

# ***RQD 2017***

## Preliminary Conference Program

### THURSDAY, AUGUST 3, 2017

8:00 am - 9:00 am	<p>Registration</p> <p>Continental Breakfast</p>
9:00 am - 9:15 am	<p>Welcome</p> <p>Opening Remarks</p> <p>Awards Presentation</p>
9:15 am - 10:00 am	<p>To be announced</p>
10:00 am - 10:30 am	Coffee Break
10:30 am - 12:00 pm	<p><b>SESSION 1: Statistical Reliability Modeling &amp; Applications</b>  <b>Chair: Prof. D. Gary Harlow (<i>Lehigh University, USA</i>)</b></p> <p><b>Analyzing Visitors' Characteristics in Tourist Areas Based on Mobile Phone Users' Location Data</b>  Masahide Yamamoto (<i>Nagoya Gakuin University, Japan</i>)</p> <p><b>The ELECTRE I Method to Optimise GPR Data Processing Analyses for Maintenance of Water Networks</b>  Silvia Carpitella (<i>University of Palermo, Italy</i>)  Silvia J. Ocana-Levario (<i>Universitat Politècnica de València, Spain</i>)  Julio Benítez (<i>Universitat Politècnica de València, Spain</i>)  Antonella Certa (<i>University of Palermo, Italy</i>)  Mario Enea (<i>University of Palermo, Italy</i>)  Joaquín Izquierdo (<i>Universitat Politècnica de València, Spain</i>)</p> <p><b>Importance Analysis for Typical Parts of Civil Airplane Slat Considering Performance Degradation</b>  Changcong Zhou (<i>Northwestern Polytechnical University, China</i>)  Chenghu Tang (<i>Northwestern Polytechnical University, China</i>)  Fuchao Liu (<i>Northwestern Polytechnical University, China</i>)  Zheng Zhang (<i>Northwestern Polytechnical University, China</i>)</p> <p><b>Empirical Confidence Bounds</b>  D. Gary Harlow (<i>Lehigh University, USA</i>)</p> <p><b>SESSION 2: Network Reliability &amp; Modeling</b>  <b>Chair: Prof. Yi-Kuei Lin (<i>National Taiwan Univ of Sci &amp; Tech, Taiwan</i>)</b></p> <p><b>Markov Chain Monte Carlo Approach for Burr Type XII Distribution</b>  Jianping Zhu (<i>Northeast Petroleum University, China</i>)  Hua Xin (<i>Northeast Petroleum University, China</i>)  Junge Sun (<i>Xiamen University, China</i>)  Tzong-Ru Tsai (<i>Tamkang University, Taiwan</i>)</p>

**A Practical Preventive Maintenance for Aging Multi-State K-out-of-n Systems**

Chun-Ho Wang (*National Defense University, Taiwan*)

Chao-Hui Huang (*R.O.C. Naval Academy, Taiwan*)

**System Reliability Estimation for a Manufacturing Network with Joint Buffers**

Ping-Chen Chang (*National Quemoy University, Taiwan*)

Yi-Kuei Lin (*National Taiwan Univ of Sci & Tech, Taiwan*)

**Stochastic Flow Distribution Network of Multiple Sinks with Inventory Consideration**

Cheng-Fu Huang (*Feng Chia University, Taiwan*)

Yi-Kuei Lin (*National Taiwan Univ of Sci & Tech, Taiwan*)

Man-Ju Chuang (*National Taiwan Univ of Sci & Tech, Taiwan*)

1:15 pm - 2:45 pm

**SESSION 3: Reliability in Design and Optimization**

**Chair: Prof. Gordon J. Savage (University of Waterloo, Canada)**

**Time-Dependent Global Reliability Sensitivity Analysis of Mechanisms with Correlated Random Input Variables**

Pengfei Wei (*Northwestern Polytechnical University, China*)

Wenxuan Wang (*Northwestern Polytechnical University, China*)

**Framing Reliability Specification in Early Design Phase of Subsea Systems**

Juntao Zhang (*Norwegian University of Science and Technology, Norway*)

Yiliu Liu (*Norwegian University of Science and Technology, Norway*)

