

BDD-Based Reliability Analysis of Phased-Mission System with Periodical Phase

Haipeng Zhu (University of Electronic Science and Technology of China, China)

Hong-Zhong Huang (University of Electronic Science and Technology of China, China)

Yu Liu (University of Electronic Science and Technology of China, China)

Consideration of Operating Environment when Optimizing Spare Parts Inventories

Behzad Ghodrati (University of Toronto, Canada)

Uday Kumar (Luleå University of Technology, Sweden)

SESSION 16

Friday, August 7, 2:40 pm - 3:55 pm

Statistical Assessments in Beauty Science

Chair: **Ching-San Chiang** (*Chienkuo Technology University, Taiwan*)

The Effect of English Teaching in Department of Styling and Cosmetology

Yu-lin Wei (Chienkuo Technology University, Taiwan)

Pei-lin Wu (Chienkuo Technology University, Taiwan)

Trend Analysis of International Beauty Certificate—A Case Study of Students from the Department of Beauty Science at Chienkuo Technology University

Hsiu-Chin Huang (Chienkuo Technology University, Taiwan)

Ming-Chieh Wu (Chienkuo Technology University, Taiwan)

Shu-Er Yang (Chienkuo Technology University, Taiwan)

A Study on the Importance of Bride Secretaries' Ability and Competition

Pei-Ling Wu (Chienkuo Technology University, Taiwan)

Ching-Toung Wu (Chienkuo Technology University, Taiwan)

Hurdy Su (SUSUSING Co., Ltd., Republic of South Africa)

3:55 pm – 4:10 pm Coffee Break

SESSION 17

Friday, August 7, 4:10 pm - 5:40 pm

Maintenance Optimization

Chair: **Takashi Satow** (*Tottori University, Japan*)

An Optimal Maintenance Policy of a Production Process with Two Types of Inspections

Saturday, August 8, 2009

7:45 am Registration/Continental Breakfast

SESSION 19

Saturday, August 8, 8:15 am - 10:15 am

Service Engineering & OSS Reliability

Chair: **Koichi Tokuno** (*Tottori University, Japan*)

Stochastic Differential Equation Modeling based on Component Importance Levels and Optimal Version-upgrade Problem for OSS

Tomoaki Tanaka (Tottori University, Japan)

Yoshinobu Tamura (Yamaguchi University, Japan)

Shigeru Yamada (Tottori University, Japan)

Generalized Markovian Software Reliability Modeling and Its Approximation

Takahiro Kodera (Tottori University, Japan)

Koichi Tokuno (Tottori University, Japan)

Shigeru Yamada (Tottori University, Japan)

Markovian Performability Modeling for Hardware-Software System

Junichi Takahashi (Tottori University, Japan)

Nobuyuki Tamura (National Defense Academy, Japan)

Ken-Ichi Hayashi (National Defense Academy, Japan)

Tetsushi Yuge (National Defense Academy, Japan)

Shigeru Yanagi (National Defense Academy, Japan)

Random Checking Times of Backup Operation for a Database System

Kenichiro Naruse (Nagoya Sangyo University, Japan)

Toshio Nakagawa (Aichi Institute of Technology, Japan)

Sayori Maeji (Kinjo Gakuin University, Japan)

Random and Age Replacement Policies

Mingchih Chen (Chaoyang University of Technology, Taiwan)

Satoshi Mizutani (Aichi Institute of Technology, Japan)

Toshio Nakagawa (Aichi Institute of Technology, Japan)

An Inspection Threshold for Two-Components Systems

Takashi Satow (Tottori University, Japan)

Hajime Kawai (Tottori University, Japan)

SESSION 18

Friday, August 7, 4:10 pm - 5:40 pm

Software Reliability & Testing

Chair: **Taghi M. Khoshgoftaar** (*Florida Atlantic University, USA*)

Cost-Based Fault Prediction Models

Naeem Seliya (University of Michigan - Dearborn, USA)

Taghi M. Khoshgoftaar (Florida Atlantic University, USA)

An Evaluation of Feature Selection Techniques with Various Software Quality Classification Models

