2017 9th International Workshop
on Resilient Networks Design and
Modeling (RNDM 2017)

Alghero, Italy
4-6 September 2017
Technical Session I – Theory of Network Resilience

An Optimization Model for Affine Flow Thinning – a Traffic Protection Mechanism for FSO Networks – Invited
Michał Pióro, Ilya Kalesnikau, Michael Poss

Building Uniformly Most-Reliable Networks by Iterative Augmentation
Pablo Gabriel Romero

Column Generation Technique for Optimization of Survivable Flex-grid SDM networks
Roza Goscien, Piotr Lechowicz

Technical Session II – Methods for Measurement, Evaluation, or Validation of Resilience

Network Robustness Simulator: a Case Study on Epidemic Models – Invited
Jose Luis Marzo, Sergio Gomez Casgaya, Caterina M. Scoglio

Variations in Graph Energy: A Measure for Network Resilience
Tristan Shatto, Egemen K.Cetinkaya

Empirical Evaluation of Network Optimization via Graph Spectra and Energy
Richard Snyder, Tristan Shatto, Egemen K. Cetinkaya

Modeling Link Weights in Backbone Networks
Ian Pittwood and Egemen K. Cetinkaya

Technical Session III – Disaster Resilience

Minimizing the Network Availability Upgrade Cost with Geodiversity Guarantees
Amaro F. de Sousa, Teresa Gomes, Rita Girão-Silva, Lucia Martins

On Centrality-Related Disaster Vulnerability of Network Regions
Farabi Iqbal, Fernando A. Kuipers

Resilient IoT eHealth Solutions in Case of Disasters
Marjan Gusev, Sasko Ristov, Radu Prodan, Matija Dzanko, Ivana Bilic

Technical Session IV – Resilience of Optical Networks

Smart City and IoT Resilience, Survivability, and Disruption Tolerance: Challenges, Modelling, and a Survey of Research Opportunities – Invited
James P. G. Sterbenz
Connectivity Orchestration in Multi-Provider Elastic Optical Networks – Invited
Alessio Giorgetti, Francesco Paolucci, Piero Castoldi

On Robust FSO Network Dimensioning
Fabio D’Andreagiovanni, Michal Pioro, Michael Poss, Marinela Shehaj, Artur Tomaszewski

Link Addition Framework for Optical CDNs Robust to Targeted Link Cut Attacks
Carlos Natalino, Aysegul Yayimli, Lena Wasinska, Marija Furdek

Device Reliability Performance Awareness: Impact of RWA on EDFA Failure Reparation Cost in Optical Networks
Pawel Wiatr, Jiajia Chen, Paolo Monti, Lena Wasinska, Di Yuan

EFAH: An Energy and Fatigue Aware Heuristic for Provisioning Highly Available Connections in Optical Backbone Networks
Carlos Natalino, Filip Idzikowski, Luca Chiaraviglio, Lena Wosinska, Paolo Monti

Technical Session V – Resilient Cloud Computing Architectures/Solutions

On the Initialization in Column Generation for Cloud-Ready and Survivable EONs – Invited
Roza Goscien

Toward Resilient Networks with Fog Computing
Amir Modarresi, James P. G. Sterbenz

Failure Process Characteristics of Cloud-Enabled Services
Besmir Tola, Yuming Jiang, Bjarne E. Helvik

Technical Session VI – Resilience of SDN Networks

Optimising Microservice-based Reliable NFV Management & Orchestration Architectures
Thomas Soenen, Wouter Tavernier, Didier Colle, Mario Pickavet – Invited

Machine Learning Aided Traffic Tolerance to Improve Resilience for Software Defined Networks
Siddharth Gangadhar, James P. G. Sterbenz

A Framework for Improving Network Resilience Using SDN and Fog Nodes
Amir Modarresi, Siddharth Gangadhar, James P. G. Sterbenz

Characterization of Failure Dynamics in SDN Controllers
Petra Vizarreta, Poul E. Heegaard, Bjarne E. Helvik, Wolfgang Kellner, Carmen Mas Machuca