MATHEMATICAL ASPECTS OF EMERGING RISKS

The Scientific Committee will award up to two Best Papers in the subject area

Mathematical Aspects of Emerging Risks.

Experienced risk managers know that the reason for the next crisis will probably be a risk they cannot even imagine today. Therefore, insurers and reinsurers are increasingly aware of the need to pay attention to emerging risks, coming from changes and developments in areas such as technology, politics and climate, or implied by a situation of financial distress.
In addition to not knowing how those risks will unfold, modeling and quantifying them is a particular challenge, too. Complex interdependencies of risks, non-linear behavior and the absence of large numbers require much more than plain vanilla statistical methods. Moreover, historic data upon which to base assumptions or to fit distributions is a scarce resource. Hence, this is not a task that actuaries can solve by themselves – interdisciplinary collaboration is required to combine subject matter expertise and mathematical as well as modelling skills.

To support the industry in pursuing that important topic, we ask for the submission of papers that address the mathematical aspects of emerging risks and their application to insurance.

Particular subjects of interest can be (but are not limited to):

- Mathematical and statistical methods to describe, model and quantify emerging risks
- Applications to topics such as cyber risk, climate change, autonomous driving or aging society
- Assessment and modeling of complex interdependencies of risks
- Calibration and validation of models given sparse historic data
- Use and validation of expert judgements
- Applications of models from other industries (e.g. chemical, pharmaceuticals, nuclear science and biology) in insurance

New approaches are as welcome as suitable modifications of existing and established concepts.