

Talk 15: Thibault Monnet (Covéa)**Title: Actuarial Challenges Arising from Climate Change**

Abstract. The ongoing phenomenon of global warming has led to significant environmental changes, including increased atmospheric humidity—resulting in higher precipitation levels—and more pronounced temperature differentials, which contribute to the intensification of convective storms such as lightning, hail, and tornadoes.

In this evolving context, historical data are increasingly inadequate for assessing the current and future costs of climate-related risks faced by insurers and reinsurers. To address this limitation, actuaries must engage in the detrending and updating of time series data, with the aim of identifying potential correlations between climate indices and components of insured losses. Moreover, actuaries face numerous additional challenges, including regulatory inconsistencies and data availability issues, particularly when working with long-term insurance datasets. These obstacles complicate the development of robust models capable of capturing the dynamic nature of climate risk.

This presentation will examine some of these challenges, highlight key areas of concern, and propose avenues for future research. The objective is to support the actuarial profession in adapting to climate change by developing analytical tools and methodologies that enhance our understanding of both present and emerging risk landscapes.