



## **Science & (vs.) Insurance: the (non-)Modelability of Catastrophe Insurance Risk**

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Contrasted with high average returns over the last few years and despite improved technical modeling and analytics, the insurance industry is currently experiencing lower multiples and higher volatility.

Experienced, relationship-focused and market-driven leaders are working together with sophisticated theoreticians, scientists, and engineers to address this trend.

In the property catastrophe reinsurance market, results predicting mean losses over hundreds to millions of years contrast with investors' primary concern about next quarter results. Unreasonable expectations with respect to scientific capabilities and accuracy, and the quest for highest resolution and impossible "all-in-one nutshell" results have caused additional confusion in this market. The highest predicted technical returns for territories/perils with actual returns among the worst results over the last several years and the perceived correlation between sub-prime losses and the number of PhDs in the financial markets have only reinforced investors' concerns.

Further commoditization of products across the globe, however, stipulates the need for more detailed risk knowledge and sophisticated portfolio underwriting to ensure future success in this market. This is driving a strong quest in the industry for technical solutions without a sufficient understanding of what future work models might indeed look like. No doubt that this market is in transition while trying to leverage the vast resources of private, government science, and/or science networks for a quantum change in its success and reputation.

This presentation serves as an overview of the potential collaboration across scientific academia and the insurance industry; the quest for transparent communication; and the use of cat analytics to further evaluate risk and uncertainty along with the current modeling inventory and scoring of territories, perils, and data. Additional and potentially new products are suggested, considering quantification of "random" vs. "learnable" and "talebian" risk and their implications for insurance decision-making. Measures concerning the upside, short-term hazard and risk features are discussed along with the most likely results for the next year. Managing the maximum downside or the quantification of other than exposure risk proxies including the life-time value of deals is also addressed.