulation techniques for optical wireless channels," in *Advanced Optical Wireless Communication Systems*, (S. Arnon, J. Barry, G. Karagiannidis, R. Schober and M. Uysal Eds.), Cambridge University Press, pages 11-53, May 2012.
- [B-12] I. B. Djordjevic, "Codes on graphs, coded modulation and compensation of nonlinear impairments by turbo equalization," in *Impact of Nonlinearities on Fiber Optic Communication*, (S. Kumar Ed.), Springer, pages 451-505, Mar. 2011.
- [B-13] I. B. Djordjevic, "Suppression of intrachannel nonlinearities in high-speed WDM systems," in *Advanced Technologies for High-Speed Optical Communications*, (L. Xu Ed.), pp. 247-277, Research Signpost, 2007.

Refereed Journal Papers

- [J-1] C. Lin, D. Zou, T. Liu, I. B. Djordjevic, "Capacity Achieving Nonbinary LDPC Coded Non-Uniform Shaping Modulation for Adaptive Optical Communications," *Optics Express*, vol. 24, no. 16, pp. 18095-18104, 2016.
[Available at: <https://www.osapublishing.org/oe/abstract.cfm?uri=oe-24-16-18095>]
- [J-2] Z. Qu, I. B. Djordjevic, "500Gb/s Free-Space Optical Transmission over Strong Atmospheric Turbulence Channels," *Optics Letters*, vol. 41, no. 14, pp. 3285-3288, July 15 2016.
[Available at: <https://www.osapublishing.org/ol/abstract.cfm?uri=ol-41-14-3285>]
- [J-3] T. Liu, C. Lin, I. B. Djordjevic, "Advanced GF(3²) nonbinary LDPC coded modulation with non-uniform 9-QAM outperforming star 8-QAM," *Optics Express*, vol. 24, no. 13, pp. 13866-13874, 2016.
[Available at: <https://www.osapublishing.org/oe/abstract.cfm?uri=oe-24-13-13866>]
- [J-4] X. Sun, I. B. Djordjevic, M. A. Neifeld, "Secret key rates and optimization of BB84 and decoy state protocols over time-varying free-space optical channels," *IEEE Photonics J.*, vol. 8, no. 3, pp. 7904713-1-7904713-13, June 2016, DOI: [10.1109/JPHOT.2016.2570000](https://doi.org/10.1109/JPHOT.2016.2570000).
- [J-5] T. Liu, I. B. Djordjevic, Z. Song, Y. Chen, R. Zhang, K. Zhang, W. Zhao, B. Li, "Broadband wavelength converters with flattop responses based on cascaded second-harmonic generation and difference frequency generation in Bessel-chirped gratings," *Optics Express*, vol. 24, no. 10, pp. 10946-10955, 16 May 2016.
[Available at: <https://www.osapublishing.org/oe/abstract.cfm?uri=oe-24-10-10946>]
- [J-6] I. B. Djordjevic, "On Advanced FEC and Coded Modulation for Ultra-High-Speed Optical Transmission," *IEEE Communications Surveys and Tutorials*, vol. PP, no. 99, pp. 1-31, 01 March 2016, DOI: [10.1109/COMST.2016.2536726](https://doi.org/10.1109/COMST.2016.2536726).
- [J-7] I. B. Djordjevic, "Integrated optics modules based proposal for quantum information processing, teleportation, QKD, and quantum error correction employing photon angular momentum," *IEEE Photonics Journal*, vol. 8, no. 1, pp. 6600212-1-6600212-12, Feb. 2016, DOI: [10.1109/JPHOT.2016.2522097](https://doi.org/10.1109/JPHOT.2016.2522097).

- [J-8] X. Sun, I. B. Djordjevic, "Physical-layer security in orbital angular momentum multiplexing free-space optical communications," *IEEE Photonics Journal*, vol. 8, no. 1, pp. 01110-1–01110-10, Feb. 2016, DOI: [10.1109/JPHOT.2016.2519279](https://doi.org/10.1109/JPHOT.2016.2519279)].
