

## How will risk modelling shape the future of risk transfer?

SCOR SE Headquarters  
9 March 2017

### AGENDA

<b>8:30 – 9:00</b>	<b>Registration and Breakfast</b>
9:00 – 9:30	Welcome and opening Remarks, Denis Kessler (CEO and Chairman of SCOR, Co-Chair of the Extreme Events and Climate Risk of the Geneva Association)
9:30 – 10:00	<b>Keynote Speech:</b> Professor Jean Tirole, Scientific director of the Institut d'Economie Industrielle, University of Social Sciences, Toulouse.
10:00 – 11:15	<p><b>Panel 1: Challenges, opportunities and lessons learned from 25 years of developing and utilizing Catastrophe (Cat) risk models for risk transfer applications</b></p> <p><i>The panel will discuss the foundations, challenges and opportunities with Cat Risk Modelling and opportunities for enhancing these models and their utilization for risk transfer around the world:</i></p> <ul style="list-style-type: none"> <li>– <i>How has Cat Risk Modelling shaped risk transfer in the last 25 years; what have we learned?</i></li> <li>– <i>What are the challenges with these tools and what improvements are needed?</i> <ul style="list-style-type: none"> <li>– <i>A discussion of Hazard/Exposure/ Vulnerability , Methodologies , Data requirements and challenges, Open source versus restricted/propriety data and methodologies; Verification aspects and estimating model uncertainty; Model standards and interoperability issues; Resource requirements for development, interpretation and utilizations of CAT risk models</i></li> </ul> </li> <li>– <i>What are the next steps with enhancing these tools and expand their utilization for risk transfer applications around the world?</i></li> </ul> <p><b>Special Remarks &amp; Moderator:</b> Ian Branagan (Renaissance Re)</p> <p><b>Panellists:</b></p> <ul style="list-style-type: none"> <li>– Jay Guin (AIR)</li> <li>– Dickie Whitaker (OASIS)</li> <li>– Lixin Zeng (AlphaCat)</li> <li>– Alexandre Allmann (Munich Re)</li> </ul>
<b>11:15 – 11:30</b>	<b>Coffee Break</b>
11:30 – 12:45	<p><b>Panel 2: Next generation risk models: approaches, , challenges and opportunities</b></p> <p><i>The panel will examines needs, challenges and opportunities for next generation of risk</i></p>

	<p><i>models, specifically:</i></p> <ul style="list-style-type: none"> <li>– <i>What are the latest innovations in risk modelling methodologies:</i> <ul style="list-style-type: none"> <li>– <i>From peril-specific risk modelling to systems’ approach and integrated models e.g., supply chains, cities and urban systems, energy/food/water systems; health/epidemics/pandemics, critical infrastructure;</i></li> <li>– <i>End-to-end risk assessment for building socio-economic resilience to a specific peril (e.g., prevention, early warning and preparedness and risk transfer measures for floods)</i></li> <li>– <i>Complex natural and man-made catastrophes such as the Great Japan earthquake/tsunami/nuclear disaster, Iceland’s volcanic risks, etc.)</i></li> </ul> </li> <li>– <i>Challenges and opportunities for accessing high quality data (e.g., environmental, socio-economic, exposure and vulnerability, etc.) to support new modelling approaches</i></li> <li>– <i>Other relevant technologies: AI, Big data, Satellites, etc.</i></li> </ul> <p><b>Special Remarks &amp; Moderator:</b> Paul Nunn (SCOR)</p> <p><b>Panellists:</b></p> <ul style="list-style-type: none"> <li>– Robert Muir Wood (RMS)</li> <li>– Federico Waisman (Ariel Re)</li> <li>– Molly Jahn (University of Wisconsin-Madison and Oak Ridge National Laboratories)</li> <li>– Madeleine Thomson (Columbia University)</li> </ul>
<b>12:45 – 14:00</b>	<b>Lunch</b>
14:00 – 15:30	<p><b>Panel 3: Harnessing latest development in weather/water/climate research, earth observations, forecasting for current and next generation of forward-looking risk models</b></p> <p><i>This panel will examine the following issues:</i></p> <ul style="list-style-type: none"> <li>– <i>State of the art in research, earth observations and environmental surveillance</i></li> <li>– <i>Synthetic data and simulations, seamless forecasting systems for extreme events (fast and slow onsets)from next minute to decadal time scales</i></li> <li>– <i>Latest research on understanding natural modes of climate variability and impacts of climate change and implications for predicting and modelling of extreme events.</i></li> <li>– <i>State-of-the-art with modelling of Climate and Health; Agriculture; and Energy interfaces</i></li> <li>– <i>Expansion of publically funded scientific research to support information needs of decision-driven risk modelling tools</i></li> <li>– <i>Opportunities for harnessing scientific developments in a scalable and sustainable way for risk modelling</i></li> </ul> <p><b>Special Remarks &amp; Moderator:</b> Maryam Golnaraghi (The Geneva Association)</p> <p><b>Panellists:</b></p> <ul style="list-style-type: none"> <li>– Jianming Yin (Tokio Marine Technologies)</li> <li>– Johnny Chan (City University of Hong Kong)</li> </ul>

