

2012 10th International Conference on Optical Internet (COIN 2012)

**Kanagawa, Japan
29 – 31 May 2012**



**IEEE Catalog Number: CFP1296E-PRT
ISBN: 978-1-4673-1654-5**

Program

TuA: Plenary Part I - Opening / COIN 10th Anniversary Commemoration Keynotes

The K computer: 10 Peta-FLOPS supercomputer

Motoyoshi Kurokawa (RIKEN, Japan)

pg. 1

COIN and Optical Internet

Minho Kang (Information and Communications University, Korea)

pg. 2

(Not reserved)

(Conference time)

(Not reserved)

TuB: Plenary Part II - COIN Award Ceremony / Commemorative Keynote

Optical Communication Technology: Opportunities and Challenges

Ji Yuefeng (Beijing University of Posts and Telecommunications, P.R. China)

pg. 3

LUNCH BREAK

TuC: Advanced Photonic Signal Processing

Ultrahigh Speed Switching with Chalcogenide Waveguides

Mark D Pelusi (Centre for Ultrahigh bandwidth Devices for Optical Systems (CUDOS), Australia); Benjamin Eggleton (University of Physics, Australia)

Optical Fiber-based Nonlinear Signal Processing for Ultra-wideband Radio Signals

Ju Han Lee (University of Seoul, Korea); Junsu Lee (University of Seoul, Korea); You Min Chang (University of Seoul, Korea)

pp. 4-5

Experimental Study of a Parametric Optical Path Conditioner with Functions of Tunable Dispersion Compensation and Signal Regeneration

Junya Kurumida (National Institute of Advanced Industrial Science and Technology, Japan); Mingyi Gao (National Institute of Advanced Industrial Science and Technology, Japan); Ken Tanizawa (National Institute of Advanced Industrial Science and Technology, Japan); Shu Namiki (National Institute of Advanced Industrial Science and Technology, Japan)

TuG: Network Virtualization I

Global-scale Experiment on Multi-domain Software Defined Transport Network

Akinori Isogai (NTT, Japan); Aki Fukuda (NTT, Japan); Akeo Masuda (NTT, Japan); Atsushi Hiramatsu (NTT Labs., Japan)

pp. 8-9

An Acceleration System for Long Distance Live Migration of Virtual Machine

Feng Xiujie (Shanghai Jiao Tong University, P.R. China); Luo Xuan (Shanghai Jiao Tong University, P.R. China); Yaohui Jin (Shanghai Jiaotong University, P.R. China)

pp. 10-11

Performance Improvement of Flow Switching with Automatic Maintenance of Hash Table Assisted by Wildcard Flow Entries

Nobutaka Matsumoto (KDDI R&D Laboratories Inc., Japan); Michiaki Hayashi (KDDI R&D Laboratories Inc., Japan)

pp. 12-13

(Conference time)

TuH: Optical Networking I

Experimental Evaluation of Dynamic Restoration in GMPLS-based WSON

Hitomi Yoshimura (Mitsubishi Electric, Japan); Sota Yoshida (Mitsubishi Electric Corporation, Japan); Eiichi Horiuchi (Mitsubishi Electric Corporation, Japan); Shoichiro Seno (Tokushima Bunri University, Japan)

pp. 14-15

Priority-based Defragmentation Scheme in Spectrum-Efficient Optical Networks

Jie Zhang (Beijing University of Posts and Telecommunications, P.R. China); Yongli Zhao (Beijing University of Posts and Telecommunications, P.R. China); Xiaosong Yu (Beijing University of Posts and Telecommunications, P.R. China); Jie Zhao (Beijing University of Posts and Telecommunications, P.R. China)

pp. 16-17

Signal Format Independent and Degradation-Free Optical Path Identifier Based on SOP Modulation for Multi-Degree CDC-ROADM

Hitoshi Takeshita (NEC Corporation & System Platform Research Laboratories, Japan); Tomoyuki Hino (NEC Corporation, Japan); Shigeru Nakamura (NEC Corporation, Japan); Akio Tajima (NEC Corporation, Japan); Junya Kurumida (National Institute of Advanced Industrial Science and Technology, Japan); Shu Namiki (National Institute of Advanced Industrial Science and Technology, Japan)

pp. 18-19

A Mathematical Model for Wavelength Assignment in Multi-Carrier Distributed Optical Mesh Networks