Mary Ann Lundteigen (*Norwegian University of Science and Technology, Norway*)

**A Goal programming Model for Network Reliability Design Problem**

Seyedmohsen Hosseini (*Center for Logistics, Trade, and Transportation, USA*)

MD Sarder (*Bowling Green State University, USA*)

Ahmed Islam (*Center for Logistics, Trade, and Transportation, USA*)

**Time-Dependent Meta-Models for Dynamic Systems with Nonparametric Excitations**

Gordon J. Savage (*University of Waterloo, Canada*)

Young Kap Son (*Andong National University, South Korea*)

**SESSION 4: Software Reliability Measurement and Assessment (in honor of Prof. Shigeru Yamada)**

**Chair: Prof. Shinji Inoue (Kansai University, Japan)**

**A Hybrid Approach to Identify the Maximum Likelihood Estimates of a Two Change-point Goel-Okumoto Software Reliability Growth Model**

Vidhyashree Nagaraju (*University of Massachusetts Dartmouth, USA*)

Lance Fiondella (*University of Massachusetts Dartmouth, USA*)

Thierry Wandji (*Naval Air Systems Command, USA*)

**Change-Point Modeling for Software Reliability Assessment under Imperfect Debugging Environment**

Shinji Inoue (*Kansai University, Japan*)

Hiroyuki Inaba (*Tottori University, Japan*)

Shigeru Yamada (*Tottori University, Japan*)

**Software Reliability Modeling with Considerations of Two-Phase Imperfect Debugging and Fault Removal**

Mengmeng Zhu (*Rutgers University, USA*)

Hoang Pham (*Rutgers University, USA*)

**On Bayesian Estimation for Software Reliability Assessment Based on a Discrete NHPP Model**

Shinji Inoue (*Kansai University, Japan*)

Shigeru Yamada (*Tottori University, Japan*)

2:45 pm - 3:00 pm

Coffee Break

3:00 pm - 5:00 pm

**SESSION 5: Maintenance Optimization and Applications (in honor of Professor Shigeru Yamada)**  
**Chair: Prof. Minjae Park (Hongik University, Korea)**

**Age Replacement Policies with Shortage and Excess Costs**

Mingchih Chen (*Fu Jen Catholic University, Taiwan*)

Xufeng Zhao (*Qatar University, Qatar*)

Toshio Nakagawa (*Aichi Institute Of Technology, Japan*)

**Three Maintenances for Age Replacement Policies**

Xufeng Zhao (*Qatar University, Qatar*)

Khalifa N. Al-Khalifa (*Qatar University, Qatar*)

Cunhua Qian (*Nanjing Tech University, China*)

Toshio Nakagawa (*Aichi Institute Of Technology, Japan*)

**Optimal Maintenance Strategy for Second-hand Product Under Repair-replacement Policy**

Minjae Park (*Hongik University, Korea*)

Ki Mun Jung (*Kyungsung University, Korea*)

Dong Ho Park (*Hallym University, Korea*)

**A Survey of Continuous Failure Rates and Their Applications to Replacement Policies**

Xufeng Zhao (*Qatar University, Qatar*)

Toshio Nakagawa (*Aichi Institute Of Technology, Japan*)

**Cumulative Backup Policies for Database Systems**

Shouji Nakamura (*Kinjo Gakuin University, Japan*)

Masashi Yamakawa (*Kinjo Gakuin University, Japan*)

Xufeng Zhao (*Qatar University, Qatar*)

**SESSION 6: Accelerated Degradation Tests and Modeling**  
**Chair: Prof. Elsayed A. Elsayed (Rutgers University, USA)**

**Design an optimal plan of Accelerated Degradation Test with Acceleration Factor Constant Principle**

Hao-Wei Wang (*Naval Aeronautical and Astronautical University, China*)

Fei Teng (*Naval Aeronautical and Astronautical University, China*)

**Planning Optimal Degradation Tests in Consideration of Budget and Statistic Accuracy on Different Stress Levels**

Zeljana Beslic (*University of Stuttgart, Germany*)

Peter Müller (*University of Stuttgart, Germany*)

