

IEEE International Conference on Prognostics and Health Management (PHM2021)

Zoom
June 7-10, 2021
Final Program
20210525

Monday 6/7/2021 Eastern Daylight Time	Tutorials, Day 1, Part 1	Monday 6/7/2021 China Standard Time	Monday 6/7/2021 Central European Summer Time
	Zoom Link		
8:30-8:45 AM	Conference Opening Dr. Steven Li Conference Planning Committee	8:30-8:45 PM	2:30-2:45 PM
8:45-9:45 AM	Keynote 1 Dr. Steven W. Holland Automotive PHM & the Role for Health-Ready Components Moderator: Dr. Steven Li	8:45-9:45 PM	2:45-3:45 PM
9:45-10:00 AM	Break	9:45-10:00 PM	3:45 PM - 4:00 PM
10:00-11:00 AM	Tutorial 1 Dr. Chao Hu Introduction to Battery Prognostics and Early Life Prediction Moderator: Jason Rupe, Ph.D.	10:00-11:00 PM	4:00-5:00 PM
11:00-11:15 AM	Break	11:00-11:15 PM	5:00 PM - 5:15 PM
11:15 AM - 12:15 PM	Tutorial 2 Jason Rupe, Ph.D. PHM in the Future of Communications Networks Moderator: Dr. Christian Hansen	11:15 PM - 12:15 AM	5:15-6:15 PM
12:15-6:00 PM	Break	12:15-6:00 AM	6:15 PM - 12:00 AM
Monday 6/7/2021 Eastern Daylight Time	Tutorials, Day 1, Part 2	Tuesday 6/8/2021 China Standard Time	Tuesday 6/8/2021 Central European Summer Time
6:00-7:00 PM	Tutorial 3 Dr. Portia Banerjee In-Time Safety Assessment & Risk Prediction for Unmanned Aerial Systems Moderator: Dr. Steven Li	6:00-7:00 AM	12:00-1:00 AM
7:00-7:30 PM	Break	7:00-7:30 AM	1:00-1:30 AM
7:30-8:30 PM	Tutorial 4 Dr. Yanshuo Wang Applied Wavelet Transform in Prognostics and Health Management Moderator: Dr. Farnoosh Naderkhani	7:30-8:30 AM	1:30-2:30 AM

