

2007 HIGH-SPEED NETWORKS WORKSHOP

**ANCHORAGE, ALASKA, USA
11 MAY 2007**



IEEE Catalog Number: 07EX2014
ISBN: 1-4244-1580-2

WORKSHOP PAPERS

Session 1: Architectures for E-Science and Grid Networking

Chair: Nagi Rao

A Network Architecture for Large-scale Science	1
Sergey Gorinsky, Christoph Jechlitschek, Nageswara S. V. Rao	
TCP Variants and Transfer Time Predictability in Very High Speed Networks	6
Romaric Guillier, Sébastien Soudan, Pascale Vicat-Blanc Primet	
A Network Layer for Teleoperations in High Speed Environments	11
B. L. LaMarche, D. F. Hopkins, C. O. Hughes, T. McKenna, E. W. Fulp	
Distributed Computing Task Assignment and Lighpath Establishment (TALE).....	16
Xin Liu, Wei Wei, Xiang Yu, Chunming Qiao, Ting Wang	

Session 2: Optical Network Algorithms

Chair: Laurent Lefevre

Algorithms for Intermediate Waveband Switching in Optical WDM Mesh Networks	21
Ajay Todimala, Byrav Ramamurthy	
Multi-domain Multi-granularity Service Provisioning in Hybrid	
DWDM/SONET Networks	26
Q. Liu, N. Ghani, N. S. V. Rao, T. Lehman	
Time-zone-aware Traffic Grooming in IP-over-WDM Networks	31
Çiçek Çavdar, Ayşegül Gençata, Smita Rai, Biswanath Mukherjee	
Segment-based Robust Fast Optical Reservation Protocol	36
Huan Xu, Oliver Yu, Leping Yin, Ming Liao	

Session 3: End-System Design & Advanced Transport Protocols

Chair: Tom Lehman

Measurements on Hybrid Dedicated Bandwidth Connections	41
Nageswara S. V. Rao, William R Wing, Qishi Wu, Nasir Ghani, Qing Liu, Tom Lehman, Chin P. Guok, Eli Dart	
Fairness Issues When Transferring Large Volumes of Data on High Speed Networks	
with Router-assisted Transport Protocols	46
Dino M. Lopez Pacheco, Laurent Lefevre, Congduc Pham	
Towards Terabit/s Systems: Performance Evaluation of Multi-rail Systems	51
Venkatram Vishwanath, Takashi Shimizu, Makoto Takizawa, Kazuaki Obana, Jason Leigh	
Harnessing Multicore Processors for High-speed Secure Transfer	56
John Bresnahan, Rajkumar Kettimuthu, Mike Link, Ian Foster	

Session 4: High Speed Network and Node Design

Chair: Sergey Gorinsky

On the Capacity Limits of Advanced Channel Reservation Architectures	60
Reuven Cohen, Niloofar Fazlollahi, David Starobinski	
Packet Scheduling in Optical FIFO Buffers.....	63
Neda Beheshti, Yashar Ganjali	
Control Plane Architecture and Design Considerations for Multi-service, Multi-layer,	
Multi-domain Hybrid Networks	67
Tom Lehman, Xi Yang, Chin P. Guok, Nageswara S. V. Rao, Andy Lake, John Vollbrecht, Nasir Ghami	
A Design Principle for Future High-speed Networks.....	72
Kejie Lu, Tao Zhang, Shengli Fu, Yi Qian, Ashwin Gumaste, S.-Q. Zheng	
Author Index	77