APARM Special Session VII

Special Session Basic Information:

Session Title	Reliability Modeling and Maintenance Optimization for Stochastic Industrial Systems

Introduction and topics

This special session focuses on reliability modeling and maintenance optimization for stochastic industrial systems subject to uncertainty, degradation, and operational disruptions. Modern industrial assets operate in complex and dynamic environments where failures are driven by inner stochastic deterioration processes, and eternal environment. Recent advances in probabilistic modeling, data-driven prognostics, and sequential decision-making enable more reliable and cost-effective maintenance and operational strategies. The session aims to bring together researchers and practitioners to discuss new models, algorithms, and applications that improve system reliability, safety, and resilience.

Topics of interest include (but are not limited to):

1. System Reliability Modeling and Analysis
2. Maintenance Optimization and Risk-Aware Decision-Making
3. Industrial Applications: Data-Informed Reliability and Maintenance

Special Session Chair(s):

Name	Juan Yin
Prefix	Dr.
Department	School of Management
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Organizer's Brief Biography

Juan now is a lecturer at the School of Management, Guangdong University of Technology. She received his Ph.D. in Management Science and Engineering from Beijing Institute of Technology and was a visiting student at McMaster University (2021-2022) supported by CSC. She later conducted postdoctoral research at the National University of Singapore (2023-2025). Her research focuses on system reliability modeling, maintenance decision-making and optimization. She has published nine journal papers as the first or corresponding author in journals including Naval Research Logistics, IEEE Transactions on Reliability, and Reliability Engineering & System Safety, etc.