

**SMART
DECISIONS
FOR CLIMATE
AND NATURAL
DISASTER**

GLOBAL **PARAMETRICS**

Why we exist

Natural disasters are a key cause of an endemic poverty cycle in many emerging markets, driven by the “protection gap” between insured and economic losses. Protecting against economic losses caused by natural disasters, as amplified by climate change, boosts investment and strengthens the risk-taking capacity of the private sector. Global Parametrics is playing an active part in the mitigation of this global market failure by offering products that minimise business interruption and contribute to social resilience.

The Disaster Protection Gap

93%

93% of people living in extreme poverty are in countries that are politically fragile and/or environmentally vulnerable.

94%

Yet, on average 94% of economic losses from natural catastrophes over 1990-2016 in low and middle income economies were not insured.

What we do

Global Parametrics (GP) designs and deploys structured financial solutions for institutional clients in emerging markets. These provide financial support that mitigates the impact of climate and natural disasters to their business and communities, building resilience and expediting recovery.

HOW WE HELP OUR CLIENTS



ASSESS

GP has unmatched climate and seismic-based data analytics for businesses to assess exposures to natural disasters and plan investments accordingly.



MONITOR

GP develops tailored natural disaster risk tools offering near real-time and forecasted conditions to monitor and proactively plan for emerging events.



RESPOND

GP structures and deploys financial hedging products for businesses to get rapid cash in order to mitigate and recover from natural catastrophes.

How we do it

Our Technology

Our risk hazard platform uses proprietary algorithms to harness and enhance 60+ years of big science and seismic data to create 'virtual weather stations' for any region on Earth.

Our Products

With these datasets, we can evaluate our clients' climate and natural disaster risk, then structure financial solutions based on index-linked parametric triggers.

Risk Mitigation

We manage a dedicated fund (The Natural Disaster Fund) which enables us to place these tailored solutions into the risk transfer market.

“We are experts in natural disaster risk mitigation and financial resilience in emerging economies.”