Tuesday 6/8/2021 Eastern Daylight Time	Regular Papers, Day 2, Part 1	Regular Papers, Day 2, Part 1	Tuesday 6/8/2021 China Standard Time	Tuesday 6/9/2021 Central European Summer Time
	Zoom Link	Zoom Link		
9:30-10:30 AM	Keynote 2 Sangwon Yoon, Ph.D Digital Transformation using Artificial Intelligence/Machine Learning in Electronics Manufacturing Moderator: Jason Rupe, Ph.D.		9:30-10:30 PM	3:30-4:30 PM
10:30-11:00 AM	Break	Break	10:30-11:00 PM	4:30 PM - 5:00 PM
11:00 AM - 12:50 PM	Prediction Models 1 Moderator: Jason Rupe, Ph.D., Dr. Jian Guo	Batteries & Power Moderator: Dr. Steven Li, Hung Nguyen	11:00 PM - 12:50 AM	5:00-6:50 PM
	2: Temporal Convolutional Network Based Regression Approach for Estimation of Remaining Useful Life	21: Digital Twin for Degradation Parameters Identification of DC-DC Converters Based on Bayesian Optimization		
	16: A Hybrid Bayesian Deep Learning Model for Remaining Useful Life Prognostics and Uncertainty Quantification	30: Real Time Ultrasonic Monitoring of Solid-State Lithium-Ion Cells in the Frequency Domain		
	26: A novel deep soft clustering for unsupervised univariate time series	40: A Multiscale Entropy-Based Long Short Term Memory Model for Lithium-Ion Battery Prognostics		
	48: Combining Approaches of Brownian Motion and Similarity Principle to Improve the Remaining Useful Life Prediction	51: Particle Filtering framework for Health Monitoring of Lithium-Ion Batteries using Ampere-hour Throughput based Semi-Empirical Model		
		53: Gaussian Process Regression based State of Health Estimation of Lithium-Ion Batteries using Indirect Battery Health Indicators		
12:50-1:00 PM	Break	Break	12:50-1:00 AM	6:50-7:00 PM
1:00-2:30 PM	Planning and Maintenance Moderator: Dr. Yiming Deng, Preeti Chauhan, Ph.D.		1:00-2:30 AM	7:00-8:30 PM
	3: A Maintenance Cost Optimization Strategy Based on Prognostics and Health Monitoring Information			
	15: Operating room planning with multiple downstream units			
	66: A Dynamic Programming Approach for Multistage Reliability Growth Planning Considering Time and New			
	67: Comparison of Two Maintenance Policies for the Coordination of Decisions of Quality Control and			
2:30-6:00 PM	Break	Break	2:30-6:00 AM	8:30 PM - 12:00 AM
Tuesday 6/8/2021 Eastern Daylight Time	Regular Papers, Day 2, Part 2	Regular Papers, Day 2, Part 2	Wednesday 6/9/2021 China Standard Time	Wednesday 6/9/2021 Central European Summer Time
2:30-6:00 PM	Break	Break	2:30-6:00 AM	8:30 PM - 12:00 AM
6:00-8:10 PM	General Hardware Moderator: Alireza Khalilabad, Dr. Qiang Miao	Networks Moderator: Dr. Christian Hansen, Jason Rupe, Ph.D.	6:00-8:10 AM	12:00-2:10 AM
	5: Research on Residual Life Prediction of Joint Rotating Structure with Multiple Failure Coupling	11: Sensing Technologies and Artificial Intelligence for Subsea Power Cable Asset Management		
	25: Tool Wear Prediction Under Varying Milling Conditions via Temporal Convolutional Network and Auxiliary Learning	22: A Smart Agricultural Monitoring System Based on Cloud Platform of Internet of Things		
	42: Tool Fault Diagnosis Based on Improved Multiscale Network and Feature Fusion	31: Fault Prognosis of Satellite Reaction Wheels Using A Two-Step LSTM Network		
	44: Identification and Analysis of Tool Wear Signal in CNC Machine Tool Based on Chaos Method			
	56: Application of Deep CNN-LSTM Network to Gear Fault Diagnostics			
60: A Hybrid F-G-D Approach for Reliability Risk Assessment of Surgical Robots				
8:10-8:30 PM	Break	Break	8:10-8:30 AM	2:10-2:30 AM
8:30-10:00 PM	Prediction Models 2 Moderator: Dr. Farnoosh Naderkhani, Dr. Rui Zhao		8:30-10:00 AM	2:30-4:00 AM
	33: Leveraging Big Data to Discover High Yield Prognostics Applications			
	50: A remain useful life prediction framework based on residual networks and a novel loss function			
	59: OPELRUL: Optimally Weighted Ensemble Learner for Remaining Useful Life Prediction			
	61: Remain Useful life Estimation of Turbofan Engine Using Quasi-RNN Neural Networks			
10:00 PM - 9:30 AM	Break	Break	10:00 AM - 9:30 PM	4:00 AM - 3:30 PM