Bonar Sitorus (University of Electro Communication, Japan); Nattapong Kitsuan (The University of Electro-communications, Japan); Eiji Oki (The University of Electro-Communications, Japan)

pp. 20-21

TuD: Advanced Photonic Devices

Polymer Optical Waveguide for Ultra High-Density Interconnection

Tetsuya Mori (Sumitomo Bakelite Co., Ltd., Japan); Kimio Moriya (Sumitomo Bakelite Co., Ltd., Japan); Katsuma Kitazoe (Sumitomo Bakelite Co., Ltd., Japan); Shotaro Takayama (Sumitomo Bakelite Co., Ltd., Japan); Shinsuke Terada (Sumitomo Bakelite Co., Ltd., Japan); Makoto Fujiwara (Sumitomo Bakelite Co., Ltd., Japan); Keizo Takahama (Sumitomo Bakelite Co., Ltd., Japan); Koji Choki (Sumitomo Bakelite Co., Ltd., Japan); Takaaki Ishigure (Keio University & Faculty of Science and Technology, Japan)

pp. 22-23

InGaAsP/InP MQW FP Laser and Silicon Platform Integration by Direct Bonding

Akio Higo (RCAST, The University of Tokyo, Japan); Ling-Han LI (RCAST, The University of Tokyo, Japan); Eiji Higurashi (University of Tokyo, Japan); Masakazu Sugiyama (University of Tokyo, Japan); Yoshiaki Nakano (University of Tokyo, Japan)

pp. 24-25

High-Speed Directly-Modulated Lasers Employing Photon-Photon Resonance

Mihail Dumitrescu (Tampere University of Technology, Finland); Antti Laakso (Tampere University of Technology, Finland); Jukka Viheriälä (Tampere University of Technology, Finland); Topi Uusitalo (Tampere University of Technology, Finland); Martin Kamp (Universität Würzburg, Germany); Petteri Uusimaa (Modulight Inc., Finland)

pp. 26-27

(Conference / Poster time)

TuP: Poster Session

Photonic Services and Their Applications

Josef Vojtech (CESNET, a.i.o., Czech Republic); Vladimir Smotlacha (CESNET, Czech Republic); Pavel Skoda (CESNET, Czech Republic)

Network Coding Based Cost-Efficient 1+1 Protection in Scenarios with Two Sources and Different Destinations for Instantaneous Recovery

Abu Hena Al Muktaadir (The University of Electro-Communications, Japan); Eiji Oki (The University of Electro-Communications, Japan)

A Load-Balanced Routing Scheme Based on Backup Route of IP Fast Reroute

Yutaka Arai (The University of Electro-Communications, Japan); Eiji Oki (The University of Electro-Communications, Japan)

A Proposal of Network Architecture Based on "information Gravity"

Shunsuke Kikuchi (National Institute of Information and Communications Technology, Japan); Hidenori Nakazato (Waseda University, Japan)

Network Configuration Method by Ameba Nodes for Simple IP Routing

Kenji Tada (Osaka Prefecture University, Japan); Hideki Tode (Osaka Prefecture University, Japan)

An Efficient and Reliable Optical Multicast Scheme Based on Network Coding and Erasure Coding

Yongmei Sun (Beijing University of Posts and Telecommunications, P.R. China); Menghe Ye (Beijing University of Posts and Telecommunications, P.R. China); Ji Yuefeng (Beijing University of Posts and Telecommunications, P.R. China)

Optimum Performance for Optical Packet Switch Based on Dynamic

Nattapong Kitsuan (The University of Electro-communications, Japan); Dwina Fitriyandini Siswanto (The University of Electro-Communications, Japan); Eiji Oki (The University of Electro-Communications, Japan)

Optimum Threshold Power Decision Algorithm for Minimized Initialization Time and Maximized Stabilization in a WDM-PON

Eui-Suk Jung (ETRI, Korea); Eun-Gu Lee (ETRI, Korea); Sil-Gu Mun (ETRI, Korea); Jong Hyun Lee (ETRI, Korea); Sang Soo Lee (ETRI, Korea); Han Sang-Kook (Yonsei university, Seoul, Korea)

Gradual MPPM: A Method to Improve Bandwidth Utilization Efficiency in Optical MPPM

Hossam Selmy (Egypt-Japan University for Science and Technology (EJUST), Egypt); Hossam Shalaby (Alexandria University, Egypt); Zen Kawasaki (Egypt-Japan University for Science and Technology (EJUST), Egypt)

