

**10th IMA International Conference on
Modelling in Industrial Maintenance and Reliability
13 - 15 June 2018, Manchester, UK**

PROGRAMME



WEDNESDAY 13 JUNE 2018

09:00-09:50	REGISTRATION	
09:50-10:00	WELCOME	
10:00-10:40	<p>KEYNOTE PRESENTATION <i>Cotton Theatre (chair: P. Scarf)</i></p> <p>Dynamic condition-based reliability evaluation for deteriorating systems: applications to deterioration management and joint maintenance/operation decision-making <i>Christophe Bérenguer</i></p>	
10:40-11:10	COFFEE BREAK	
11:10-12:10	<p>MAINTENANCE OPTIMIZATION W2A <i>Cotton Theatre (chair: Ed Pohl)</i></p> <p>A selective maintenance model based on FITradeoff method <i>L.F.A. Ribeiro, P.P.L. Dantas, C.A.V. Cavalcante</i></p> <p>Optimising remedial outcomes for Gas Turbines through large scale data analysis <i>J. McGinty, S. Kollias, G. Leontidis</i></p> <p>Predictive maintenance for a multi-component system with state interaction <i>Phuc Do, Phil Scarf</i></p>	
12:10-13:10	LUNCH	
13:10-14:10	<p>SPARE PARTS ANALYSIS W3A <i>Conference Room 7 (chair: Geert-Jan van Houtum)</i></p> <p>Spare parts optimisation for shutdown planning <i>Rommert, Dekker, W. Van Jaarsveld, S. Zhu</i></p> <p>Modelling spare part demand using transmuted Poisson distribution <i>Renyan Jiang, Zhigao Chen</i></p> <p>Preventive maintenance optimization when a spare part can be 3D printed <i>Rob Basten</i></p>	<p>MAINTENANCE W3B <i>Cotton Theatre (chair: Phuc Do)</i></p> <p>A study of the effect of inspection quality improvement on inspection policy for a technical system <i>R. S. Lopes, C.A.V. Cavalcante, P.A. Scarf</i></p> <p>Inspection policy models with imperfect inspections for single unit systems <i>Honest Walter Chipoyera</i></p> <p>Spare part management for maintenance <i>Peter Mainka</i></p>