Kehan Gao (Eastern Connecticut State University, USA)

Taghi M. Khoshgoftaar (Florida Atlantic University, USA)

Lofton A. Bullard (Florida Atlantic University, USA)

Predicting Software Reliability Growth Using Bootstrap

Nonparametric Fixed-width Confidence Intervals

L. Sandamali Dharmasena (RMIT University, Australia)

P. Zeepongsekul (RMIT University, Australia)

Monitoring Ocean Turbines: A Reliability Assessment

P. P. Beaujean (Florida Atlantic University, USA)

T. M. Khoshgoftaar (Florida Atlantic University, USA)

J. C. Sloan (Florida Atlantic University, USA)

N. Xirosoy (Florida Atlantic University, USA)

D. Vendittis (Florida Atlantic University, USA)

Koichi Tokuno (Tottori University, Japan)

Shigeru Yamada (Tottori University, Japan)

A Method of Reliability Assessment based on Bayesian Network for an Embedded Open Source Software

Hidemitsu Takehara (Tottori University, Japan)

Yoshinobu Tamura (Yamaguchi University, Japan)

Shigeru Yamada (Tottori University, Japan)

Joint Determination of Economic Manufacturing Quantity and Control Limits of X-Bar Control Chart

Chung-Ho Chen (Southern Taiwan University, Taiwan)

SESSION 20

Saturday, August 8, 8:15 am - 10:15 am

Reliability Applications

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

NCo-Simulation of Dynamic Behaviors of the High Speed Flexible Rotor

Xiangwei Kong (Northeastern University, China)

Zhongyong Luo (Northeastern University, China)

Shu-mei Li (Eastern Liaoning University, China)

The Application of Non-homogeneous Poisson Process in Tractors Reliability Model

Changlin Ao (Northeast Agricultural University, China)

Yazhuo Zhang (Northeast Agricultural University, China)

Yijun Li (Harbin Institute of Technology, China)

Analysis of Statistical Features for Potential Strength

Increment of Structural Steel in Auto Industry

Songlin Zheng (University of Shanghai for Science and Technology, China)

Li Li (University of Shanghai for Science and Technology, China)

Jinzhong Feng (University of Shanghai for Science and Technology, China)

Feng Yuan (University of Shanghai for Science and Technology, China)

Yinyi Wang (University of Shanghai for Science and Technology, China)

The Strategic Role of Spare Parts Availability and Facility

Location on Maintenance in Industrial Systems

Riccardo Manzini (University of Bologna, Italy)

Filippo Bindi (University of Bologna, Italy)

Emilio Ferrari (University of Bologna, Italy)

Mauro Gamberi (University of Bologna, Italy)

Cristina Mora (University of Bologna, Italy)

Arrigo Pareschi (University of Bologna, Italy)

Alberto Regattieri (University of Bologna, Italy)

Numerical Calculation of Large-Sized Linear Vibration

Screeener and Modal Analysis of Real Type and Model

Yongyan Wang (Qingdao University of Science and Technology, China)

Hongxia Zhang (Qingdao University of Science and Technology, China)

Shuai Luo (Qingdao University of Science and Technology, China)

Caihong Yue (Qingdao University of Science and Technology, China)

Xin He (Qingdao Hongda Textile Machinery Co., Ltd., China)

SESSION 21

Saturday, August 8, 10:30 am - 12:30 pm

System Reliability Modeling

Chair: **Tongdan Jin** (*Texas A&M International University, USA*)

Electricity Distribution Systems Optimization Using Evolutionary Algorithms

Sowmya Parimi (The University of Texas at El Paso, USA)

Jose F. Espiritu (The University of Texas at El Paso, USA)

Multi-Objective Network Reliability Optimization using Evolutionary Algorithms

Oswaldo Aguirre (University of Texas at El Paso, U.S.A.)

Delia Villanueva (University of Texas at El Paso, U.S.A.)

Heidi Taboada (University of Texas at El Paso, U.S.A.)

Quantifying and Controlling Hard Disk Drive Reliability Through Parametric Monitoring During Product Ongoing Reliability Test

Feng-Bin Sun (Western Digital Corporation, U.S.A.)

