Unlocking the secrets to *accurate*

catastrophe models…

KC &CO

KAREN CLARK & COMPANY

The *purpose* of a catastrophe model is to provide reliable and credible *loss estimates* to insurers

There's so much discussion around the science underlying the models, it's easy to forget that the catastrophe models are not scientific tools—they're business tools for making very important financial decisions.

KCC scientists and engineers never forget this fact. Our modeling experts know the science, and more importantly, how to implement the science to produce consistently credible and high quality loss estimates insurers can have confidence in.

The *key* to high quality loss estimates is not the science—it's the *scientific process*

All of the catastrophe models are based on the same science—the difference is in the implementation. The uncertainty around the science requires model developers to make many assumptions based on judgment. High quality cat models require a rigorous scientific process around how the model assumptions are selected and how expert judgment is applied.

KCC scientists must demonstrate and support all of their assumptions and the impact on loss estimates to an internal peer review panel before model components are accepted for implementation. Lack of such a rigorous scientific review process can result in model loss estimates that are unduly volatile and that lack credibility given the nature of the underlying science.

Accuracy requires model components that are *visible* and *verifiable*

Trust but *verify*. KCC is the only modeling company confident enough in our models to *show* our clients all components and assumptions. Other model vendors *tell* you what they do but don't let you *see* what they do.

KCC shows what's in our models by way of fully transparent model components so you can be sure the calculations are accurate. For example, every event intensity footprint and every damage function is visible and accessible. Because you can see the model assumptions, you can verify that the model methodology has been implemented correctly, and you will have higher confidence in the model loss estimates.
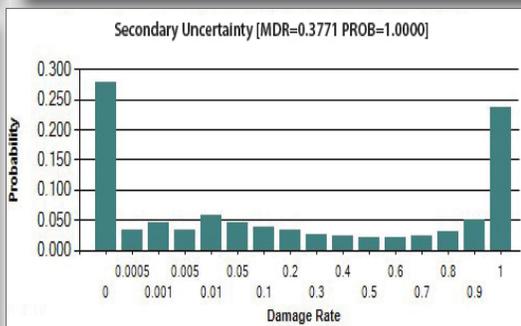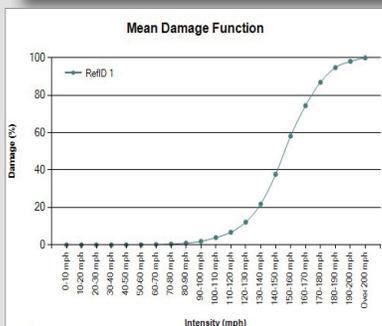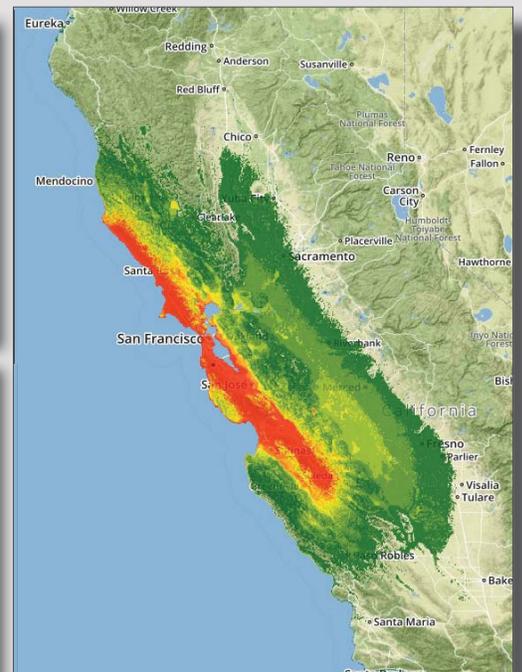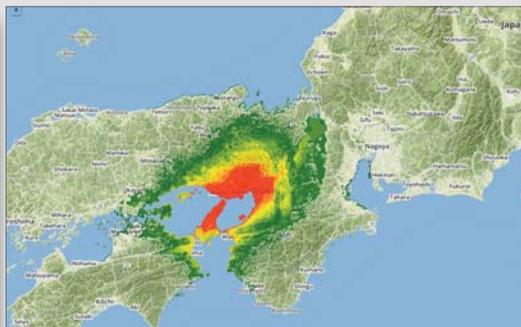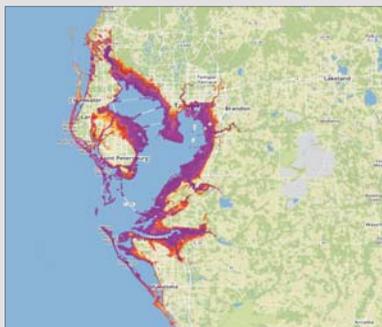
The final secret to accurate models is the ability to efficiently customize model components using your own big data and other proprietary information
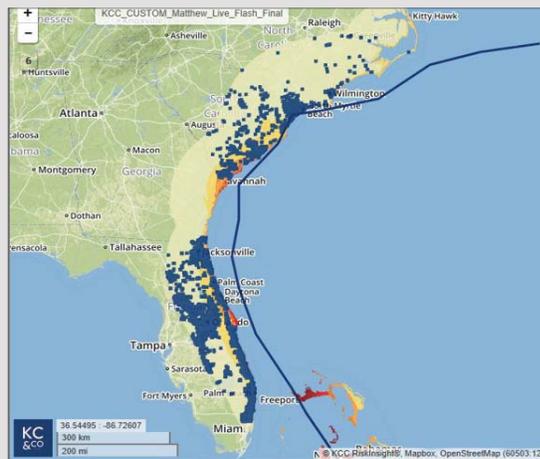
Other models are a "one size fits all" product, and the same assumptions are applied to all insurers. But no two insurers are the same, especially with respect to catastrophe losses. The same level of property damage can result in very different claims due to different insurance-to-value assumptions, policy conditions, and claims handling practices.