Shuang Yan (*University of Stuttgart, Germany*)

	<p>Bernd Bertsche (<i>University of Stuttgart, Germany</i>)</p> <p><b>Acceleration Reliability Growth Tests under Double-stresses</b>  Jinyong Yao (<i>Beihang University, China</i>)  Hao Wu (<i>Beihang University, China</i>)  Yiliu Liu (<i>Norwegian University of Science and Technology, Norway</i>)  Xiangfen Wang (<i>Beihang University, China</i>)</p> <p><b>Estimating Activation Energy of the LiFePO4 Battery Using Dual Dynamic Stress Accelerated Degradation Tests</b>  Yu-Chang Lin (<i>National Changhua University of Education, Taiwan</i>)  Yi-Ru Li (<i>National Changhua University of Education, Taiwan</i>)  Kuan-Jung Chung (<i>National Changhua University of Education, Taiwan</i>)</p> <p><b>Optimal Operational Selection and Sequencing of Systems with Mixtures of One-Shot Units</b>  Yao Cheng (<i>Rutgers University, USA</i>)  Elsayed A. Elsayed (<i>Rutgers University, USA</i>)</p>
5:30 pm - 7:00 pm	<b>Welcome Reception</b>

## FRIDAY, AUGUST 4, 2017

8:00 am - 8:30 am	<p>Registration</p> <p>Continental Breakfast</p>
8:30 am - 10:00 am	<p><b>SESSION 7: Software Engineering, Reliability and Security Analysis</b>  Chair: Prof. Taghi M. Khoshgoftaar (<i>Florida Atlantic University, USA</i>)</p> <p><b>Performance of Feature Subset Evaluators for Software Engineering Datasets</b>  Huanjing Wang (<i>Western Kentucky University, USA</i>)  Taghi M. Khoshgoftaar (<i>Florida Atlantic University, USA</i>)  Kehan Gao (<i>Eastern Connecticut State University, USA</i>)</p> <p><b>A Framework for Capturing HTTP GET DDoS Attacks on a Live Network Environment</b>  Chad Calvert (<i>Florida Atlantic University, USA</i>)  Clifford Kemp (<i>Florida Atlantic University, USA</i>)  Taghi M. Khoshgoftaar (<i>Florida Atlantic University, USA</i>)  Maryam M. Najafabadi (<i>Florida Atlantic University, USA</i>)</p> <p><b>Effective Selection of Packet Header Fields For Detection of Man In The Middle Attacks in LAN Environments</b>  Maryam M. Najafabadi (<i>Florida Atlantic University, USA</i>)  Taghi M. Khoshgoftaar (<i>Florida Atlantic University, USA</i>)  Chad Calvert (<i>Florida Atlantic University, USA</i>)  Clifford Kemp (<i>Florida Atlantic University, USA</i>)</p> <p><b>Analysis of a Transfer Learning Application Using the Transfer Learning Test Framework</b></p>

Karl R. Weiss (*Florida Atlantic University, USA*)  
Taghi M. Khoshgoftaar (*Florida Atlantic University, USA*)

**SESSION 8: System Reliability and Maintenance Optimization**  
**Chair: Prof. Yao Hsu (Kainan University, Taiwan)**

**An Efficient Algorithm to Solve the Maximal Flow Problems**  
Shin-Guang Chen (*Tungnan University, Taiwan*)

**Extended Optimal Replacement Policy based on cumulative damage for a two-unit system subject to shocks**  
Shey-Huei Sheu (*Providence University, Taiwan*)

**Network Reliability for Flight Routes with Time and Stopover Constraints**  
Phuong Thi Nguyen (*National Taiwan University of Science and Technology, Taiwan*)  
Yi-Kuei Lin (*National Taiwan University of Science and Technology, Taiwan*)

**Reliability Analysis of High-Power LED Assemblies of Street Light under Thermal Environments**  
Yao Hsu (*Kainan University, Taiwan*)

10:00 am –10:15 am

Coffee Break

10:15 am - 11:45 am

**SESSION 9: Reliability/Maintenance Modeling and Applications (in honor of Prof. Shigeru Yamada)**  
**Chair: Prof. Yoshinobu Tamura (Tokyo City University, Japan)**