- [J-9] Y. Ren, Z. Wang, P. Liao, L. Li, G. Xie, H. Huang, Z. Zhao, Y. Yan, N. Ahmed, A. Willner, M. P. J. Lavery, N. Ashrafi, S. Ashrafi, R. Bock, M. Tur, I. B. Djordjevic, M. A. Neifeld, and A. E. Willner, "Experimental characterization of a 400 Gbit/s orbital angular momentum multiplexed free-space optical link over 120 meters," *Optics Letters*, vol. 41, no. 3, pp. 622-625, February 1 2016. [Available at: <https://www.osapublishing.org/ol/abstract.cfm?URI=ol-41-3-622>]
- [J-10] G. Tzimpragos, C. Kachris, I. B. Djordjevic, M. Cvijetic, D. Soudris, and I. Tomkos, "A Survey on FEC Codes for 100G and Beyond Optical Networks," *IEEE Communications Surveys and Tutorials*, vol. 18, no. 1, pp. 209-221, first quarter 2016. [DOI: [10.1109/COMST.2014.2361754](https://doi.org/10.1109/COMST.2014.2361754)]
- [J-11] I. B. Djordjevic, "Markov Chain-Like Quantum Biological Modeling of Mutations, Aging, and Evolution," *Life*, vol. 5, no. 3, pp. 1518-1538, 2015; doi:10.3390/life5031518. [Available at: <http://www.mdpi.com/2075-1729/5/3/1518>]
- [J-12] Y. Zhang, I. B. Djordjevic, M. Neifeld, "Weak-Coherent-State-Based Time-Frequency Quantum Key Distribution," *Journal of Modern Optics*, DOI: 10.1080/09500340.2015.1075616, 18 Aug 2015. (9 pages) [Available at: <http://dx.doi.org/10.1080/09500340.2015.1075616>]
- [J-13] T. Liu, I. B. Djordjevic, "Signal Constellation Design for Cross-Phase Modulation Dominated Channels," *IEEE Photonics Journal*, vol. 7, no. 4, Paper 0800108, Aug. 2015. (8 pages)
- [J-14] C. Lin, I. B. Djordjevic, D. Zou, "Achievable information rates calculation for optical OFDM transmission over few-mode fiber long-haul transmission systems," *Optics Express*, vol. 23, no. 13, pp. 16846-16856, 2015.
- [J-15] D. Zou, I. B. Djordjevic, "FPGA implementation of concatenated non-binary QC-LDPC codes for high-speed optical transport," *Optics Express*, vol. 23, no. 10, pp. 14501-14509, 18 May 2015.
- [J-16] I. B. Djordjevic, "Energy-efficient multinary signaling for ultra-high-speed optical transport," *SPIE Newsroom, Optoelectronics & Communications*, Paper 10.1117/2.1201502.005810, pp. 1-3, March 2015. [Available at: <http://spie.org/x112662.xml>]
- [J-17] I. B. Djordjevic, T. Liu, T. Wang, "Multinary Signaling based Coded Modulation for Ultra-High-Speed Optical Transport," *IEEE Photonics Journal*, vol. 7, no. 1, pp. 7900909-1 - 7900909-9, Feb. 2015.
- [J-18] T. Liu, I. B. Djordjevic, "Optimal Signal Constellation Design for Ultra-High-Speed Optical Transport in the Presence of Nonlinear Phase Noise," *Optics Express*, vol. 22, no. 26, pp. 32188-32198, 29 Dec 2014.
- [J-19] I. B. Djordjevic, A. Jovanovic, Z. H. Peric, T. Wang, "Multidimensional Optical Transport Based on Optimized Vector-Quantization-Inspired Signal Constellation Design," *IEEE Transactions on Communications*, vol. 62, no. 9, pp. 3262-3273, Sept. 2014.
- [J-20] I. B. Djordjevic, T. Wang, "Multiple component codes based generalized LDPC codes for high-speed optical transport," *Optics Express*, vol. 22, no. 14, pp. 16694-16705, 2014.
- [J-21] T. Liu, I. B. Djordjevic, "Multi-dimensional Optimal Signal Constellation Sets and Symbol Mappings for Block-Interleaved Coded-Modulation Enabling Ultra-High-Speed Optical Transport," *IEEE Photonics Journal*, vol. 6, no. 4, Paper 5500714, Aug. 2014. (14 pages)
- [J-22] C. Lin, I. B. Djordjevic, M. Cvijetic, and D. Zou, "Mode-Multiplexed Multi-Tb/s Superchannel Transmission with Advanced Multidimensional Signaling in the Presence of Fiber Nonlinearities," *IEEE Transactions on Communications*, vol. 62, no. 7, pp. 2507-2514, July 2014.
- [J-23] J. Zhang, I. B. Djordjevic, "Mapping Design of a Four-Dimensional 32-ary Signal Constellation over an AWGN Channel," *China Communications*, pp. 64-73, vol. 11, no. 7, July 2014.
