The 14th International Conference on Quality, Reliability, Risk, Maintenance, and Safety Engineering (QR2MSE2024)

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Special Session: Reliability Analysis and Maintenance Management of Engineered Systems

With the increasing complexity and integration of engineered systems, ensuring their reliability and optimal maintenance strategies has become paramount. However, the growing integration of components and the advancement of technologies poses significant challenges to the reliability and longevity of these systems.

Reliability is the most important and widely adopted metric of system performance, which demonstrates the inherent system performance by design and manufacture. While reliability has shown improvement across almost all types of engineered systems over the years, there are still certain limitations, such as lack of comprehensive failure data, integration of multiple reliability metrics, and demand for advanced modeling techniques to capture the complex interactions. Maintenance management significantly impact the system performance during operation or after failures. Investigation to seek for the optimal maintenance policies is crucial for balancing the system performance, asset longevity, resource allocation, and cost efficiency.

Therefore, this special Session aims to present research on the **Reliability Analysis and Maintenance Management of Engineered Systems**. The special session focuses on the reliability and maintenance issues of engineered systems, including power system (such as generation, distribution system, etc.), infrastructure system (such as highways, pipelines, etc.), offshore systems (such as wind turbines, oil and gas platforms, etc.), subsea systems (such as Christmas tree, subsea pumps, etc.), and other types of system. Topics of interest include, but are not limited to, reliability design, Design for Six Sigma (DFSS), Robust Design, reliability prediction, degradation modeling, failure analysis, maintenance planning, maintenance optimization, and Total Quality Management (TQM). Other related topics are also welcome.

Associate Prof. Aibo Zhang

University of Science and Technology Beijing, Beijing, China

Email: aibozhang@ustb.edu.cn

Dr. Yixin Zhao

China University of Petroleum (East China), Qingdao, China

Email: lyixinzhao@126.com