

IEEE International Conference on Prognostics and Health Management
(PHM2022). June 6-8, 2022

Monday 6/6/2022 Eastern Daylight Time	Tutorials & Panel, Day 1, Part 1	Monday 6/6/2022 China Standard Time
	All papers, tutorials, keynote sessions will be held in Metro 1 (3rd floor) Lunches are in Metro 2 (3rd floor) Banquet in Salon 2 (1st floor)	
7:45-8:00 AM	Opening by Dr. Jason Rupe	7:45-8:00 PM
8:00-9:00 AM	Tutorial 1 Dr. Matthew Hu Title: Robustness Thinking in Design for Reliability – A Best Practice in Design for Reliability Moderator: Dr. Jason Rupe	8:00-9:00 PM
9:00-10:00 AM	Keynote 1 Dr. Diego Galar Title: Cognitive Digital Twins and Self preservation - The cognition in maintenance through death awareness capabilities Moderator: Dr. Jason Rupe	9:00-10:00 PM
10:00-10:20 AM	Break	10:00-10:20 PM
10:20-11:20 AM	Tutorial 2 Mr. Lou Gullo Title: IEEE Standards to Enable PHM System Design and Implementation Moderator: Dr. Christian Hansen	10:20-11:20 PM
11:20 AM -12:20 PM	Panel Mr. Leopoldo Mayoral, Mr. Rex Sallade, Mr. Lou Gullo, Mr. Brad Cline Title: PHM Standards Panel Organizer and Moderator: Mr. Lou Gullo, IEEE RS VP of Technical Activities (TA) and the Chair of the IEEE Reliability Society Standards Committee (IEEE RS SC).	11:20PM - 12:20 AM
12:20-1:30 PM	Break	12:20-1:30 AM
Monday 6/6/2022 Eastern Daylight Time	Regular Papers, Day 1, Part 2	Tuesday 6/7/2022 China Standard Time
1:30-3:00 PM	Prognostic & Diagnostic Models Moderator: Dr. Farnoosh Naderkhani	1:30-3:00 AM
	20: Multilevel DiscreteWavelet Transform and Deep Neural Networks for Predicting Remaining Useful Life of a Machine Asset	
	30: A Framework for Generating Large Data Sets for Fatigue Damage Prognostic Problems	
	21: Dynamic Maintenance of Continuously Monitored Parallel Systems	
	22: Reinforcement Learning based on Stochastic Dynamic Programming for Condition-based Maintenance of Deteriorating Production Processes	
	14:Visibility Graphs, Persistent Homology, and Rolling Element Bearing Fault Detection	
3:00-4:30 PM	Prognostic & Diagnostic Models Moderator: Dr. Jason Rupe	3:00-4:30 AM
	39: Identification of vehicle response features for onboard diagnosis of vehicle running instability	
	19: On the Number of Bounded Renewals in Two-Units Systems with Critical Components	
	24: Condition-based-Events Life Curve: Conceptual View to Support Fault Management of Complex Systems of Overlapped, Distributed Events	
	1: Gradient Harmonized Loss: Improving the Performance of Intelligent Diagnosis Models in Large Imbalance Scenarios	
4:30-4:45 PM	Break	
4:45-6:00 PM	Aircraft, Materials and Controls Models Moderator: Dr. Steven Li	4:00-6:00 AM
	41: Sensitivity Study of Mini-Batch Size on a Long Short-Term Memory Network for In-situ Sensing of Core-to-shell Ratio of Microencapsulated Phase Change Materials	
	4: Investigating the Effect of Event-triggered Control and Nonlinear Actuator Dynamics on Spacecraft Attitude Stabilization	
	18: A technological demonstrator for the application of PHM techniques to electro-mechanical flight control actuators	
	5: Fault-tolerant Consensus Control for Hybrid Multi-agent Systems	
6:00-7:00 PM	Social Networking	

