2026 10th International Conference on RELIABILITY ENGINEERING

Hangzhou, China July 19-21, 2026

ICRE RELIABILITY ENGINEERING

# Special Session 18

# Complex Systems Engineering and Equipment Safety Assurance

## Goal

This special session focuses on cutting-edge research directions in complex systems engineering and equipment safety assurance. In response to the evolution of complex systems toward intelligence, networking, and high integration, and addressing the exponentially growing system scale and interaction complexity, this session challenges traditional reliability analysis methods. It explores new domains such as multi-domain coupling, human-machine collaboration, and dynamic evolution in complex systems, covering design optimization, operation control, as well as safety and reliability of complex engineering systems.

As safety risks associated with modern equipment system failures and operational malfunctions continue to escalate, equipment stability and operational resilience have become core research hotspots in the field. This session aims to bring together experts and scholars from domestic and international communities to exchange key technical achievements in systems engineering theory, intelligent control technologies, fault diagnosis, safety protection, and reliability assessment. Furthermore, the session will discuss optimization schemes and innovative applications for the safe operation of complex systems, and share the latest theoretical research, engineering practices, and technology deployment case studies.

We warmly welcome submissions of original research papers and cutting-edge findings in related areas, and seek to jointly promote technological innovation and academic advancement in the field of complex system safety assurance and reliable operation.

## Topics

Topics of interest include, but are not limited to:

- Complex system reliability modeling and analysis methods.
- Risk and resilience engineering in equipment safety assurance.
- Big data and AI-driven prognostics and health management (PHM) for complex systems.
- Reliability and safety assessment of multi-domain collaborative systems (e.g., manned-unmanned teaming, cross-platform interoperability).
- Lifecycle equipment support system and strategies for continuous airworthiness / mission readiness improvement.
- .....

## Chairs

Qingwei Liang, Northwestern Polytechnical University, China

## Publication

We provide a good opportunity by presenting your updated research knowledge and also by publishing it in the conference proceedings. submitted paper will be peer reviewed by conference committees, and accepted papers will be included into conference proceedings which will be indexed by SCOPUS and Ei compendex.

## Submission

1. Full paper (presentation and publication)
- The paper must be written in English.
- All submissions will undergo a peer-review process by the conference committee.
- The paper should be at least FIVE pages including all figures, tables, and references.
- The paper should be submitted as a PDF document in .pdf format.
- submitted paper must be unpublished.
- Accepted papers will be invited for oral presentation or poster presentation and will be included in the conference proceedings.

2. Abstract (presentation only)
- Abstracts will be considered for presentation (oral/poster) only without publication.
- The abstract must be written in English.
- Abstracts should be no more than 300 words and clearly outline the title, purpose, methods, and outcomes of the research or practice being described.
- All submissions will undergo a peer-review process by the conference committee.

* Welcome to submit the paper or abstract by Electronic submission system: https://www.zmeeting.org/submission/icre2026
More details about submission, please visit at: https://www.icre.org/sub.html

## Conference Program

July 19, 2026 I CONFERENCE + SHORT COURSE
July 20, 2026 I TECHNICAL EXCELLENCE & TRIBUTE
July 21, 2026 I INNOVATION & FUTURE OUTLOOK
July 12-25, 2026 I Young Scholar Symposium + 2026 Beihang International Summer School

## Conference Venue

Conference Venue:
Hangzhou International Innovation Institute of Beihang University
Address:
No. 166, Shuanghongqiao Street, Pingyao Town, Yuhang District, Hangzhou City

### *Hangzhou, China*

Hangzhou, a renowned Jiangnan city blending millennia of heritage and poetic scenery, boasts three world cultural heritage sites. west Lake ripples with romance; Liangzhu Ruins hold ancient wisdom; the Grand canal carries folk vibes. Timeless song Dynasty elegance meets trendy fun, and delicious local cuisine delights the taste buds. A perfect mix of classic and modern, it awaits visitors from all over the world.