**Reliability Modelling of Window Flow Control Scheme for a Communication System based on Packet Transmission Interval**  
Mitsutaka Kimura (*Gifu City Women's College, Japan*)  
Mitsuhiro Imaizumi (*Aichi Gakusen University, Japan*)  
Toshio Nakagawa (*Aichi Institute Of Technology, Japan*)

**A Two-Stage Policy for a Server System With Illegal Access**  
Mitsuhiro Imaizumi (*Aichi Gakusen University, Japan*)  
Mitsutaka Kimura (*Gifu City Women's College, Japan*)

**Optimal Self Inspection Policies of Self-service Retailers**  
Kodo Ito (*Fukushima University, Japan*)  
Yoshiyuki Higuchi (*Fukushima University, Japan*)  
Masao Ohta (*Fukushima University, Japan*)  
Xiaoyuan Liu (*AEON Co.,Ltd., Japan*)

**Optimization and Reliability Analysis Tool Based on Multi-Dimensional Wiener Processes for Big Data on Cloud Computing**  
Yoshinobu Tamura (*Tokyo City University, Japan*)  
Shigeru Yamada (*Tottori University, Japan*)

**SESSION 10: Reliability, Safety and Risk Assessment**  
**Chair: Dr. Mingxiao Jiang (Medtronic, Plc., USA)**

**Design Option Analysis of SRAM-based FPGAs in Safety-Critical Systems**  
Xiangfen Wang (*Beihang University, China*)  
Yiliu Liu (*Norwegian University of Science and Technology, Norway*)

Mary Ann Lundteigen (*Norwegian University of Science and Technology, Norway*)  
Cheng Gao (*Beihang University, China*)  
Jiaoying Huang (*Beihang University, China*)

**Research of Reliability Evaluation Method Based on Optimal Parameter Estimation**

Jianjun Ma (*University of Shanghai for Science and Technology, China*)  
Songlin Zheng (*University of Shanghai for Science and Technology, China*)  
Tie Chen (*University of Shanghai for Science and Technology, China*)  
Jinzhi Feng (*University of Shanghai for Science and Technology, China*)  
Lihui Zhao (*University of Shanghai for Science and Technology, China*)

**Comparisons of Endurance Time Models in the Prediction of Pulling Tasks**

Kai Way Li (*Chung Hua University, China*)  
Fan Tang (*Hunan Institute of Technology, China*)  
Cannan Yi (*Hunan Institute of Technology, China*)  
Lu Peng (*Hunan Institute of Technology, China*)

**Risk Assessment with Causality Measurement**

Mingxiao Jiang (*Medtronic, Plc., USA*)  
Feng-Bin Sun (*Tesla, Inc., USA*)

12:00 pm - 1:00 pm

**Conference Luncheon**

1:15 pm - 2:45 pm

**SESSION 11: Software and System Reliability Modeling & Applications (in honor of Professor Shigeru Yamada)**  
**Chair: Prof. Satoshi Fukumotoz (Tokyo Metropolitan University, Japan)**

**Software Reliability Modeling Approaches with Test Environmental Factors**

Ailin Li (*Tottori University, Japan*)  
Shinji Inoue (*Kansai University, Japan*)  
Shigeru Yamada (*Tottori University, Japan*)

**Human Reliability Analysis to Support the Development of a Software Project**

Silvia Carpitella (*Università degli Studi di Palermo, Italy*)  
Antonella Certa (*Università degli Studi di Palermo, Italy*)  
Mario Enea (*Università degli Studi di Palermo, Italy*)  
Giacomo Maria Galante (*Università degli Studi di Palermo, Italy*)  
Joaquín Izquierdo (*Universitat Politècnica de València, Spain*)  
Concetta Manuela La Fata (*Università degli Studi di Palermo, Italy*)

**A Note on an Optimal Maintenance Policy for a Markovian Deteriorating System Subject to Random Shocks**

Nobuyuki Tamura (*Hosei University, Japan*)