Eve Ou (Western Digital Corporation, U.S.A.)

Shaoang Zhang (Western Digital Corporation, U.S.A.)

Reliability Sensitivity Analysis and Parametric Design on Connecting Rod of Reciprocating Compressor

Pengfei Chen (Northeastern University, China)

Zhili Sun (Northeastern University, China)

The Dialectic of the Development of Customer Satisfaction Index Model for Taiwan Service Industries

Cheng-Kang Yuan (Lunghwa University of Science & Technology, Taiwan)

Chuan-Yin Lee (Lunghwa University of Science & Technology, Taiwan)

Some Advances in Uncertainty Analysis of Complex System Reliability Estimations

Tongdan Jin (Texas A&M International University, U.S.A.)

Peng Wang (Hamilton Sundstrand Power Systems, U.S.A.)

Two Imperfect Maintenance Modellings for Systems

Presenting a Burn-in Period

Yann Dijoux (University of Strathclyde, Glasgow)

SESSION 22

Saturday, August 8, 10:30 am - 12:30 pm

System Reliability Modeling

Chair: **TYI-Kuei Lin** (*National Taiwan University of Science and Technology, Taiwan*)

Multistate Network Reliability Optimization for a Computer Network under Resources Assignments

Yi-Kuei Lin (National Taiwan University of Science and Technology, Taiwan)

Cheng-Ta Yeh (National Taiwan University of Science and Technology, Taiwan)

Design and Deployment of a Mobile Sensor Network for the Surveillance of Nuclear Materials in Metropolitan Areas

Jerry Cheng (Rutgers University, U.S.A.)

Minge Xie (Rutgers University, U.S.A.)

Fred Robert (Rutgers University, U.S.A.)

Identification of Climate Cycles from Volatile Time Series of Solar Radiation in PV System Design

Shin-Guang Chen (Tungnan University, Taiwan)

Ya-Sian Wang (Tungnan University, Taiwan)

Yu-Min Xue (Tungnan University, Taiwan)

Wen-Hao You (Tungnan University, Taiwan)

Jian-You Lin (Tungnan University, Taiwan)

Kai-Wei Xu (Tungnan University, Taiwan)

The Routing Policy Problem of a Stochastic Flow Network

Yi-Kuei Lin (National Taiwan University of Science and Technology, Taiwan)

Kung-Chi Li (Vanung University, Taiwan)

Throughput Estimation in a Picker-to-Part Warehouse with a Multiple Picker and Blocking Considerations

Jason Chao-Hsien Pan (Takming University of Science and Technology, Taiwan)

Ming-Hung Wu (Cardinal Tien College of Healthcare & Management, Taiwan)

Optimal Software Release Problems Based on the Technique of Project Management

Toshiyuki Toyota (Tottori University, Japan)

Shigeru Yamada (Tottori University, Japan)

Implementation of Modified FMEA Method into the Process of Logistic Support to Bus Life Cycle

Vladimir Popovic (University of Belgrade, Serbia)

Branko Vasic (University of Belgrade, Serbia)

Ivan Blagojevic (University of Belgrade, Serbia)

Dejan Curovic (University of Belgrade, Serbia)

12:30 pm Adjourn!

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Thursday, August 6, 2009

7:45 a.m. Continental Breakfast/Registration

8:45 a.m. - 9:15 a.m. Welcome - Opening remarks

SESSION 1

Thursday, August 6, 9:15 a.m. - 10:45 a.m.