14:10-14:50	<p>KEYNOTE PRESENTATION <i>Cotton Theatre (chair: P. Scarf)</i> On optimal replacement of systems with failure rates described by a random jump process <i>Maxim Finkelstein</i></p>	
14:50-15:20	COFFEE BREAK	
15:20-17:00	<p>RELIABILITY MODELLING W4A <i>Cotton Theatre (chair: Maxim Finkelstein)</i></p> <p>Practical uses of the Weibull distribution for decision making <i>Gary Knight</i></p> <p>New method for availability computing of complex systems using Imprecise Markov models <i>J. Akrouche, M. Sallak, E. Châtelet, F. Abdallah and H. Hajj Chehade</i></p> <p>Reliability modelling of dispensing processes in community pharmacy <i>M. Naybour, R. Remenyte-Prescott, M. Boyd</i></p> <p>Decentralization of reliability data through blockchain <i>Tim Ingram</i></p> <p>Computational fluid dynamics or Gaussian is there a right way to model gas dispersion? <i>Amita Tripathi, Claude Souprayen, Andy Stanley, Naomi Warrilow:</i></p>	<p>STATISTICAL ANALYSIS W4B <i>Conference Room 7 (chair: David Percy)</i></p> <p>Estimation and goodness-of-fit tests for virtual age models: single system vs multi-system <i>Léa Brenière, Laurent Doyen, Olivier Gaudoin</i></p> <p>Assurance for sample size determination in reliability demonstration testing <i>Kevin Wilson, Malcolm Farrow</i></p> <p>Applications of the gamma process in storage models: the case of energy harvesting systems <i>Inma T. Castro, Luis Landesa, Alberto Serna</i></p> <p>Generalizing nonparametric predictive inference for right-censored data <i>Ali M. Mahnashi, Frank P.A. Coolen, Tahani Coolen-Maturi (Brief presentation, 5 minutes)</i></p>
19:00	Social event - Garden Bar	
THURSDAY 14 JUNE 2018		
09:00-10:40	<p>MAINTENANCE POLICY Th1A <i>Cotton Theatre (chair: Christophe Bérenguer)</i></p> <p>A pitch control system degradation model considering wind speed uncertainty <i>Jinrui Ma, Mitra Fouladirad, Antoine Grall</i></p> <p>Selective maintenance model for mission-oriented systems considering heterogeneous missions and budget constraints <i>L.F.A. Ribeiro, C.A.V. Cavalcante</i></p> <p>Operation and maintenance planning optimization of wind energy farms: under-researched areas <i>Mahmood Shafiee</i></p> <p>Research on Voice Interaction for Augmented Reality assisted Maintenance <i>Ranran Wang, Chuan Lyu, Shunfeng Mei, Chunhui Guo, Jie Geng and Zeyu Wu</i></p> <p>Pipeline degradation modelling and recommendations <i>Richard Dwight and Wenxu Li</i></p>	<p>ENGINEERING SERVICES Th1B <i>Conference Room 7 (chair: Rasa Remenyte-Prescot)</i></p> <p>Dynamic dispatching and repositioning policies for service engineers <i>Collin Drent, Minou Olde Keizer, and Geert-Jan van Houtum</i></p> <p>Assessment method of supportability for a new aircraft entering into service <i>Adel A. Ghobbar, Anthony L M Cruyt, Richard Curran</i></p> <p>Expert priori knowledge for sizing of maintenance teams with application in natural gas stations <i>Heitor Fagner Lopes de Lima, Rodrigo José Pires Ferreira</i></p> <p>On the joint maintenance-inventory optimisation of parallel production systems <i>Farhad Zahedi-Hosseini, Philip Scarf, Aris Syntetos</i></p> <p>A visualization automated analysis and evaluation method based on virtual reality <i>Qidi Zhou, Dong Zhou</i></p>
10:40-11:10	COFFEE BREAK	
11:10-12:30	<p>WARRANTY ANALYSIS Th2A <i>Cotton Theatre (chair: Mahmood Shafiee)</i></p> <p>A two-dimensional availability-based warranty policy incorporating preventive maintenance <i>Chun Su, Longfei Cheng</i></p> <p>Minimizing the costs of aircraft equipment suppliers during the warranty period <i>Ahmed Raza, Vladimir Ulansky</i></p>	<p>RISK & UNCERTAINTY Th2B <i>Conference Room 7 (chair: Rommert. Dekker)</i></p> <p>Sensitivity analyses of point processes <i>David F. Percy</i></p> <p>Multidimensional risk evaluation: A literature review <i>Marcelo Hazin Alencar, Adiel Teixeira de Almeida, Thalles Vitelli Garcez and Rodrigo José Pires Ferreira</i></p>

