



Special session

## Risk, Reliability and Resilience of Complex Systems

### ORGANIZERS:

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### DESCRIPTION

We are increasingly building engineered systems that, because of their inherent complexity, makes it extremely difficult to make well-informed decisions about strategies to improve their safety and resilience. This complexity arises from the interaction between the social, information and physical environments.

This session focuses on risk, reliability and resilience-related problems where the system complexity is explicitly considered and therefore, it conditions the problem approach.

### MOTIVATION

The behaviour of complex systems, such as the system of systems and complex adaptive systems, is intrinsically difficult to model due to the dependencies, relationships, or other types of interactions between their parts or between a given system and its environment, which might change over time. As a result, it is difficult to foresee how they will evolve under intended or unintended changes in the environment. An adequate understanding and modelling of the complex systems enable a more accurate assessment of risk, reliability and resilience along with the identification of the optimal strategies to improve their preparation, response and recovery to those changes.

### OBJECTIVES:

This session will provide a platform for the researchers in the fields of risk, reliability and resilience of complex systems to present their recent advancements and exchange their ideas. Some of the topics discussed in this session are:

- Approaches to studying and describing complex behaviour
- Mathematical modelling of complex systems
- Case studies exhibiting complex behaviours, such as evolutionary development, emergence and lack of correspondence between cause-effect in time or space.
- Assessment of risk, reliability and resilience of complex systems

For more information about the conference, including the submission procedure and important dates, please visit the conference website at: <https://icasp14.com/>