**A Synchronous Software Rejuvenation Technique for Time Warp Event Simulation**

Mamoru Oharay (*Tokyo Metropolitan Industrial Technology Research Institute, Japan*)  
Satoshi Fukumotoz (*Tokyo Metropolitan University, Japan*)

**SESSION 12: Engineering Reliability and Applications**  
**Chair: Prof. Liyang Xie (Northeastern University, China)**

**Reliability Analysis of Complex Welded Aluminium Alloy Structural Part**

Xiaowei Yin (*Shenyang Institute of Engineering, China*)  
Changhui Yao (*Northeastern University, China*)  
Wenxue Qian (*Northeastern University, China*)  
Liyang Xie (*Northeastern University, China*)

**Three-Parameter vs. Two-Parameter Weibull Model for Single Fiber Strength**

Ningxiang Wu (*Northeastern University, China*)  
Liyang Xie (*Northeastern University, China*)

**Analysis of Thermal Characteristics of Aircraft Gearbox Based on Thermal Network Method**

Xingfu Zhao (*Beihang University, China*)  
Guanhua Song (*Beihang University, China*)  
Yidu Zhang (*Beihang University, China*)  
Yanzhong Wang (*Beihang University, China*)  
Delong Dou (*Beihang University, China*)

**On the Shape of Failure Rate Curve and Influencing Factors**

Liyang Xie (*Northeastern University, China*)  
Bo Qin (*Northeastern University, China*)

2:45 pm - 3:00 pm

Coffee Break

3:00 pm - 4:30 pm

**SESSION 13: Reliability Analysis and Optimization**

**Chair: Prof. B.S Dhillon (University of Ottawa, Canada)**

**Optimal Reliability of Series and Parallel Systems subject to Two Failure Modes Considering Correlated Failures**

Anusha Krishna Murthy (*University of Massachusetts Dartmouth, USA*)  
Saikath Bhattacharya (*University of Massachusetts Dartmouth, USA*)  
Lance Fiondella (*University of Massachusetts Dartmouth, USA*)

**Reliability Analysis Method For Three-State Nuclear Power Electrical Systems Based On Goal Oriented Methodology**

Ming-chao Lu (*Shanghai Nuclear Engineering Research & Design Institute, China*)  
Xiao-jian Yi (*China North Industries Group Corp., China*)  
Jian-feng Chen (*Shanghai Nuclear Engineering Research & Design Institute, China*)  
Yong-jun Bai (*Shanghai Nuclear Engineering Research & Design Institute, China*)  
Hui-na Mu (*Beijing Institute of Technology, China*)

**Expected Waiting Time of Demand Responsive Transport with a Waiting Point**

Junji Koyanagi (*Tottori University, Japan*)  
Kensuke Takemoto (*Tottori University, Japan*)

**Mining Equipment Reliability: An Investigative Study**

B.S Dhillon (*University of Ottawa, Canada*)

**SESSION 14: Performance Modeling and Simulation**

**Chair: Prof. Liyang Xie (Northeastern University, China)**

**Security Analysis of Airborne Transmitter's Thread Connection Based on Finite Element Simulation Technology**

Yan-zhong Wang (*Beihang University, China*)  
 Peng Liu (*Beihang University, China*)  
 Jing-bo Guo (*Shijiazhuang Tiedao University, China*)  
 Xue-miao Cui (*Liaoning University of Technology, China*)

**The Kinematic Analysis and Dynamics Simulation of the Segment-Erection Experiment Table**

JingBo Guo (*Shijiazhuang Tiedao University, China*)  
 ChunJie Xu (*Shijiazhuang Tiedao University, China*)

**Performance Analysis and Design Improvement of a Sludge Dewatering System**

Derrick C.P. Ng (*The Hong Kong Polytechnic University, Hong Kong SAR*)  
 Eric T.T. Wong (*The Hong Kong Polytechnic University, Hong Kong SAR*)

**Simulation Specimen Design Method of Aeroengine Compressor Disk**

Wenxue Qian (*Northeastern University, China*)  
 Jiyao Liu (*Northeastern University, China*)  
 Yankai Yuan (*Northeastern University, China*)  
 Xiaowei Yin (*Shenyang Institute of Engineering, China*)  
 Liyang Xie (*Northeastern University, China*)