Accelerated Life Testing

Chair: **Elsayed A. Elsayed** (*Rutgers University, USA*)

Accelerated Life Tests and Reliability Improvement of Image Intensifier Assembly(KIT-7)

Sung-Min Kim (*Korea Testing Laboratory, Korea*)

Jung-Won Park (*Korea Testing Laboratory, Korea*)

Jung-Keol Ham (*Korea Testing Laboratory, Korea*)

Gyu-Ro Kim (*Kyonggi Institute of Technology, Korea*)

Kwang-Youn Kim (*VEGATECH, Korea*)

Optimal Design of Accelerated Life Testing with Multiple

Estimation Objectives using Log-normal Distribution

Haiyan Xu (*Shanghai Normal University, China*)

Yincai Tang (*East China Normal University, China*)

Heliang Fei (*Shanghai Normal University, China*)

Early Reliability Prediction of Mechatronic Systems in Automotive Industry

D. Hofmann (*Universität Stuttgart, Germany*)

M. Kopp (*Universität Stuttgart, Germany*)

B. Bertsche (*Universität Stuttgart, Germany*)

M. Wedel (*Universität Stuttgart, Germany*)

P. Göhner (*Universität Stuttgart, Germany*)

A. Mannhart (*Daimler AG, Böblingen, Germany*)

O. Fritz (*Daimler AG, Böblingen, Germany*)

A Heuristic for Determining Optimum Multiple Stress

Accelerated Life Test Plans

Elsayed A. Elsayed (*Rutgers University, USA*)

Michael Koskulics (*Rutgers University, USA*)

SESSION 2

Thursday, August 6, 9:15 a.m. - 10:45 a.m.

Human Error & Risk Modeling

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

Risk Assessment in Milk Collection and Transport

Suraj M. Alexander (*University of Louisville, USA*)

'Microshocks- Microdamages' Type of System Component Interaction; Failure Models

Jerzy K. Filus (*Oakton Community College, USA*)

Lidia Z. Filus (*Northeastern Illinois University, USA*)

Mortality and Life Expectancy Predictiony

Hoang Pham (*Rutgers University, USA*)

Human Error in Aviation: An Investigative Study

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

10:45 am - 11:00 am Coffee Break

SESSION 3

Thursday, August 6, 11:00 am - 12:30 pm

Quality in Design

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

Multi-Process Capability Analysis Chart for Dependent

Non-normal Quality Characteristics

Sang Boo Kim (*Changwon National University, Korea*)

Sung Youb Choo (*Samsung Techwin Co., LTD, Korea*)

Quality in Design: Designs of Tactile Guide Paths

Kin Wai Michael Siu (*The Hong Kong Polytechnic University, Hong Kong*)

Joint Confidence Bounds for the Performance Distribution of

a Multi-state System

Lance Fiondella (*University of Connecticut, USA*)

Performability Design of Dynamic Systems

Turuna Seecharan (*University of Waterloo, Canada*)

Gordon Savage (*University of Waterloo, Canada*)

SESSION 4

Thursday, August 6, 11:00 am - 12:30 pm

Reliability & Maintainability in Engineering

Chair: **Rong Pa** (*Arizona State University, USA*)

Remaining Useful Life Prediction for a Unit under Time-

Varying Operating Conditions

Haitao Liao (*University of Tennessee, USA*)

Component Replacement Analysis in the Power Industry

Jose F. Espiritu (*The University of Texas at El Paso, USA*)

David W. Coit (*Rutgers, The State University of New Jersey, USA*)

Optimal Maintenance Strategies for Wind Turbine Systems

Eunshin Byon (*Texas A&M University, USA*)

Lewis Ntaimo (*Texas A&M University, USA*)

Yu Ding (*Texas A&M University, USA*)

Reliability of Photovoltaic Modules: An Overview

Joseph Kuitche (*Arizona State University, USA*)

Rong Pan (*Arizona State University, USA*)

Govindasamy Tamizhmani (*Arizona State University, USA*)

SESSION 5

Thursday, August 7, 1:30 pm - 3:25 pm

Software Reliability Modeling & Its Application

Chair: **Shinji Inoue** (*Tottori University, Japan*)

Reliability Modeling with Imperfect Debugging based on

Stochastic Differential Equation for an Open Source Software

Yoshinobu Tamura (*Yamaguchi University, Japan*)

Shigeru Yamada (*Tottori University, Japan*)

Infinite Server Queueing Modeling for Discrete Software

Reliability Measurement

Naoki Iwamoto (*Tottori University, Japan*)

Shinji Inoue (*Tottori University, Japan*)

Shigeru Yamada (*Tottori University, Japan*)