Distortion Mitigation Using mm-Wave Generated by Silicon Microring Modulator in LR-ROF

Chi Wai Chow (National Chiao Tung University, Taiwan); Chien-Hung Yeh (Industrial Technology Research Institute, Taiwan); Stanley Lo (The Chinese University of Hong Kong, Hong Kong); Hon Tsang (The Chinese University of Hong Kong, Hong Kong)

Investigation on the Max Number of Inputs of an NAND Gate Using Injection-locking Properties of a Single Mode FP-LD

Hoai Tran Quoc (Korea Advanced Institute of Science and Technology (KAIST), Korea); Bikash Nakarmi (KAIST, Korea); Yong Hyub Won (KAIST-Korea Advanced Institute of Science and Technology, Korea)

TCP/IP Transport Over Optical Packet and Circuit Integrated Network in Field Environment

Hideaki Furukawa (NICT, Japan); Naoya Wada (NICT, Japan); Takaya Miyazawa (National Institute of Information and Communications Technology (NiCT), Japan); Yoshinari Awaji (National Institute of Information and Communications Technology (NICT), Japan); Satoshi Shinada (National Institute of Information and

Communications Technology, Japan); Hiroaki Harai (National Institute of Information and Communications Technology, Japan)

Coffee Break

TuE: Optical Transport Systems and Technologies I

Reduced-Complexity Nonlinear Compensation Based on Equivalent-Span Digital Backpropagation

Ezra Ip (NEC Labs America, USA)
pp. 28-29

100G DWDM Transport Systems: Driving the Technologies and Deployment

Masahito Tomizawa (NTT, Japan)
pp. 30-31

Inter-operability Demonstration for 100G DP-QPSK OIF MSA Based LH Optical Module

Shigeki Aisawa (NTT Network Innovation Laboratories, Japan); Takashi Ono (NTT Network Innovation Laboratories, Japan); Suzuki (NTT, Japan); Masahito Tomizawa (NTT, Japan)
pp. 32-33

A Fast and Accurate Method to Estimate XPM Impact Under PMD

Yinwen Cao (Fujitsu R&D Center (FRDC), P.R. China); Weizhen Yan (Fujitsu Research & Development Center Co., LTD., P.R. China); Zhenning Tao (Fujitsu R&D Center Ltd., P.R. China); Lei Li (Fujitsu Research & Development Center, P.R. China); Takeshi Hoshida (Fujitsu Laboratories Limited, Japan); Jens C. Rasmussen (Fujitsu Laboratories Limited, Japan)
pp. 34-35

TuJ: Switching and Routing

Instantaneous Recovery Scheme with Optimal Traffic Splitting Using Network Coding

Agostinho Antonio Jose (The University of Electro-Communications, Japan); Abu Hena Al Muktadir (The University of Electro-Communications, Japan); Eiji Oki (The University of Electro-Communications, Japan)
pp. 36-37

Performance Evaluation of Non-Split S-OSPF with Hose Model

Shunichi Tsunoda (The University of Electro-Communications, Japan); Abu Hena Al Muktadir (The University of Electro-Communications, Japan); Eiji Oki (The University of Electro-Communications, Japan)
pp. 38-39

The Impact of Routing Cache on High-Performance Switches

Michihiro Koibuchi (National Institute of Informatics, Japan); Shinichi Ishida (Keio University, Japan); Hiroaki Nishi (Keio University, Japan)
pp. 40-41

(Conference time)

TuK: Technologies of Highly efficient optical access networks

Method to Improve the Spectral Efficiency of Heterogeneous Optical Wired and Wireless Long-reach Access Network

Chi Wai Chow (National Chiao Tung University, Taiwan); Chien-Hung Yeh (Industrial Technology Research Institute, Taiwan); Yen-His Lin (National Chiao Tung University, Taiwan)

pp. 42-43

Energy-efficient PON System with a 1Gbps/10Gbps Independent and Adaptive Link Rate Control

Yusuke Takahashi (University of Electro-Communications, Japan); Hiroaki Harai (National Institute of Information and Communications Technology, Japan)

pp. 44-45

A Study on Power Saving of Layer 2 Switch for PON System

Yusuke Sakagami (Ofuna, Kamakura, Kanagawa & Mitsubishi Electric Corporation, Japan); Ryusuke Kawate (Mitsubishi Electric Corp, Japan); Eiichi Horiuchi (Mitsubishi Electric Corporation, Japan); Tetsuya Yokotani (Mitsubishi Electric Corp., Japan)

pp. 46-47

TuF: Optical Transport Systems and Technologies II

Real-Time Optical OFDM Experiments

Qi Yang (FiberHome, P.R. China); Tao Zeng (FiberHome, P.R. China); William Shieh (The University of Melbourne, Australia)

pp. 48-49

Effects of LN Modulator Chirp on Performance of Digital Coherent Optical Transmission System