**SATURDAY, AUGUST 6, 2017**

8:00 am - 8:30 am

Registration  
 Continental Breakfast

8:30 am - 10:00 am

**SESSION 15: Integrated Reliability and Safety Analysis**  
 Chair: Prof. Songlin Zheng (*University of Shanghai for Science and Technology, China*)

**Non-repairable Multi-state Consecutive 2-out-of-n Failed Systems subject to Correlated Failures**

Bentolhoda Jafary (*University of Massachusetts Dartmouth, USA*)  
 Lance Fiondella (*University of Massachusetts Dartmouth, USA*)

**Research on Load Spectrum of CNC Machine Tool Based on Cutting Current Signal**

Ying Wu (*Huazhong University of Science and Technology, China*)  
 Bin Li (*Huazhong University of Science and Technology, China*)  
 Jindong Li (*Yunke Intelligent Manufacturing (Shenyang) Co., Ltd, China*)  
 Subao Ding (*Huazhong University of Science and Technology, China*)

**Design, Build and Test an Innovative Tail-Sitter Unmanned Aerial Vehicle (UAV)**

Yiming Zhang (*The Hong Kong Polytechnic University, Hong Kong SAR*)  
 Weichen Xu (*The Hong Kong Polytechnic University, Hong Kong SAR*)  
 Guangyi Chen (*The Hong Kong Polytechnic University, Hong Kong SAR*)

**SESSION 16: Reliability Optimization**  
 Chair: Dr. Manwinder Kaur (*General Shivdev Singh Diwan Gurbachan Singh Khalsa College, India*)

**A Modified Proximal Gradient Method for a Class of Sparse Optimization Problems**  
 Yingyi Li (*Beijing University of Technology, China*)



	<p>Haibin Zhang (<i>Beijing University of Technology, China</i>)</p> <p><b>A Method of Optimization Selecting Test Points by Inverse Process</b> Wenkui Hou (<i>Beihang University, China</i>) Zhiming Zhang (<i>Beihang University, China</i>)</p> <p><b>Duplex Paper Industry (Manufacturing Process and its Performance Analysis)</b> Aakash Deep Sharma (<i>Sri Guru Granth Sahib World University, India</i>) Manwinder Kaur (<i>General Shivdev Singh Diwan Gurbachan Singh Khalsa College, India</i>)</p>
10:00 am - 10:15 am	Coffee Break
10:15 am - 11:45 am	<p><b>SESSION 17: Vibration Analysis and Reliability Prediction</b> Chair: Prof. Zhenmin Chen (<i>Florida International University, USA</i>)</p> <p><b>Random Vibration Analysis of a New Type of EMU CFRP Equipment Cabin Frame</b> Yong-Yan Wang (<i>Qingdao University of Science &amp; Technology, China</i>) Xiang-Feng Zhang (<i>Qingdao University of Science &amp; Technology, China</i>) Yue-Li Han (<i>Qingdao University of Science &amp; Technology, China</i>) Yu-Biao Zhang (<i>Qingdao University of Science &amp; Technology, China</i>) Xiu-Wen Shi (<i>Qingdao University of Science &amp; Technology, China</i>)</p> <p><b>Reliability and importance measures for Combined m-Consecutive-k-out-of-n: F and Consecutive-kb-out-of-n: F Systems with non-homogeneous Markov-dependent components</b> Mahmoud Boushaba (<i>Ecole Normale Supérieure de Constantine, Algeria</i>)</p> <p><b>Modal Analysis and Crack Propagation Residual Life Prediction of Vibrating Screen Beam</b> Zerong Zhang (<i>Qingdao University of Science and Technology, China</i>) Yongyan Wang (<i>Qingdao University of Science and Technology, China</i>) Zhimin Fan (<i>Qingdao University of Science and Technology, China</i>)</p> <p><b>Use Pyramidal Distribution for Multivariate Uniformity Test Power Comparison</b> Zhenmin Chen (<i>Florida Interntional University, USA</i>)</p>
11:45 am	Adjourn!