Regular Papers, Day 2, Part 1		
Tuesday 6/7/2022 Eastern Daylight Time		Tuesday 6/7/2022 China Standard Time
7:00-8:30 AM	Prognostic & Diagnostic Models Moderator: Dr. Steven Li	7:00-8:30 PM
	6: A Novel Fault Diagnosis Method Based on Semisupervised Contrast Learning	
	29: An Integration of Spectrum Analysis and Attention-based Network for Condition Monitoring of Vibration Components	
	9: Using UTAUT, TTF, and PR integrating model to evaluate employees' acceptance and behavioral intention of PHM-based system in the military industry	
	13: Health Performance Interval Prediction Of Pumped Storage Unit Based On Multi-Objective Optimization	
8:30-8:45 AM	Break	
8:45-10:30 AM	Prognostic & Diagnostic Models Moderator: Dr. Guanyu Piao	8:45-10:30 PM
	31: Lifelong Learning for Bearing Fault Diagnosis with Incremental Fault Types	
	32: Obvious Decision Boundary based Open Set Recognition for Industrial Equipment Fault	
	36: Imbalanced fault diagnosis of rolling bearing using a deep gradient improved generative adversarial network	
	37: A Deep Ensemble Learning Model for Rolling Bearing Fault Diagnosis	
10:30-10:45 AM	Break	
Tuesday 6/7/2022 Eastern Daylight Time	Keynotes & Panel	Tuesday & Wednesday 6/7/22- 6/8/2022 China Standard Time
10:45-11:45 AM	Tutorial 3 Dr. Diego Galar Title: Prognostics and Remaining Useful Life (RUL) Estimation: Predicting with Confidence (2022) Moderator: Dr. Christian Hansen	10:45-11:45 PM
11:45AM-12:45 PM	Keynote 2 Dr. Judy Jin Title: Data Fusion Research Opportunities and Challenges in PHM Moderator: Dr. Christian Hansen	11:45-12:45 PM
12:45-2:00 PM	Break	11:45 PM-12:45
2:00-3:00 PM	Panel Drs. Brian Murray, Raja Ramakrishnan, Shanelle Foster. Title: Fail-safe and fault tolerant designs: Methodologies and examples in transportation Panel Organizer and Moderator: Dr. Bruno Lequesne, E-Motors Consulting, and IEEE TEC Chair	
3:00-6:00 PM	Break	2:00-3:00AM
6:00 PM	Banquet	

Regular Papers, Day 3, Part 1		
Wednesday 6/8/2022 Eastern Daylight Time	Aircraft, Materials and Control Models Moderator: Dr. Steven Li	Wednesday 6/8/2022 China Standard Time
7:00-8:00 AM	11: Research on monitoring alarm and localization of weights loading on composite materials 33: Research on composite impact localization by MUSIC based guided wave monitoring 38: Experimental method based on guided wave for ablation monitoring of C/C thermal protection structures 46: Transfer Learning-based SAE-CNN for Industrial Data Processing in Multiple working Conditions Recognition	7:00-8:00 PM
8:00-9:30 AM	Prognostic & Diagnostic Models Moderator: Dr. Christian Hansen 35: A Multiple VAEs-based Information Fusion Framework With Mutual-KL Loss for Intelligent Fault Diagnosis and Toward OoD Detection 12: Low dimensional synthetic data generation for improving data driven prognostic models 40: Research on Fault Diagnosis of Nuclear Gate Valve Based on Analysis of Energy Variation Characteristics of Vibration Signal 42: An Enhanced Sparse Filtering Fusion Method for Bearing Fault Diagnosis 26: Multi-mode signals driven damage detection for composite structures by ensemble generalized multiclass support vector machine	8:-9:30 PM
9:30-10:00 AM	Break	
Wednesday 6/8/2022 Eastern Daylight Time	Tutorials, Day 3, Part 2	Wednesday & Thursday 6/8/2022- 6/9/22 China Standard Time
10:00-11:00 AM	Tutorial 4 Dr. Murat Yildirim Title: Harnessing Sensor Data for Condition Based Maintenance and Operations in Energy Systems Moderator: Dr. Farnoosh Naderkhani	10:00-11:00PM
11:00AM-12:00 PM	Tutorial 5 Dr. Chao Hu Title: Physics-informed machine learning for battery prognostics – challenges, data acquisition, and methodologies Moderator: Dr. Farnoosh Naderkhani	11:00PM-12:00AM
12:00 - 1:00 PM	Break	
1:00-2:00 PM	Tutorial 6 Brad Cline and Mike Hudman Title: Digital Twin for PHM Moderator: Dr. Guanyu Piao	1:00-2:00AM
2:00 PM	Closing Cermony	