

# 2026 10<sup>th</sup> International Conference on RELIABILITY ENGINEERING

Hangzhou, China July 19-21, 2026

## Special Session 22

### Reliable Fault Diagnosis and Safety Fault-Tolerant Control for Complex Systems

#### Goal >>>>

Modern industrial systems, including aerospace equipment, intelligent manufacturing systems, energy systems, transportation platforms, and autonomous vehicles, are becoming increasingly complex, integrated, and data-intensive. Under complicated operating conditions and uncertain environments, these systems often face strong nonlinearities, multi-source disturbances, component degradations, and fault propagation behaviors, which significantly challenge system reliability, operational safety, and maintenance efficiency. Therefore, reliable fault diagnosis and safety fault-tolerant control technologies have become critical research directions for ensuring the safe and stable operation of complex engineering systems.

This special session aims to provide an international forum for researchers and engineers to present recent advances, emerging methodologies, and practical applications in the fields of fault diagnosis, health monitoring, reliability assessment, and fault-tolerant control for complex systems. Both theoretical developments and industrial applications are highly encouraged. The session particularly welcomes interdisciplinary studies integrating artificial intelligence, data-driven modeling, digital twins, physics-informed learning, uncertainty quantification, and intelligent decision-making techniques for enhancing system reliability and safety.

#### Topics >>>>

Topics of interest include, but are not limited to:

- Fault diagnosis and prognosis for complex systems
- Intelligent fault detection and isolation
- Safety fault-tolerant control and resilient control systems
- Reliability analysis and reliability-oriented design
- Physics-informed machine learning for reliability engineering
- Remaining useful life prediction and predictive maintenance
- Reliability and safety of aerospace and transportation systems
- .....

#### Chairs >>>>



Ningyun Lu, Nanjing University of Aeronautics and Astronautics, China



Leiming Ma, Nanjing University of Aeronautics and Astronautics, 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.zmmeeting.org/submission/icre2026>

More details about submission, please visit at: <https://www.icre.org/sub.html>

#### Conference Program >>>>

July 19, 2026 | CONFERENCE + SHORT COURSE

July 20, 2026 | TECHNICAL EXCELLENCE & TRIBUTE

July 21, 2026 | INNOVATION & FUTURE OUTLOOK

July 12-25, 2026 | 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 (Final Call): June 10, 2026

Notification Deadline: June 25, 2026

Camera-ready Date: June 30, 2026



Technical Support



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HARBIN INSTITUTE OF TECHNOLOGY

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## 特别专题 22

### 复杂系统的可靠故障诊断与安全容错控制

#### 专题目标 >>>>

现代工业系统，涵盖航空航天装备、智能制造系统、能源系统、交通平台及自动驾驶车辆，正愈发趋于复杂化、集成化与数据密集化。在复杂运行工况和不确定环境下，这类系统普遍存在强非线性、多源扰动、部件性能退化及故障传播特性，对系统可靠性、运行安全性与维护效率带来极大挑战。因此，可靠故障诊断与安全容错控制技术，已成为保障复杂工程系统安全稳定运行的核心研究方向。本专题旨在为科研学者与工程技术人员搭建国际交流平台，展示复杂系统在故障诊断、健康监测、可靠性评估、容错控制方向的最新研究进展、新型方法及工程实际应用。专题热忱接收理论创新成果与工业应用研究，尤其鼓励融合人工智能、数据驱动建模、数字孪生、物理信息学习、不确定性量化、智能决策技术的交叉学科研究，以提升系统可靠性与运行安全性。

#### 专题主题 >>>>

征稿主题包括但不限于：

- 复杂系统故障诊断与健康预测
- 智能故障检测与隔离
- 安全容错控制与韧性控制系统
- 可靠性分析与面向可靠性的设计
- 面向可靠性工程的物理信息机器学习
- 剩余使用寿命预测与预测性维护
- 航空航天与交通系统的可靠性及安全性
- 人工智能在可靠性工程与故障诊断中的应用
- 智能维护与决策支持系统

#### 专题主席 >>>>



陆宁云，南京航空航天大学，中国



马磊明，南京航空航天大学，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](mailto: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新果。
  - 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、研究方法及其研究成果。
  - 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（最后一轮征稿）：2026年6月10日  
审稿通知日期：2026年6月25日  
注册截止日期：2026年6月30日

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