Insurers are able to efficiently and scientifically customize the damage functions in KCC models and can even use variables not accounted for in other models, such as credit score and quality of management. This means you can improve the accuracy of your loss estimates by fine tuning the damage functions to be more representative of your own claims experience.
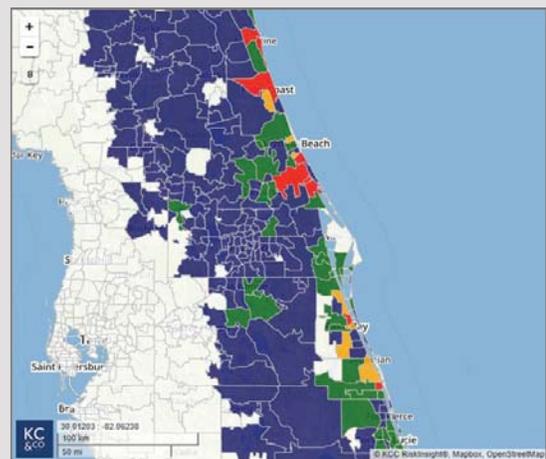
The Proof is in the Numbers

KCC clients can track live events and estimate the numbers of claims, claim severity distributions, ground up, and gross losses in real time. For hurricanes, earthquakes, and severe convective storms, insurers can get immediate and reliable loss estimates that they can analyze in numerous ways.

Hurricanes Matthew and Hermine demonstrated the power and reliability of the KCC models. Continuous updates on storm track and intensity enabled our clients to efficiently plan their claims adjusting processes, give credible guidance to reinsurers, and inform other external stakeholders on expected losses immediately after the storms.

KCC is Your Trusted Partner

"Partnering with KCC is one of the best decisions we have made in the past few years."

Now you can have catastrophe models that are *visual*, *verifiable*, and *accurate*

Accuracy has long eluded the cat modeling industry—catastrophe model loss estimates have been volatile and prone to error. Now KCC has taken the science and engineering knowledge on natural hazards to a new level and proven that catastrophe models can produce more consistent and accurate numbers that insurers can have higher confidence in.

KCC scientists and engineers are dedicated to the advancement of the art and science of catastrophe modeling. Other innovations we've introduced to the industry include:

- Physical model for Severe Convective Storms (SCS) that accurately reproduces actual insurer losses as well as providing more credible EP curves for hail, tornadoes, and straightline winds

- Unique Characteristic Event (CE) risk metrics for monitoring exposure concentrations and enhancing underwriting guidelines

- Open platform modeling

Along with high resolution models, the RiskInsight® open loss modeling platform includes powerful capabilities

- High resolution mapping

- Interactive exposure and loss dashboards

- Global model building tools

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