Software Reliability Modeling with Changing of Testing-

Environment at Change-Point

Yuichi Tobita (*Tottori University, Japan*)

Shinji Inoue (*Tottori University, Japan*)

Shigeru Yamada (*Tottori University, Japan*)

Quality Assurance for Agile Component-Based Software

Development

Alexandru Averian (*Spiru Haret University, Romania*)

Gheorghe Duda (*Spiru Haret University, Romania*)

Grigore Albeanu (*Spiru Haret University, Romania*)

Software Reliability Modeling based on PHM Approach

in an Infinite Server Queueing Model

Shinji Inoue (*Tottori University, Japan*)

Shigeru Yamada (*Tottori University, Japan*)

SESSION 6

Thursday, August 6, 1:30 pm - 3:25 pm

Quality, Planning & Measurements

Chair: **Sang Boo Kim** (*Changwon National University, Korea*)

Fast Initial Response Features for GWMA Control Charts

based on Observations and Residuals

Shin-Li Lu (*Aletheia University, Taiwan*)

Jyh-Wen Ho (*Aletheia University, Taiwan*)

Exploratory Quality Dimensions of Department Level

in Taiwan Technical Higher Education

Shyi-Huey Wu (*Vanung University, Taiwan*)

Applying Multivariate Batch Modeling to Real Time

Process Monitoring

Tamara Byrne (*Umetrics Inc., USA*)

Svante Wold (*Umeå University, Sweden*)

Nouna Kettaneh-Wold (*Umetrics Inc., USA*)

Collection and Analysis of Field Data for Design

and Quality Improvements

Amar Thiraviam (*Teledyne-ODI, USA*)

Jeremy Lucas (*Teledyne-ODI, USA*)

3:25 pm - 3:40 pm Coffee Break

SESSION 7

Thursday, August 6, 3:40 pm - 5:40 pm

System Reliability in Design

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

Failure-Dependence Mechanism and Copula-based

Reliability Model of Structural Systems

Zhou Jinyu (*Jiangsu Teacher's University of Technology, China*)

Xie Liyang (*Northeastern University, China*)

Crack Linkup and Residual Strength of Multi-hole

Component

Ningxiang Wu (*Northeastern University, China*)

Liyang Xie (*Northeastern University, China*)

Bo Chen (*Beijing Institute of Aeronautical Materials, China*)

Jianzhong Liu (*Beijing Institute of Aeronautical Materials, China*)

Reliability Modeling and Assessment of Isomorphic Multiple

Weak Site Component

Wenxue Qian (*Northeastern University, China*)

Liyang Xie (*Northeastern University, China*)

Xiaowei Yin (*Shenyang Institute of Engineering, China*)

Friday, August 7, 2009

7:45 am Registration/Continental Breakfast

SESSION 9

Friday, August 7, 8:15 am - 9:45 am

Reliability Applications

Chair: **Guangbin Yang** (*Ford Motor Company, USA*)

Inspection and Measurement Errors of Containers

at Port-of-Entry

Yada Zhu (*Rutgers University, USA*)

Mingyu Li (*Rutgers University, USA*)

Christina M. Young (*Rutgers University, USA*)

Minge Xie (*Rutgers University, USA*)

Elsayed A. Elsayed (*Rutgers University, USA*)

Electroencephalograph Criteria for the Design of Cars

Hong Wang (*Northeastern University, China*)

Four-Parameter Model of Component Reliability under

Random Load Environment

Liyang Xie (*Northeastern University, China*)

Wenxue Qian (*Northeastern University, China*)

Ningxiang Wu (*Northeastern University, China*)

SESSION 8

Thursday, August 6, 3:40 pm - 5:40 pm

Statistical Analysis and Uncertainty Analysis

Chair: **Zhenmin Chen** (*Florida International University, USA*)

Age Replacement Policy with Bayesian Imperfect Repair Model

Jae-Hak Lim (*Hanbat National University, Korea*)

Jian Qu (*University of Alberta, Canada*)

Ming J. Zuo (*University of Alberta, Canada*)

Reliability-Based Design with Mixed Discrete Deterministic

and Continuous Random Variables

Shunqi Yang (*University of Electronic Science and*

Technology of China, China)