Hyeon Choi (KDDI R&D Laboratories, Japan); Takehiro Tsuritani (KDDI R&D Laboratories, Inc., Japan); Itsuro Morita (KDDI R&D Laboratories, Japan)

pp. 50-51

Suppression of Polarization Dependence of Gain in Distributed Raman Amplifier System with Compact Pump Depolarizer

Hiroto Kawakami (NTT Corporation, Japan); Kunihiko Mori (NTT Corporation, Japan); Shuto Yamamoto (NTT, Japan); Yutaka Miyamoto (NTT Network Innovation Laboratories, Japan)

pp. 52-53

(Poster time)

TuP: Poster Session (cont'd)

(Poster time)

Banquet

WA: Network Virtualization II

Virtualization

Akihiro Nakao (University of Tokyo, Japan)

Protection Switching in Packet Transport Networks

Jeong-dong Ryoo (ETRI, Korea); Kwang-koog Lee (Korea Advanced Institute of Science and Technology & KAIST, Korea); Taesik Cheung (Electronics and Telecommunications Research Institute, Korea); Beomsoon Joo (Electronics and Telecommunications Research Institute Korea, Korea)

pp. 54-56

OpenFlow-based Reliable Service Provisioning and Dynamic Differentiation for Optical Networks

Lei Liu (KDDI R&D Laboratories Inc, Japan); Takehiro Tsuritani (KDDI R&D Laboratories, Inc., Japan); Itsuro Morita (KDDI R&D Laboratories, Japan)

pp. 57-58

Wavelength Defragmentation Design for Multi-fiber WDM Networks

Akihiro Kadohata (NTT & Network Innovation Laboratories, Japan); Akira Hirano (NTT, Japan); Fumikazu Inuzuka (NTT Corporation, Japan); Atsushi Watanabe (NTT, Japan); Osamu Ishida (NTT, Japan)

pp. 59-60

(Reserved for iPOP preparation)

(Conference time)

(Not reserved)

WB: Optical Networking II

Virtualization in Optical Networks: From Elastic Networking Level to Sliceable Equipment Level

Masahiko Jinno (NTT Network Innovation Laboratories, Japan)

pp. 61-62

Routing and Grooming in Multilayer Optical Networks

Keping Long (University of Science and Technology Beijing, P.R. China)

Comparative Study of Optical Networks with Grid Flexibility and Traffic Grooming

Takafumi Tanaka (NTT Corporation, Japan); Akira Hirano (NTT, Japan); Masahiko Jinno (NTT Network Innovation Laboratories, Japan)

pp. 63-64

Prim's Algorithm Based P2MP Energy-saving Routing Design for MiDORI

Akiko Hirao (Keio University, Japan); Yuki Nomura (Keio University, Japan); Haruka Yonezu (Keio University, Japan); Hidetoshi Takeshita (Keio University & Graduate School of Science and Technology, Japan); Daisuke Ishii (Keio University, Japan); Satoru Okamoto (Keio University, Japan); Naoaki Yamanaka (Keio University, Japan)

pp. 65-66

LUNCH BREAK

WC: Applications on Overlay Networks

Application and Technical Issues on Internet of Things

Tetsuya Yokotani (Mitsubishi Electric Corp., Japan)

pp. 67-68

Positive Localization for a P2P Content Distribution System on All Optical Network

Yuya Narikawa (Osaka Prefecture University, Japan); Yosuke Tanigawa (Osaka Prefecture University, Japan); Hideki Tode (Osaka Prefecture University, Japan)

pp. 69-70

Inter-Datacenter Elastic Key-value Storage

Hikaru Horie (Keio University, Japan); Masato Asahara (NEC Corporation, Japan); Hiroshi Yamada (Keio University, Japan); Kenji Kono (Keio University, Japan)

pp. 71-72

(Conference time)