Wednesday 6/9/2021 Eastern Daylight Time	Regular Papers, Day 3, Part 1	Regular Papers, Day 3, Part 1	Wednesday 6/9/2021 China Standard Time	Wednesday 6/9/2021 Central European Summer Time
	Zoom Link	Zoom Link		
9:30-10:30 AM	Keynote 3 Jeffrey Voas, Ph.D. Trusting A Digital Twin? Moderator: Dr. Steven Li		9:30-10:30 PM	3:30-4:30 PM
10:30-11:00 AM	Break	Break	10:30 PM - 11:00 PM	4:30 PM - 5:00 PM
11:00 AM - 1:10 PM	Inspection & Sensors Dr. Guanyu Piao Moderator: Dr. Jian Guo, Preeti Chauhan, Ph.D.	Aircraft Moderator: Alireza Khalilabad, Dr. Yiming Deng	11:00 PM -1:10 AM	5:00-7:10 PM
	12: Object Detection using Deep Learning in a Manufacturing Plant to Improve Manual Inspection	27: An Aero-engine Gas Path Fault Diagnosis Method Based on OPABC-BP		
	13: 3D objects descriptors method for fault detection in a multi sensors context	28: Remaining Useful Life Prediction Based on Multi-scale Residual Convolutional Network for Aero-engine		
	23: Simultaneous Actuator and Sensor Faults Estimation for Aircraft Using a Jump-Markov Regularized Particle Filter	29: An Aero-engine Gas Path Fault Feature Extraction Method Based on IGA-KPCA		
	41: Source localization using beamforming and double L-shape sensors arrays	39: GE Aviation Use-case - Apache Spark for Analytics		
	54: Guided visual inspection enabled by AI-based detection models	43: Automated Machine Learning for Remaining Useful Life Estimation of Aircraft Engines		
58: Remaining Useful Life Prediction of Aircraft Engines Using Hybrid Model Based on Artificial Intelligence Techniques				
1:10-1:30 PM	Break	Break	1:10-1:30 AM	7:10 PM - 7:30 PM
1:30-2:20 PM	General Moderator: Dr. Christian Hansen, Preeti Chauhan Ph.D.		1:30-2:20 AM	7:30-8:20 PM
	37: A Local Mahalanobis Distance Analysis Based Methodology for Incipient Fault Diagnosis 55: Comparison of Agent Deployment Strategies for Collaborative Prognosis			
2:20-6:00 PM	Break	Break	2:20-6:00 AM	8:20 PM - 12:00 AM
Wednesday 6/9/2021 Eastern Daylight Time	Regular Papers, Day 3, Part 2	Regular Papers, Day 3, Part 2	Thursday 6/10/2021 China Standard Time	Thursday 6/10/2021 Central European Summer Time
2:20-6:00 PM	Break	Break	2:20-6:00 AM	8:20 PM - 12:00 AM
6:00-7:50 PM	Bearings Moderator: Alireza Khalilabad, Dr. Qiang Miao		6:00-7:50 AM	12:00-1:10 AM
	10: Exploration and Effect Analysis of Improvement in Convolution Neural Network for Bearing Fault Diagnosis			
	19: An improved CNN based on attention mechanism with multi-domain feature fusion for bearing fault diagnosis			
	24: Unsupervised Domain Adaptation for Bearing Fault Diagnosis Considering the Decision Boundaries			
	36: A Novel Intelligent Diagnosis Method for Bearing Based on Fused-feature Images			
65: GAN-based LSTM Predictor for Failure Prognostics of Rolling Element Bearings				
7:50 - 8:00 PM	Break	Break	7:50 - 8:00 AM	1:50-2:00 AM
8:00-9:30 PM	Systems Moderator: Dr. Farnoosh Naderkhani, Dr. Rui Zhao		8:00-9:30 AM	2:00-3:30 AM
	4: An Optimized Support Vector Regression for Identification of In-phase Faults in Control Moment Gyroscope Assembly			
	14: Automated Dynamic Safety Evaluation of Generic Fail-Operational Mechatronic Systems			
	18: Prognostics and Health Management of Wafer Chemical-Mechanical Polishing System using Unsupervised Deep Learning			
68: Comparison of an Automatic Classification of Partial Discharge Patterns for Large Hydrogenerator				
9:30-9:50 PM	Conference Closing Ceremony Dr. Steven Li Conference Planning Committee Moderator: Alireza Khalilabad, Dr. Rui Zhao		9:30-9:50 AM	3:30-3:50 AM