Zhonglai Wang (*University of Electronic Science and*

Technology of China, China)

Hong-Zhong Huang (*University of Electronic Science and*

Technology of China, China)

Yu Liu (*University of Electronic Science and Technology*

of China, China)

Uncertainty Analysis of Flow Rating Equation for

Uncontrolled Submerged Flow over a Spillway

Walter Z. Tang (*Florida International University, USA*)

Fang Wang (*Florida International University, USA*)

Fernando Miralles-Wilhelm (*Florida International University, USA*)

Emile Damisse (*South Florida Water Management District, USA*)

Applying Bayesian Networks to Test-Field Cost Optimization

Decisions

Bahman Honari (*University of Limerick, Ireland*)

John Donovan (*Institute of Technology Sligo, Ireland*)

Eamonn Murphy (*University of Limerick, Ireland*)

An Alternative Approach for Goodness-of-Fit Test

Zhenmin Chen (*Florida International University, USA*)

Chunmiao Ye (*Florida International University, USA*)

6:00 pm - 7:30 pm Welcome Reception

Reliability and Economic Sustainability in a Revamping

Process of a Gas Oil Desulphurization Unit

M. Bevilacqua (*Università Politecnica delle Marche, Italy*)

F. E. Ciarapica (*Università Politecnica delle Marche, Italy*)

G. Giacchetta (*Università Politecnica delle Marche, Italy*)

An Equilibrium of Threshold Policies in a Queueing System

with Observable and Unobservable Queues on Arrivals

Junji Koyanagi (*Tottori University, Japan*)

Keisuke Yoshida (*Sanko Marketing Foods Co. Ltd., Japan*)

Hajime Kawai (*Tottori University, Japan*)

Design for Reliability: A Case Study of Remote Resistance

Welding Process

Guangbin Yang (*Ford Motor Company, USA*)

SESSION 10

Friday, August 7, 8:15 am - 9:45 am

Stochastic Reliability Modeling

Chair: **Kodoc Ito** (*Kinjo Gakuin University, Japan*)

Reliability Characteristics of an Asynchronous Replication

System Considering the Number of Data Update

Mitsutaka Kimura (*Gifu City Women's College, Japan*)

Mitsuhiro Imaizumi (*Aichi Gakusen University, Japan*)

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

Optimal Management Policy for a Directory Service System

Mitsuhiro Imaizumi (*Aichi Gakusen University, Japan*)

Mitsutaka Kimura (*Gifu City Women's College, Japan*)

Optimal Reorganization Schedule of Structural Database

Deterioration

Syouji Nakamura (*Kinjo Gakuin University, Japan*)

Keiko Nakayama (*Chukyo University, Japan*)

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

Optimal Imperfect Maintenance of Aircraft

Kodo Ito (*Kinjo Gakuin University, Japan*)

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

9:45 am - 9:55 am Coffee Break

SESSION 11

Friday, August 7, 9:55 am - 11:55 am

Engineering Reliability Design and Applications

Chair: **D. Gary Harlow** (*Lehigh University, USA*)

Reliability Analysis of Stochastic Structural System for Bus

Frame Structure

Tianxia Zhang (*Northeastern University, China*)

Guosheng Zhang (*Northeastern University, China*)

Daqian Zhang (*Northeastern University, China*)

Reliability Study of an Intelligent Transmitter

Florent Brissaud (*Institut National de l'Environnement*

Industriel et des Risques, France)

Anne Barros (*Université de Technologie de Troyes, France*)

Christophe Bérenquer (*Université de Technologie de Troyes, France*)

Dominique Charpentier (*Institut National de l'Environnement*

Industriel et des Risques, France)

Study on Numerical Identification of the Nonlinear Chaotic

Vibration of a Gear Pair

Zhe Yuan (*Northeastern University, China*)

Zhili Sun (*Northeastern University, China*)

The Method of Analyzing the Reliability Sensitivity of Tooth

Surface Contact Strength about Spur Gear

Yanyan Shi (*Northeastern University, China*)

Z