WD: Data Center Management

Algorithms for Dynamic Capacity Provisioning

Lachlan L. H. Andrew (Swinburne University of Technology, Australia); Minghong Lin (California Institute of Technology, USA); Adam C Wierman (California Institute of Technology, USA); Zhenhua Liu (California Institute of Technology, USA)

pp. 73-74

Designing Inter-Cloud System Architecture

Kunio Hato (NTT, Japan); Hu Bo (NTT, Japan); Yuuichi Murata (NTT, Japan); Junichi Murayama (NTT Corporation, Japan)

pp. 75-76

Network Management for Higher-Bandwidth-Use Efficiency by Optimizing Paths in Virtual Networks

Hitoshi Yabusaki (Hitachi Ltd., Japan); Daisuke Matsubara (Hitachi, Ltd, Japan)

pp. 77-78

Coffee Break

WE: Technologies for robust and resilient optical Access Networks

High-Speed and Long-Reach WDM-PON Using Partial Response Equalization

An V Tran (University of Melbourne & National ICT Australia, Australia); Qi Guo (University of Melbourne, Australia)
pp. 79-80

ONU Tester for Diagnosis of TDMA-PON Using Multi-Point Control Protocol Messages

Masayuki Oishi (KDDI R&D Laboratories Inc., Japan); Yukio Horiuchi (KDDI R&D Laboratories, Inc., Japan); Kosuke Nishimura (KDDI R&D Laboratories Inc. & Optical Access Network Laboratory, Japan)
pp. 81-82

Self-Wavelength-Initialization Method Using a Dedicated Light Path of WDM-PON

Eun-Gu Lee (ETRI, Korea); Sil-Gu Mun (ETRI, Korea); Eui-Suk Jung (ETRI, Korea); Jong Hyun Lee (ETRI, Korea); Sang Soo Lee (ETRI, Korea)
pp. 83-84

(Conference time)

WF: WDM and TDM Passive Optical Networks

A loop-Back WDM-PON Technology Based on RSOA Using Wavelength Reuse Scheme and It's Commercialization Status in Korea

Seung-Hyun Cho (ETRI, Korea); Han Hyub Lee (Electronics and Telecommunications Research Institute, Korea); Jie Hyun Lee (ETRI, Korea); Jong Hyun Lee (ETRI, Korea); Seung Il Myong (ETRI, Japan); Sang Soo Lee (ETRI, Korea)
pp. 85-86

Adaptive Bandwidth Aggregation Mechanisms Using a Shared Wavelength for Energy-Efficient WDM/TDM-PON

Masashi Tadokoro (NTT, Japan); Ryogo Kubo (Keio University, Japan); Susumu Nishihara (NTT Access Network Service Systems Laboratories, Japan); Takashi Yamada (NTT, Japan); Hirotaka Nakamura (NTT Access Network Service Systems Laboratories, Japan)
pp. 87-88

Optical Amplifier Technologies for High Power Budget PON Systems

Jun Sugawa (Hitachi, Ltd., Japan); Hiroki Ikeda (Hitachi, Ltd., Japan); Shougo Matsuda (Hitachi, Ltd., Japan); Munetoshi Suzuki (Hitachi, Ltd., Japan)
pp. 89-90

Opening Remarks

(Reserved for iPOP)

(Conference time)

(Not reserved)

COIN Summary & Award Ceremony

ThA: COIN / iPOP Joint Plenary (cont'd)

Networking and Cloud Computing Issues to Handle

Tomonori Aoyama (Keio University, Japan)

Towards Cloud-Ready Transport Networks

Luis Miguel Contreras (Telefonica I+D, Spain); Victor López (Telefonica I+D, Spain); Oscar González de Dios (Telefonica I+D, Spain); Juan P. Fernández-Palacios (Telefónica I+D, Spain)

pp. 91-92

LUNCH BREAK

(iPOP 2012)

ThC: COIN2012 / EXAT workshop I

Recent Progress in Multi-Core Fibers

Katsuhiro Takenaga (Fujikura Ltd., Japan)

Multi-Core Amplifiers for Space-Division Multiplexing

Yu Mimura (Furukawa Electric Co., Ltd., Japan)

DC-DQPSK Based 112 Gb/s Optical Transceiver for Metro Networks

Hwan Seok Chung (ETRI, Korea)

Mode Division Multiplexing Transmission with Parallel Waveguide

Nobutomo Hanzawa (NTT, Japan)

SDM in Transmitters and Receivers

Tetsuya Kawanishi (National Institute of Information and Communications Technology, Japan)

Break

ThD: COIN2012 / EXAT workshop - Part II

Panel Discussion

Wrap Up