	<p>Mitigating warranty risk with cumulative prospect theory <i>Ahmed M. Aljazeera, Ming Luo, Shaomin Wu</i></p> <p>An unpunctual preventive maintenance strategy for items sold with a two-dimensional warranty <i>Xiaolin Wang, Lishuai Li, Min Xie</i></p>	<p>Vulnerability assessment modelling for railway networks <i>Ratthaphong Meesit and John Andrews</i></p> <p>The Incorporation of uncertainty into whole life, whole system asset modelling at Network Rail <i>Sunny Modhara</i></p>
12:30-13:30	LUNCH	
13:30-15:10	<p>MAINTENANCE MODELLING Th3A <i>Cotton Theatre (chair: Cristiano Cavalcante)</i></p> <p>Dynamic imperfect condition-based maintenance for systems subject to nonlinear degradation paths <i>Xiujie Zhao, Zhenglin Liang, Ajith Parlikad, Min Xie</i></p> <p>Joint maintenance scheduling and routing optimization for Geographically Dispersed Production Systems <i>Ho Si Hung Nguyen, Phuc Do, Benoit lung and Hai-Canh Vu</i></p> <p>Predictive model to support monitoring reliability enhancement during Airbus aircraft production assembly test <i>Adel A. Ghobbar, Bram M. D'haene</i></p> <p>A correlative model between maintainability and structure design <i>Chunhui Guo, Chuan Lyu, Jin Yan, Yu Xiao, Ranran Wang</i></p> <p>Maintenance centered matrix-based universal quality characteristics analysis <i>Chuan Lv, Yu Xiao, Jie Geng, Chunhui Guo, Jin Yan</i></p>	
15:10-15:40	COFFEE BREAK	
15:40-17:20	<p>ASSET MANAGEMENT Th4A <i>Cotton Theatre (chair: Richard Dwight)</i></p> <p>Development of pipeline integrity decision models <i>Richard Dwight and Wenxu Li</i></p> <p>Optimal sequential resource allocation under error-prone success assessment <i>K. Kalyanam, M. Pachter, D. Casbeer</i></p> <p>Cost effective component swapping to increase system reliability <i>Aesha Najem, Frank P.A. Coolen</i></p> <p>Multicriteria model to support a definition of a maintenance - spare parts policy <i>P. P. L. Dantas, T. F. O. Rodriguez, C.A.V. Cavalcante</i></p> <p>Predictive model based on reliability alert algorithm for in-service aircraft <i>Adel A. Ghobbar, Anjuli de Wilde</i></p>	
18:30	Conference dinner – Yang Sing	
FRIDAY 15 JUNE 2018		
09:20-10:40	<p>CONDITION BASED MAINTENANCE Fr1A <i>Cotton Theatre (chair: Adel Abulgasseem Ghobbar)</i></p> <p>Optimizing the remote monitoring decisions under imperfect failure predictions <i>Guanlian Xiao, Alp Akcay, Geert-Jan van Houtum, Lisa Maillart</i></p>	

	<p>Industry 4.0 change the work of maintenance <i>Peter Mainka</i></p> <p>Joint optimization of production scheduling and condition-based maintenance planning <i>Bram de Jonge</i></p> <p>Power transformers health diagnostics and prognostics <i>Luis Dias, Armando Leitão, Rui Neto, Luis Guimarães</i></p>	
10:40-11:10	COFFEE	
11:10-12:30	<p>STATISTICAL ANALYSIS Fr2A <i>Cotton Theatre (chair: Imma Castro)</i></p> <p>Remaining Useful Life estimation methods in preparation for predictive maintenance models: confidence intervals and strategies <i>Adrien Delmas, Mohamed Sallak, Walter Schön, Linda Zhao</i></p> <p>Imprecise statistical inference for accelerated life testing data: imprecision related to the likelihood ratio test <i>Abdullah A. Ahmadini, Frank P.A. Coolen</i></p> <p>Modeling spare part demand data using transmuted or exponentiated Poisson distribution <i>R. Jiang and Z. Chen</i></p> <p>Reliability Demonstration Tests Considering Performance Degradation with Measurement Error <i>Cesar Ruiz, Haitao Liao, Edward Pohl</i></p>	
12:30-13:30	LUNCH	
13:30-14:50	<p>CASE STUDY & COST ANALYSIS Fr2A <i>Cotton Theatre (chair: Phil Scarf)</i></p> <p>Modelling the quality of maintenance of a protection system: a case study on isolation valves used in water distribution systems <i>A. R. Alberti, C. A. V. Cavalcante, P.A. Scarf, A. L. O. Silva</i></p> <p>Integration of reliability, availability and maintainability analysis and operational research modelling – a case study <i>Jacqueline Bishop, Mike McCarthy and Mike Niblett</i></p> <p>Maintenance engineering management of a LNG plant critical system: a case study of gas turbine dry gas seal <i>E. Pereira, B.M Alkali and O. Niculita</i></p> <p>Insight into cost of defective state using delay-time concept <i>A. C. J. Santos, C.A.V. Cavalcante</i></p>	
14:50-15:00	Closing remarks	