	<ul style="list-style-type: none"> <li>- Ghassem Asrar (Pacific Northwest National Laboratory, PNNL)</li> <li>- Dame Julia Slingo (Former Chief Scientist - UK Met Office)</li> <li>- Lawrence Buja (National Center for Atmospheric Research, NCAR)</li> </ul>
<b>15:30 - 15:45</b>	<b>Coffee Break</b>
<b>15:45 - 17:15</b>	<p><b>Panel 4: Role of Risk Modelling as an enabler to stimulate new sovereign and regional risk transfer</b></p> <p><i>This panel will examine the following issues:</i></p> <ul style="list-style-type: none"> <li>- <i>Overall challenges and opportunities for risk knowledge and risk modelling for development and implementation of new sovereign and regional risk transfer solutions in high-, middle- and low-income nations</i></li> <li>- <i>Governments' needs, capacities and challenges with development and utilizations of risk information</i></li> <li>- <i>How can the (re)insurance industry and the risk modelling community assist governments to enhance their capacities to develop and utilize risk information (distinguish high-, middle-, and low-income countries)</i></li> <li>- <i>How can the development community and international donors support this area in a more coordinated and sustainable manner</i></li> <li>- <i>What critical partnerships need to be strengthened and which new ones need to be across different segments?</i></li> <li>- <b>Special Remarks &amp; Moderator:</b> Mamiko Yokoi-Arai (OECD)</li> </ul> <p><b>Panellists:</b></p> <ul style="list-style-type: none"> <li>- Alanna Simpson (GFDRR's Risk and Innovation Lab)</li> <li>- Gary McNally (Flood Re)</li> <li>- Nicola Ranger (UK DFID)</li> <li>- Gerry Lemcke (Swiss Re)</li> <li>- Kirsten Dunlop (Climate-KIC)</li> </ul>
<b>17:15 - 17:30</b>	<p><b>Overall Summary of the conference - Maryam Golnaraghi (Geneva Association)</b></p> <p><b>Closing Remarks - Anna Maria D'Hulster (Geneva Association)</b></p>

## How will risk modelling shape the future of Extreme event and climate risk Management and specifically risk transfer?

### *A Special Roundtable Discussion*

10 March 2017, SCOR SE Headquarters

This event is by-invitation-only and engages around 45 leading international experts