## Important Dates

Submission Deadline: May 15, 2026
Notification Deadline: June 10, 2026
Camera-ready Date: June 25, 2026

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哈爾濱工業大學 HARBIN INSTITUTE OF TECHNOLOGY

Contact conference secretary: Ms. Lesley
Email: icre_conf@outlook.com
web: http://www.icre.org

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# 特别专题 18

# 复杂系统工程与装备安全保障

## 专题目标 »»»»

本专题聚焦复杂系统工程与装备安全保障前沿研究方向，围绕复杂系统向智能化、网络化及高集成度的发展方向，针对系统规模与交互复杂度呈指数级增长的需求，挑战传统的可靠性分析方法，围绕复杂系统多域耦合、人机协同、动态演化等新领域，对复杂工程系统的设计优化、运行管控与安全可靠性展开探讨。随着现代装备系统失效、运行故障等安全风险持续凸显，装备稳定性与运行韧性已成为行业核心研究热点。本专题旨在汇聚国内外相关领域专家学者，交流系统工程理论、智能管控技术、故障诊断、安全防护及可靠性评估等关键技术成果。同时探讨复杂系统安全运行的优化方案与创新应用，分享最新理论研究、工程实践与技术落地案例。热忱欢迎相关方向原创论文与前沿研究成果投稿，共同推动复杂系统安全保障与可靠运维领域的技术创新与学术发展。

## 专题主题 »»»»

征稿主题包括但不限于：

- 复杂系统可靠性建模与分析方法。
- 装备安全保障中的风险与韧性工程。
- 大数据与人工智能驱动的故障预测与健康管理（PHM）在复杂系统中的应用。
- 多域协同系统（如有人-无人编组、跨平台互操作）的可靠性与安全性评估。
- 全生命周期装备保障体系与持续适航/任务就绪度提升策略
- ……

## 专题主席»»»»

梁卫庆，西北工业大学，中国

## 会议出版 »»»»

录用文章将被收录至ICRE 2026会议论文集，由IEEE出版，并被EI Compendex 和 Scopus 检索。

## 投稿方式 »»»»

1). 上传文章到电子投稿系统: https://www.zmeeting.org/submission/icre2026
2). 或发送文章至会议邮箱: icre_conf@outlook.com
提示:
1. 全文投稿（含报告与出版）
- 稿件须以英文撰写。
- 所有投稿均由会议委员会进行同行评审。
- 稿件篇幅不少于 5 页，包含所有图表及参考文献。
- 稿件须以 PDF 格式提交。
- 投稿稿件须为未发表的原创成果。
- 录用稿件将受邀进行口头报告或海报展示，并收录至会议论文集。
2. 摘要投稿（仅作报告）
- 摘要仅用于申请报告资格（口头报告 / 海报展示），不纳入出版范围。
- 摘要须以英文撰写。
- 摘要字数不超过 300 词，须清晰阐明所涉研究或实践的标题、研究目的、研究方法及研究成果。
- 所有投稿均由会议委员会进行同行评审。
• 详细信息请见----https://icre.org/sub.html

## 会议日程 »»»»

2026年7月19日- 签到注册
2026年7月20日- 开幕式+主旨报告+作者报告
2026年7月21日- 开幕式+主旨报告+作者报告
2026年7月12-25日- 青年学者论坛 + 2026北航国际暑期学校

## 会议地址 »»»»

杭州市北京航空航天大学国际创新研究院（北京航空航天大学国际创新学院）

地址：杭州市余杭区瓶窑镇双红桥街166号

### *中国杭州*

杭州，一座融千年文脉与诗画风光的江南名城，三大世界文化遗产勾勒其独特魅力。西湖碧波漾诗意，良渚遗址藏远古智慧，大运河流淌南北烟火。宋韵风雅浸润红墙古社，新潮玩法解锁别样体验，鲜醇杭帮菜抚慰味蕾。古典与现代交织，漫步街巷皆是惊喜，正静待八方游客前来探寻。

## 重要日期 »»»»

投稿截止日期：2026年5月15日
审稿通知日期：2026年6月10日
注册截止日期：2026年6月25日

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Email: icre_conf@outlook.com
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