

**The 13th International Conference on Quality, Reliability, Risk, Maintenance, and Safety Engineering  
(QR2MSE 2023)  
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**Special Session: Reliability and Maintenance Modeling and  
Optimization of Multi-state Systems**

With the increasing complexity of industrial systems, the multi-state systems widely exist in various fields, such as smart grid, communication infrastructure, high-performance computing systems, and so on. These systems play an important role in the country, and they will cause serious economic and social problems once they fail. Therefore, it is necessary to study the reliability of these systems and formulate corresponding maintenance strategies.

In order to further improve the methods of reliability and maintenance modeling and optimization, this special session aims to discuss recent advances in high-reliability techniques. The list of topics includes, but is not limited to:

- Defense of multi-state systems
- Condition based maintenance
- Preventive maintenance
- Corrective maintenance
- Multi-state system reliability modeling
- Optimization of multi-state systems
- Performance sharing of multi-state systems
- Applications of multi-state systems in real engineering systems
- Simulation of multi-state systems
- Maintenance planning for multi-state systems

**Chair: Kunxiang Yi, Hunan University of Technology and Business, China**

Kunxiang Yi received the Ph.D. degree in school of statistics from the Southwestern University of Finance and Economics in 2021. He is currently an associate professor in school of business administration, Hunan University of Technology and Business. He has multiple published or accepted papers in journals, such as Naval Research Logistics, IEEE Transactions on Reliability, Reliability Engineering and System Safety and Computers & Industrial Engineering. His current research interests include multi-state system reliability modeling and optimization. (E-Mail: [yikunxiang@hutb.edu.cn](mailto:yikunxiang@hutb.edu.cn))

**Chair: Hui Xiao, Southwestern University of Finance and Economics, China**

Hui Xiao received his Ph.D. degree in ISE department from National University of Singapore. He is currently a professor in the School of Management Science and Engineering, Southwestern University of Finance and Economics. His main research interests include simulation optimization, reliability and maintenance modeling and optimization, risk management. He has more than 50 papers in journals such as Automatica, IEEE Transactions on Automatic Control, IIEE Transactions, and IEEE Transactions on Reliability. He is the associate editor of the Asia Pacific Journal of Operational Research and Journal of Simulation. (E-Mail: [msxh@swufe.edu.cn](mailto:msxh@swufe.edu.cn))