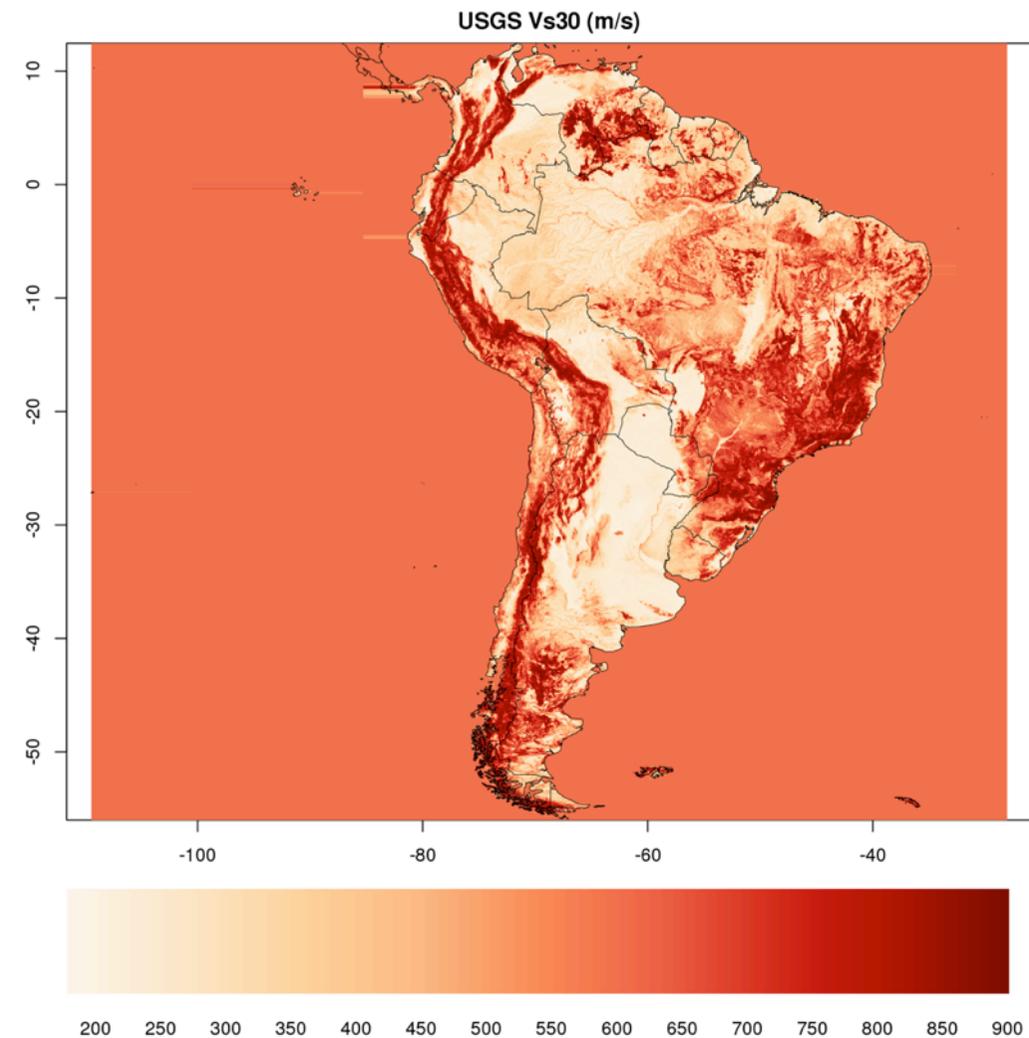


OpenQuake in Global Parametrics

- Global Parametrics (GP) currently has PGA ground-motion footprints for a global database of historical post-1900 events, using a variety of published source models and GMPEs, with new events added automatically in real-time.
- We would like to move to a global probabilistic view of earthquake hazard risk, preferably open-source and based on the most up-to-date academic view.
- Participation of national agencies in emerging markets is an important component in terms of credibility for these new markets.
- GP has a preference for a platform that has been mainstreamed among key underwriters in the ILS and reinsurance markets
- OpenQuake fits this criteria very well.
- GP is currently marketing the use of OpenQuake to become an accepted modeling standard for parametric EQ transactions in emerging markets

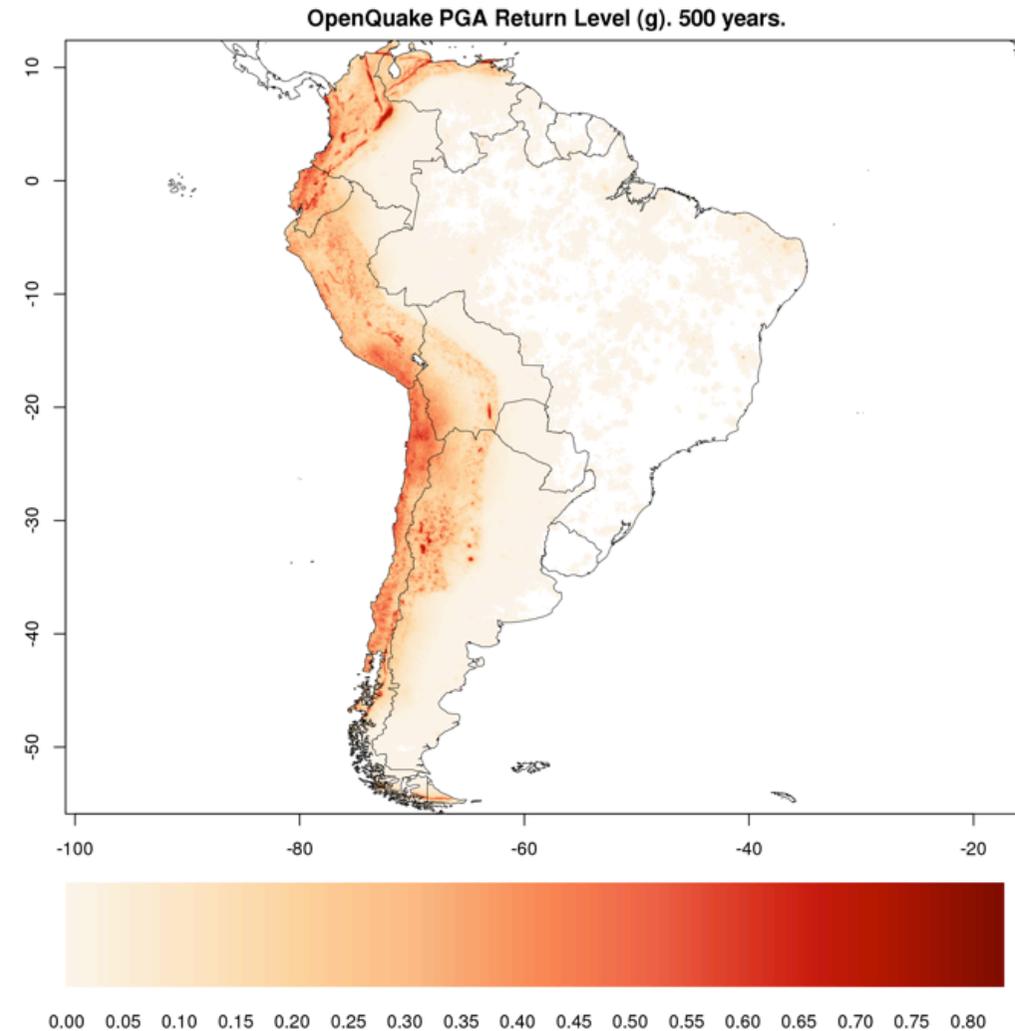
Test Case South America – Site Conditions

- The OpenQuake SARA v1.0 model was implemented in Global Parametrics for the entire South American continent.
- Site conditions were calculated as grid-box mean USGS Vs30 at 0.1 x 0.1 deg resolution (153k sites).



