Model error in premium calculation. Applications in climate-change events.

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The assessment of insurance premia is based on statistical data about frequency and severity of loss events. Statistical methods require to observe a longer time series, which either stem from a stationary systems or at least from a system with predictable trend. However, especially for rare but catastrophic events, the typical data situation is quite sparse such that the statistical error is large.

In this talk, we propose a combination of the modern statistical methods of extreme value theory and stochastic optimization theory to assess, measure and model the risk connected to climate-change and other global dynamics under model ambiguity. Based on families of models, that may explain the data, one may assign minimax strategies to assess insurance premiums as well as risk and liability management for extreme events.

References

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