### AGENDA

<b>8:30 – 9:00</b>	<b>Light Breakfast</b>
<b>9:00 – 9:15</b>	<b>Objective and expected outcomes of the round table discussions – Maryam Golnaraghi (The Geneva Association)</b>
<p>9:15 – 11:00</p> <p><b>Facilitator:</b> Maryam Golnaraghi</p> <p><b>Invited 3-minute opening remarks by:</b> Dickie Whitaker Paul Nunn Ghassem Asrar</p> <p>Followed by a facilitated round-table discussion</p>	<p><b>Session 1: Explore concrete opportunities for harnessing the latest weather/climate scientific advancements, other technologies (Big data, satellites, AI, etc.) and engineering progress, and new system’s approaches to enhance risk analysis:</b></p> <p><b>Issues:</b> Identify strategic and practical recommendations on:</p> <ul style="list-style-type: none"> <li>(1) Science and operational capacities related to weather/climate to enhance hazard representation <ul style="list-style-type: none"> <li>a. What aspects of technological advancements can be leveraged for risk modelling; <ul style="list-style-type: none"> <li>i. Earth observations, synthetic data and simulations, research on modes of climate variability, impact of weather systems and related correlations hazard modelling and forecasting systems (from next minute to longer timescales)</li> <li>ii. How to address climate change?</li> <li>iii. Availability, accessibility and quality, and data policy issues</li> </ul> </li> <li>b. Engaging with the scientific community in a scalable and sustainable manner <ul style="list-style-type: none"> <li>i. How can we harness science and operational services in a more systematic and sustainable fashion, to support risk modelling (Bridging the gap between CAT modellers and the weather-climate research and operational service providers in academia, centres of excellence and operational government services)</li> <li>ii. Opportunities for influencing systematically coordinated publically-funded weather/climate research to address critical research topics relevant to risk modelling and risk management –</li> </ul> </li> <li>c. What critical partnerships should be forged within and across different segments? How can these partnerships be operationalised</li> </ul> </li> <li>(2) Engineering advancements and enhancing the exposure and vulnerability representation</li> <li>(3) Other technologies that are relevant for risk modelling: Big data, AI, other</li> </ul>
<b>11:00 – 11:15</b>	<b>Coffee Break</b>

<p>11:15 – 12:25</p> <p><b>Facilitator:</b> Maryam Golnaraghi</p> <p><b>Invited 3-minute opening remarks by:</b> Mamiko Yokoi-Arai Ian Branagan (With Alanna Simpson) Claire Souch</p>	<p><b>Session 2: Expansion of risk modelling to enhance public sector’s risk knowledge and as an enabler to stimulate risk management solutions:</b></p> <p><b>Issues:</b> Identify strategic as well as practical recommendations on:</p> <ul style="list-style-type: none"> <li>(1) Segmenting governments needs /capacities/challenges for risk information: <ul style="list-style-type: none"> <li>a. For different decisions related to investing in and implementing development and preventive measures EWS and preparedness, risk financing and risk transfer and post disaster response and recovery/resilience building (can we distinguish the needs and actions by high-, middle-, and low-income countries)</li> <li>b. A culture of risk-based decision-making</li> <li>c. What are their challenges in the face of changing climate?</li> </ul> </li> <li>(2) Addressing silos in the governmental decision-making/budgeting processes and the need for enhanced partnerships across different agencies and levels of the governments</li> <li>(3) How can the (re)insurance industry and the risk modelling community assist with their wealth of risk knowledge, risk pricing, and other technical expertise and capacities to address the governments’ needs for risk information?</li> <li>(4) What the governments can do to enhance their capacities to develop and utilize risk information (with considerations for specific needs of governments in developed and developing countries) – (can we distinguish the needs and actions by high-, middle-, and low-income countries)</li> <li>(5) How can the development community and international donors support this area in a more coherent and sustainable manner</li> <li>(6) What critical partnerships need to be strengthened and which new ones need to be across different segments?</li> </ul>
<p>12:25 – 12:30</p>	<p><b>Conclusions and Next Steps – Maryam Golnaraghi (The Geneva Association)</b></p> <p><b>And Closing of the Event</b></p>
<p>12:30 – 14:00</p>	<p><b>Lunch</b></p>