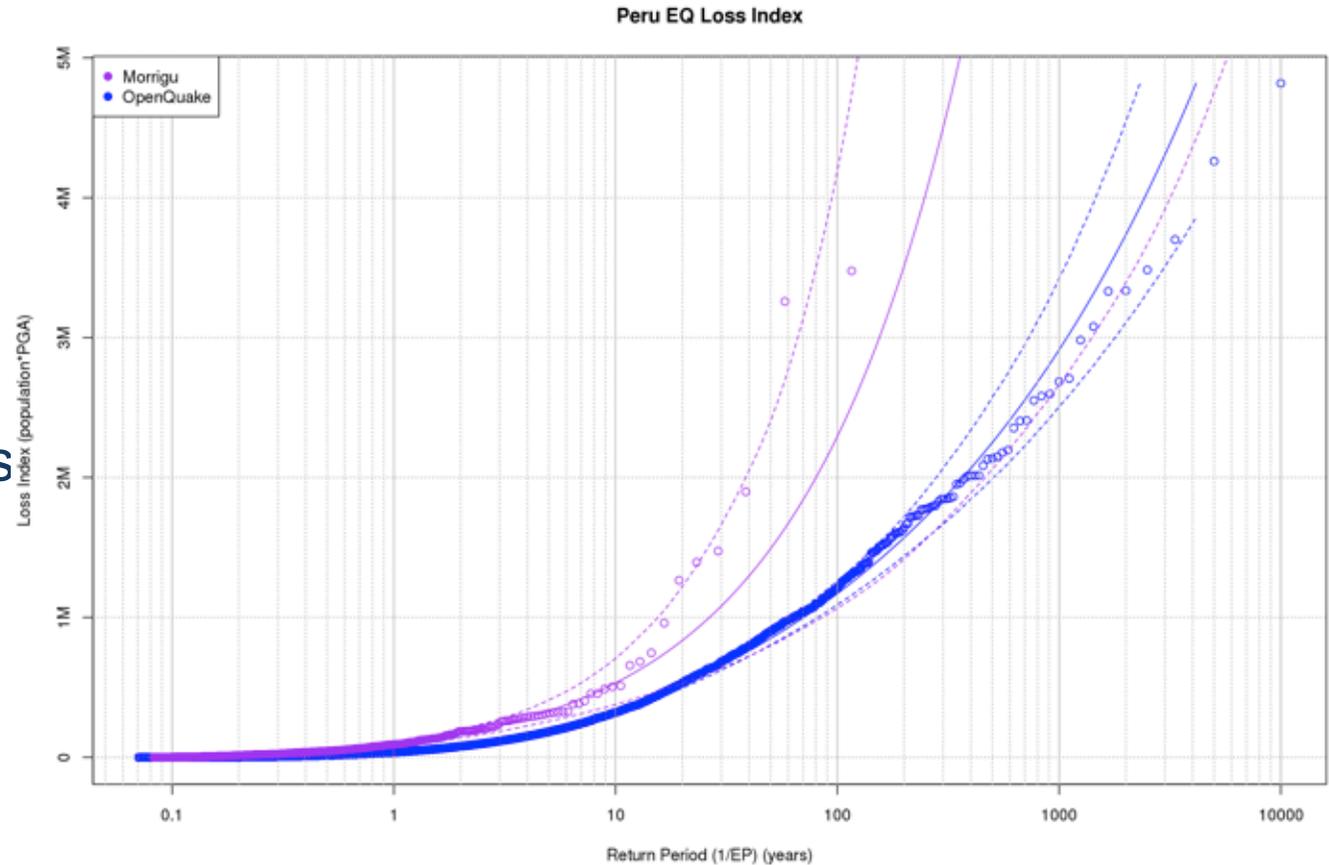
Test Case South America – Event Set

- OpenQuake was run for the 153k sites for 10k years.
- OpenQuake code needed to be altered to increase the max no. of sites.
- Run needed to be split into 10 independent runs of 1k years to avoid integer overflow errors.
- Source zonation is very evident in the hazard maps.
- Unable to solve with parameter changes (e.g. large *maximum_distance*).
- We are aware un updated model is available but welcome feedback.



Benefit To Global Parametrics

Adoption of OpenQuake for contracting provides a view of risk with lower uncertainty at high return periods and enables transparent risk pricing and contract settlement.



Exceedance probability of simple parametric index (population * PGA) for OpenQuake and Morigu. Event indices are extrapolated using a Generalised Pareto Distribution (solid line) along with its 95% confidence interval (dashed lines).

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