- [J-24] I. B. Djordjevic, A. H. Saleh, F. Küppers, "Design of DPSS based fiber Bragg gratings and their application in all-optical encryption, OCDMA, optical steganography, and orthogonal-division multiplexing," *Optics Express*, vol. 22, no. 9, pp. 10882-10897, 5 May 2014.
- [J-25] A. Emsia, Q. T. Le, M. Malekizandi, D. Briggmann, I. B. Djordjevic, F. Kueppers, "WDM-TDM NG-PON Power Budget Extension by Utilizing SOA in the Remote Node," *IEEE Photonics Journal*, vol. 6, no. 2, Paper 7901310, Apr. 2014. (10 pages)
- [J-26] J. A. Anguita, J. Herreros, I. B. Djordjevic, "Coherent multi-mode OAM superpositions for multi-dimensional modulation," *IEEE Photonics Journal*, vol. 6, no. 2, Paper 7900811, Apr. 2014. (11 pages).
- [J-27] I. B. Djordjevic, M. Cvijetic, and C. Lin, "Multidimensional Signaling and Coding Enabling Multi-Tb/s Optical Transport and Networking," *IEEE Proc. Mag.*, vol. 31, no. 2, pp. 104-117, Mar. 2014.
- [J-28] I. B. Djordjevic, W. Shieh, X. Liu, M. Nazarathy, "Advanced Digital Signal Processing and Coding for Multi-Tb/s Optical Transport," *IEEE Sig. Proc. Mag.*, vol. 31, no. 2, pages 15 and 142, Mar. 2014. (From the Guest Editors.)
- [J-29] M.-F. Huang, A. Tanaka, E. Ip, Y.-K. Huang, D. Qian, Y. Zhang, S. Zhang, P. N. Ji, I. B. Djordjevic, T. Wang, Y. Aono, S. Murakami, T. Tajima, T. J. Xia, and G. A. Wellbrock, "Terabit/s Nyquist Superchannels in High Capacity Fiber Field Trials Using DP-16QAM and DP-8QAM Modulation for Regional and Long-Haul Applications," *IEEE/OSA J. Lightwave Technol.*, vol. 32, no. 4, pp. 776-782, Feb. 15, 2014.

- [J-30] J. He, R. A. Norwood, M. Brandt-Pearce, I. B. Djordjevic, M. Cvijetic, S. Subramaniam, R. Himmelhuber, C. Reynolds, P. Blanche, B. Lynn, N. Peyghambarian, "A survey on recent advances in optical communications," *Computers and Electrical Engineering*, vol. 40, no. 1, pp. 216-240, Jan. 2014.
- [J-31] I. B. Djordjevic, "Multidimensional QKD Based on Combined Orbital and Spin Angular Momenta of Photon," *IEEE Photonics Journal*, vol. 5, no. 6, Paper 7600112, Dec. 2013. (12 pages)
- [J-32] I. B. Djordjevic, "On the Irregular Nonbinary QC-LDPC-Coded Hybrid Multidimensional OSCD-Modulation Enabling Beyond 100 Tb/s Optical Transport," *IEEE/OSA J. Lightwave Technol.*, vol. 31, no. 16, pp. 2969-2975, Aug. 15, 2013.
- [J-33] I. B. Djordjevic, A. Jovanovic, M. Cvijetic, and Z. H. Peric, "Multidimensional Vector Quantization-based Signal Constellation Design Enabling beyond 1 Pb/s Serial Optical Transport Networks," *IEEE Photonics Journal*, vol. 5, no. 4, Paper 7901312, Aug. 2013. (12 pages)
- [J-34] D. Qian, M.-F. Huang, S. Zhang, Y. Zhang, Y.-K. Huang, F. Yaman, I. B. Djordjevic, and E. Mateo, "30Tb/s C- and L-bands bidirectional transmission over 10,181km with 121km span length," *Optics Express*, vol. 21, no. 12, pp. 14244-14250, 7 Jun 2013.
