Geophysical Research Abstracts
Vol. 15, EGU2013-11664, 2013
EGU General Assembly 2013

Solvency II: How Geosciences become crucial for the Insurance Business

Jürgen Grieser

Risk Management Solutions Ltd., Model Development, London, United Kingdom (juergen.grieser@rms.com, +44 207444 7816)

Solvency II is a Europe-wide framework to force insurers and reinsurers to fulfill solvency capital requirements (SCR). For the insurance market in Europe this means that each insurer and re-insurer has to quantify the financial risk of its portfolio. An insurer has to stay solvent even if the annual loss for a year becomes a 1-in-200-year loss event.

Classical approaches to risk appraisal are based on actuarial models. Statistics of observed loss history over a couple of decades are used to estimate the risk for the near future. This pure statistical approach, however, cannot be used to reliably estimate the 1-in-200-year risk. It would be a meaningless extrapolation due to the high range of uncertainty.

While around 25 years ago only actuarial models and expert knowledge were used for the estimation of solvency requirements, today reinsurers and major insurers use physical loss models to manage their risk. They are either build in-house or from vendors like Risk Management Solutions.

In the frame of Solvency II each insurer has to calculate its 1-in-200-year annual loss. This can be done either by the so-called Standard Formula provided by the European Union or by detailed risk models.

The estimation of annual financial losses is only possible if all hazards which can affect a portfolio are considered. For the international property insurance market, these can be earthquakes, winter storms, tropical cyclones, convective storms, tsunamis and floods. All these hazards are modeled by geoscientists.

In the presentation the Standard Formula and the assumptions made will be discussed, especially the spatial structure of correlation presumed. The advantage of detailed loss models will be shown based on examples. The presentation will end with a short discussion of the challenges that risk modeling faces due to climate change.