



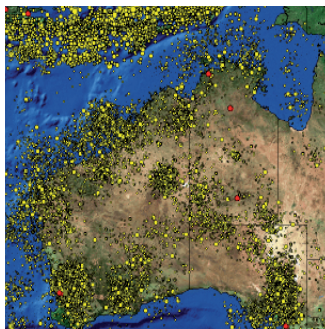
## Catastrophe Research



**Hurricane Hugo making landfall**  
September 1989  
(Photo: NOAA)

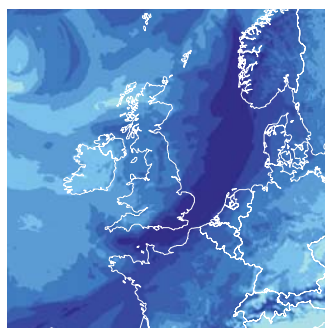
Catastrophe underwriting is increasingly dependent upon sophisticated event modeling to assess and price catastrophe risk. At PartnerRe, we have chosen not to outsource this critical element of the underwriting process, but rather to build our own probabilistic models. Our CatFocus<sup>®</sup> earthquake and storm models provide us with an independent view of the risks we are assuming. Where beneficial, we complement the CatFocus<sup>®</sup> analysis with that generated by various third party models to arrive at a multi-model assessment.

At present we utilize our own fully probabilistic CatFocus<sup>®</sup> models for tropical storm (coverage U.S., Caribbean, Japan, Australia, Taiwan, Philippines) and earthquake (worldwide). We have just released a proprietary European windstorm CatFocus<sup>®</sup> model, based on state of the art, numerical forecasting techniques.



**Modeling Earthquake risk**  
Distribution of simulated events

The Research team is an 12 strong team of internal experts with advanced qualifications in Geophysics, Meteorology, Physics, Engineering and Mathematics. The team works in close coordination with PartnerRe's catastrophe underwriters and with the scientific community, ensuring a combined understanding of both underwriting requirements and usage of the most appropriate and technically advanced development methodologies. Our CatFocus<sup>®</sup> models are continually updated and tested against new data. In many cases, internal work is augmented by the outsourcing of specific projects to external consultants with particular expertise or data systems.



**European Windstorm analysis**  
Max gust speed during the 87J  
storm event

In addition to assisting our underwriters and clients regarding all aspects of model usage, in-house development has given our team members a deep insight into the workings and limitations of catastrophe models. Reinsurers are increasingly seeking to understand conflicting model outputs and to develop their own methods for dealing with multiple catastrophe models. The Research team has long provided the tools and know-how to achieve this, substantially enhancing the service to our clients and supporting consistent and successful catastrophe underwriting at PartnerRe.

The Research team is split between PartnerRe's Bermuda and Zurich offices. In Bermuda, we process and check the large volumes of detailed U.S., Canadian and U.K. data that we run through our CatFocus<sup>®</sup> models. This is closely coordinated with the Zurich-based team members responsible for natural hazards research and model development.

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