- [J-35] I. B. Djordjevic, T. Liu, and T. Wang, "On the adaptive software-defined LDPC-coded multidimensional spatial-MIMO multiband generalized OFDM enabling beyond 10 Tb/s optical transport," *IEEE Photonics Journal*, vol. 5, no. 1, Paper 7200207, Feb. 2013. (7 pages)
- [J-36] S. Zhang, Y. Zhang, M.-F. Huang, F. Yaman, E. Mateo, D. Qian, L. Xu, Y. Shao, and I. Djordjevic, "Transoceanic Transmission of 40x117.6 Gb/s PDM-OFDM-16QAM over Hybrid Large-Core/Ultra Low-Loss Fiber," *IEEE/OSA J. Lightwave Technol.*, vol. 31, no. 4, pp. 498-505, February 15, 2013. **(Invited paper.)**
- [J-37] C. Lin, I. B. Djordjevic, and M. Cvijetic, "Quantum Few-Mode Fiber Communications based on the Orbital Angular Momentum," *IEEE Photon. Technol. Lett.*, vol. 25, no. 1, pp. 3-6, January 1, 2013.
- [J-38] I. B. Djordjevic, "Quantum Biological Channel Modeling and Capacity Calculation," *Life*, vol. 2, no. 4, pp. 377-391, 2012.
- [J-39] C. Lin, I. B. Djordjevic, D. Zou, M. Arabaci and M. Cvijetic, "Non-binary LDPC coded mode-multiplexed coherent optical OFDM 1.28 Tbit/s 16-QAM signal transmission over 2000-km of few-mode fibers with mode dependent loss," *IEEE Photonics Journal*, vol. 4, no. 5, pp. 1922- 1929, Oct. 2012.
- [J-40] M. Arabaci, I. B. Djordjevic, L. Xu, and T. Wang, "Nonbinary LDPC-Coded Modulation for Rate-Adaptive Optical Fiber Communication without Bandwidth Expansion," *IEEE Photon. Technol. Lett.*, vol. 23, no. 18, pp. 1280-1282, Sept. 15, 2012.
- [J-41] I. B. Djordjevic, J. Anguita, and B. Vasic, "Error-Correction Coded Orbital-Angular-Momentum Modulation for FSO Channels Affected by Turbulence," *IEEE/OSA J. Lightw. Technol.*, vol. 30, no. 17, pp. 2846-2852, September 1, 2012.
- [J-42] G. T. Djordjevic, I. B. Djordjevic, and G. K. Karagiannidis, "Partially coherent EGC reception of uncoded and LDPC-coded signals over generalized fading channels," *Wireless Personal Communications*, vol. 66, no.1, pp. 25-39, 2012. (Url: <http://dx.doi.org/10.1007/s11277-011-0323-6>)
- [J-43] T. Liu and I. B. Djordjevic, "On the optimum signal constellation design for high-speed optical transport networks," *Opt. Express* vol. 20, no. 18, pp. 20396-20406, 27 August 2012.
- [J-44] I. B. Djordjevic, T. Liu, L. Xu, and T. Wang, "On the Multidimensional Signal Constellation Design for Few-Mode Fiber based High-Speed Optical Transmission," *IEEE Photonics Journal*, vol. 4, no. 5, pp. 1325 - 1332, 2012.
- [J-45] Y. Zhang, I. B. Djordjevic, and X. Gao, "On the quantum channel capacity for orbital angular momentum (OAM) based free-space optical communications," *Optics Letters*, vol. 37, no. 15, pp. 3267-3269, August 1, 2012.
- [J-46] I. B. Djordjevic, "Spatial-Domain-Based Hybrid Multidimensional Coded-Modulation Schemes Enabling Multi-Tb/s Optical Transport," *IEEE/OSA J. Lightw. Technol.*, vol. 30, no. 14, pp. 2315-2328, July 15, 2012. **(Invited Paper.)**
- [J-47] M. Arabaci, I. B. Djordjevic, L. Xu, and T. Wang, "Nonbinary LDPC-Coded Modulation for High-Speed Optical Fiber Communication without Bandwidth Expansion," *IEEE Photonics Journal*, vol. 4, no. 3, pp. 728-734, June 2012.
- [J-48] Y. Zhang, M. Arabaci, I. B. Djordjevic, "Evaluation of four-dimensional nonbinary LDPC-coded modulation for next-generation long-haul optical transport networks," *Optics Express*, vol. 20, no. 8, pp. 9296-9301, 04/09/2012.
- [J-49] M. Cvijetic, I. B. Djordjevic, N. Cvijetic, "Dynamic Multidimensional Optical Networking Based on Spatial and Spectral Processing," *Optics Express*, vol. 20, no. 8, pp. 9144-9150, 04/09/2012.
- [J-50] I. B. Djordjevic, L. Xu, and T. Wang, "Statistical physics inspired energy-efficient coded-modulation for optical communications," *Optics Letters*, vol. 37, no. 8, pp. 1340-1342, 04/15/2012.
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