



RMS China Earthquake and Typhoon Model Coverage

Strengthen Your Global Portfolio

As one of the world's largest economies, China is well-positioned for long-term growth in the global insurance and reinsurance markets. Execute your China strategy with more confidence using RMS' high-resolution modeling solutions for China's earthquake and typhoon risk.

The RMS® China Typhoon and Earthquake Models enable you to build a profitable portfolio through robust risk selection and pricing in this region, and to bring your China business on to the same decision-making platform as existing risks in established insurance markets in Europe and North America.

Complete View of Risk

- Typhoon-related wind and flood risk coverage for all of China's at-risk coastal and inland provinces, including Hong Kong
- Seismic risk coverage for all of China, including Macao and Hong Kong
- Robust data and thorough validation through collaboration with China's leading scientific institutions

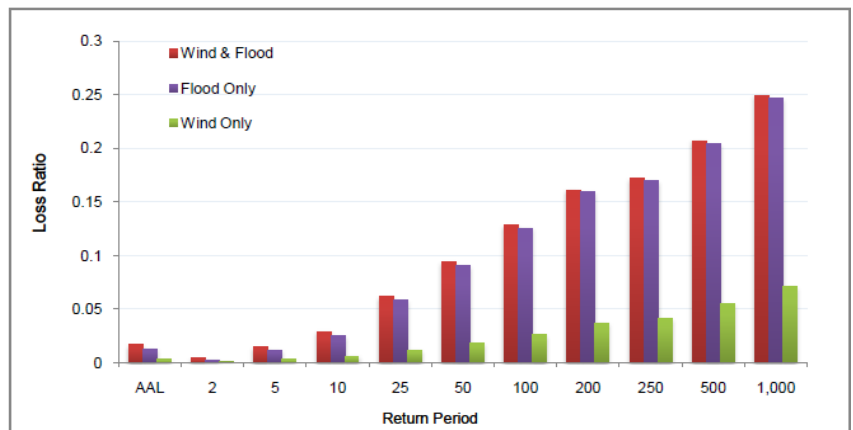
Deeper Insight into Loss

- High-resolution hazard and geographic data reduces the amount of assumptions needed to price business effectively in at-risk regions
- Risks can be selected and managed more confidently to capitalize on opportunities in this rapidly emerging market

China Typhoon Model Highlights

Typhoons drive annual losses in China, with an average of nine typhoons striking the mainland per year, putting some of China's most economically developed areas at risk from both wind and flood. Typhoon-related flood risk contributes as much as 80% to average annual losses from typhoons in these high-exposure areas.

- **Complete risk capture:** All typhoons are modeled through the full storm lifecycle to capture inland precipitation and coastal flood as well as wind.
- **Confident risk selection:** Wind and flood are modeled independently for over 24,000 storms, enabling you to view combined or separate losses to investigate the contribution of typhoon-related flood losses to the overall loss.
- **High-resolution loss results:** Typhoon-related flooding can have a high hazard gradient, with at-risk zones neighboring unaffected areas. Similarly, wind risk is highly location dependent, with coastal properties more heavily exposed to wind damage than inland areas. The model incorporates detailed hazard mapping and supports high-resolution geographic and building classification input to more realistically capture wind and flood loss. Where input data is not available, a region-specific building inventory with building type, age, and height distribution for each line of business down to county and district resolution is available.
- **Robust scientific foundation:** RMS has leveraged its strong links with the China Meteorological Association, National Meteorological Center, Beijing Normal University, and the City University of Hong Kong to validate the wealth of scientific information in the model and calibrate results.



Quantify risk against wind and flood aggregates using individual wind and typhoon-related flood model components to understand drivers of risk and improve risk selection.

China Earthquake Model Highlights

China has one of the largest concentrations of earthquake risk in any country in the world, with almost half of its population located in areas of moderate to high hazard. Earthquake risk is highest in China's northern regions, including Beijing and surrounding areas, but earthquakes have the potential to strike virtually anywhere on mainland China.

- **High-resolution coverage:** High-risk regions can be characterized more accurately with detailed geotechnical hazard data, digitized from soil maps of the whole of China, and captured on RMS' variable resolution grid (VRG) in grid sizes as small as 500 meters.
- **Differentiated building response:** RMS' spectral response methodology provides the most realistic approach available for modeling property vulnerability in this high-risk region. This approach provides a direct link between ground motion and building damage, and differentiates the response of high-rise vs. low-rise buildings—especially relevant for modeling the high-rise buildings that increasingly populate Chinese cities.
- **Region-specific vulnerability:** Damage functions that represent the unique seismic behavior of China's building stock are used to estimate losses. Building attributes can be entered on a risk-by-risk basis, or, when this information is not available, populated from building-stock inventory assumptions included in the model.
- **Earthquake expertise:** RMS' earthquake modeling expertise is validated and strengthened through partnership with China's leading scientific institution in the field of earthquake study, the Institute of Engineering Mechanics (IEM). The model incorporates the IEM's breadth of knowledge on the seismicity of China, detailed geotechnical understanding, and research on building vulnerability, which is used to form the basis of the seismic source model and hazard data layers.