OFC/NFOEC'11 Review

Optical Networking and Impairments, Routing and Path Computation

Prepared by Chaitanya S. K. Vadrevu

Sessions

- OWAA Protection and Restoration
- NThC Restoration and Network Design
- NTUA Control and Packet Integration
- NWA 100G Technology & Applications
- OThI Routing and Path Computation
- OThAA Optical Networking and Impairments

Sessions

- OWAA Protection and Restoration
- NThC Restoration and Network Design
- NTUA Control and Packet Integration
- NWA 100G Technology & Applications
- OThI Routing and Path Computation
- OThAA Optical Networking and Impairments

Code	Title	Author/Affiliation	Topic
OThAA1	Optical Networking Trends and Evolution	Christoph Glinger ***ADVA, Germany***	Areas to focus in 100G transmission systems such as channel coding and modulation, optical layer technologies, protocols and multi-layer integration etc.
OThAA2	Wavelength Aware Translucent Network Design	G. Rizzelli, F. Musumeci, M. Tornatore, G. Maier, A. Pattavina ***Politecnico di Milano, Milan***	Routing approaches based on impairments of wavelengths. Wavelengths are classified into 3 groups, and connectivity graph approach is used for routing

Code	Title	Author/Affiliation	Topic
OThAA3	Experimental Study on the Impact of Regenerator Placement Strategies when Dynamically Provisioning in Translucent GMPLS WSON Networks	R. Martinez, R. Casellas, R. Munoz, B. Garcia-Manrubia, P. Pavon-Marino, M. Klinkowski, D.Careglio ***CTCC, UPC Spain, UPCT Spain, NIT Poland***	Study the performance of different regenerator placement algorithms such as centered node first, nodal degree first etc. using a common regenerator allocation algorithm
OThAA4	Efficient Regenerator Placement and Wavelength Assignment in Optical Networks	D. Shen, G. Li, D. Wang, C-K. Chan, R. Doverspike ***AT&T labs, USA, CUHK, Hong Kong***	Integrated approach for regenerator placement and wavelength assignment maintaining wavelength continuity

Code	Title	Author/Affiliation	Topic
OThAA5	Impairment -aware PCE in multi-bit rate 10-100 Gb/s WSON with experimental demonstration	N. Sambo, G. Meloni, F. Paolucci, M. Secondini, L. Poti, F. Cugini, P. Castoldi ***Scuola Superiore Sant'Anna, Italy*** ***CIST, Italy***	Two PCE based approaches providing separate or joint computation of impairments and RWA
OThAA6	Impairment Aware RWA based on a K-Shuffle Edge-Disjoint Path Solution (IA-KS-EDP)	C. Taunk, S. Bidkar, C. V. Saradhi, A. Gumaste ***IIT Bombay,*** ***Create-Net Italy***	Takes into account OSNR, chromatic dispersion, polarization mode dispersion etc. in assigning wavelengths and routing in multi-line rates

Trends

- Regenerator placement
- Minimization of Regeneration, OEO
- Routing considering impairments such as chromatic dispersion, polarization mode dispersion, OSNR etc.

Sessions

- OWAA Protection and Restoration
- NThC Restoration and Network Design
- NTUA Control and Packet Integration
- NWA 100G Technology & Applications
- NThI Routing and Path Computation
- OThAA Optical Networking and Impairments

Code	Title	Author/Affiliation	Topic
OThI2	Experimenting with Immediate Re-Routing on a Information-Diffusion-Based Routing Test-Bed	Y. Chen, N. Hua, X. Zheng, Chunming Qiao ***Tsinghua Univ.,*** ***SUNY Buffalo***	An extension to RSVP-TE signaling to enable re-routing at intermediate instead of crank back mechanism to source node to re-route.

Code	Title	Author/Affiliation	Topic
OThI3	GMPLS/PCE/OBST Architectures for Guaranteed Sub-Wavelength Mesh Metro Network Services	J. Triay, G. S. Zervas, C. Cervello-Pastor, D. Simeonidou ***Univ. of Essex, UK UPC Spain***	Recommend OBST/GMPLS based architectures for provisioning sub-wavelength connections without any contention, inter-domain routing
OThI4	Benefits of limited context awareness in Stateless PCE	O. Gonzalez de Dios, F. J. Jimenez Chico, F. Munoz del Nuevo ***Telefonica I+D***	Simulation studies to quantify the benefit of limited statefulness information than stateless PCE. Results show there is 30% improvement in blocking ratio

Code	Title	Author/Affiliation	Topic
OThI5	Lab Trial of Multi-Domain Path Computation in GMPLS Controlled WSON Using a Hierarchical PCE	Ramon Casellas, Raul Munoz, Ricardo Martinez ***CTTC Spain***	A Hierarchical PCE based architecture to compute multi-domain routes. Two levels Domain selection, Segment computation
OThI6	An Optimal Model for LSP Bundle Provisioning in PCE-based WDM Networks	J. Ahmed, C. Cavdar, P. Monti, L. Wosinska ***KTH Sweden***	First paper to use ILP for LSP bundle assignment in PCE based networks. They show that their ILP is practical and has better performance to existing heuristics

Code	Title	Author/Affiliation	Topic
OThI7	Heuristic Resource Provisioning for Dynamic Wavelength Services with Access Port Constraints	Xiaolan J. Zhang, Steven S. Lumetta, Angela L. Chiu ***UIUC, AT&T Labs, USA***	A greedy heurestic that assigns on-demand wavelength requests in a ROADM network with transponder count constraints
OThI8	Provisioning Schemes Accounting for ROADM/Add/Drop Constraints in GMPLS-based WSON	N. Sambo, F. Cugini, G. Bottari, P. Iovanna, P. Castoldi ***SSSA Italy*** ***CNIT Italy***	Propose GMPLS extensions to advertize ROADM structure, ROADM resources such as access ports and verify their approach through simulations

OThI1	Open Lambda Assignment and Routing Problem – Bandwidth Multiplier for Metro and Access Networks	A. Gumaste, K. Pulverer, A. Texiera, S. J. Wey, A. Nouroozifar ***Nokia Siemens, USA*** ***IIT Bombay***	

Trends

- PCE based network path computation, LSP bundling
- Heuristic for on-demand provisioning
- Port count/ROAD network based provisioning schemes
- RSVP-TE, GMPLS extensions to enable efficient re-routing, inter-domain routing schemes