

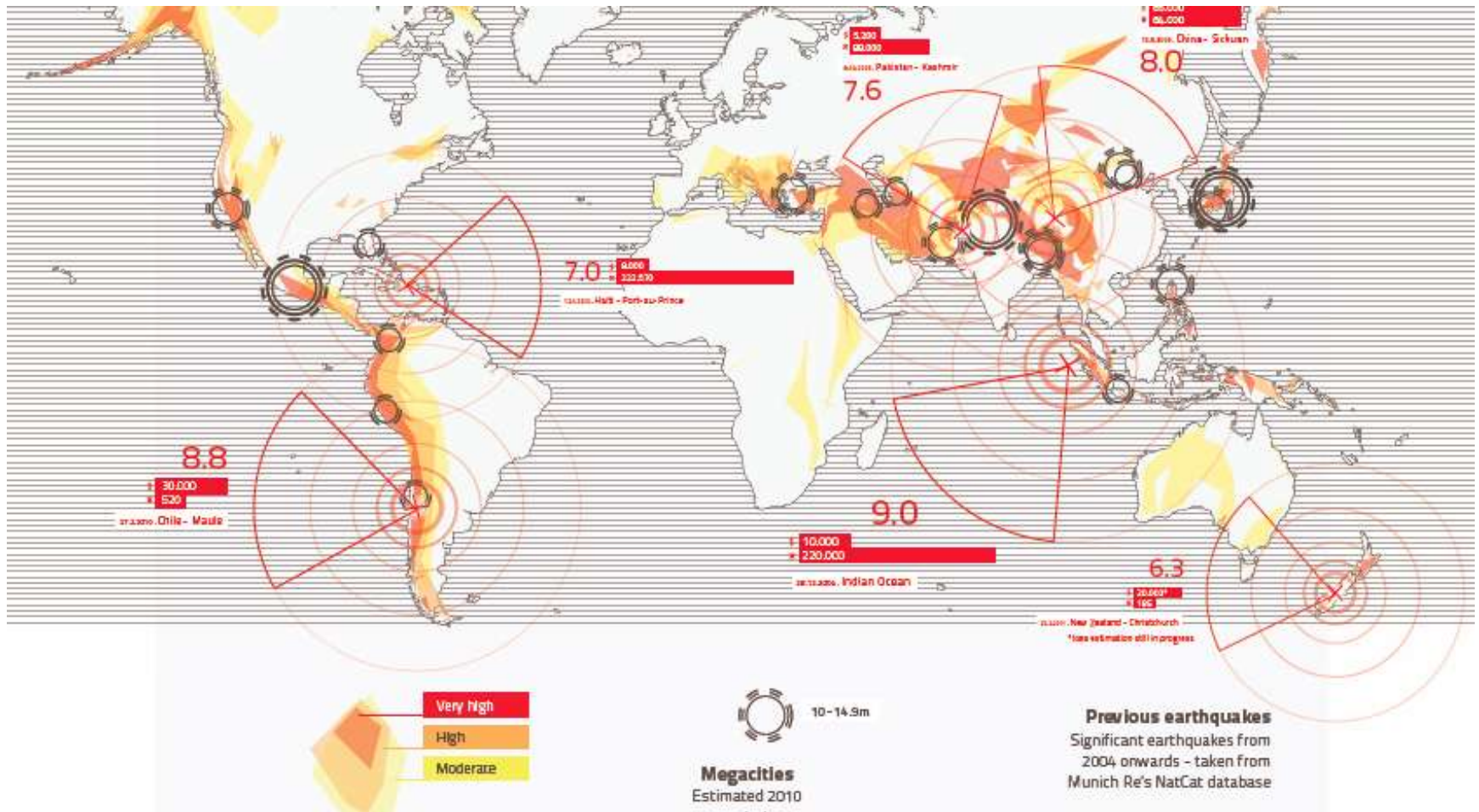
Leveraging on GEM to advance seismic hazard and risk assessment

Helen Crowley – GEM Foundation

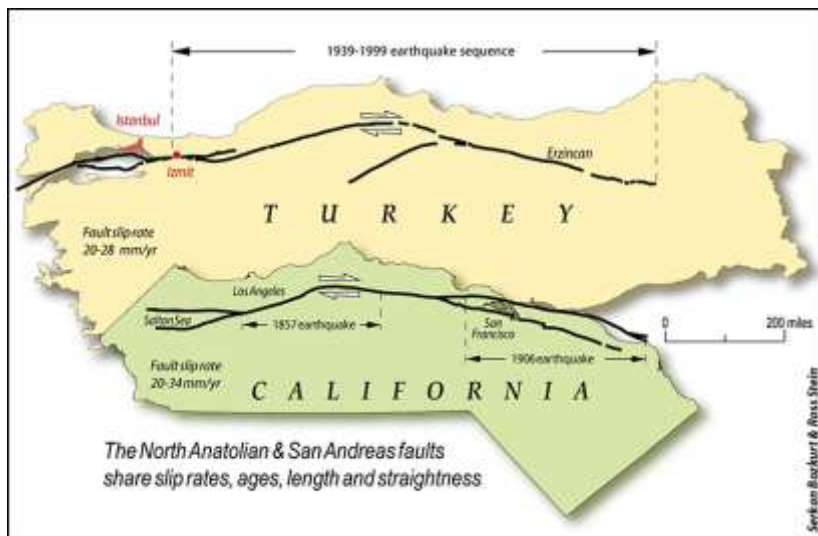


Cooperative Governance
Traditional Affairs





- *all countries suffer from inadequate records of past events. We can learn from other continents with comparable tectonics, buildings, societies, economies...*

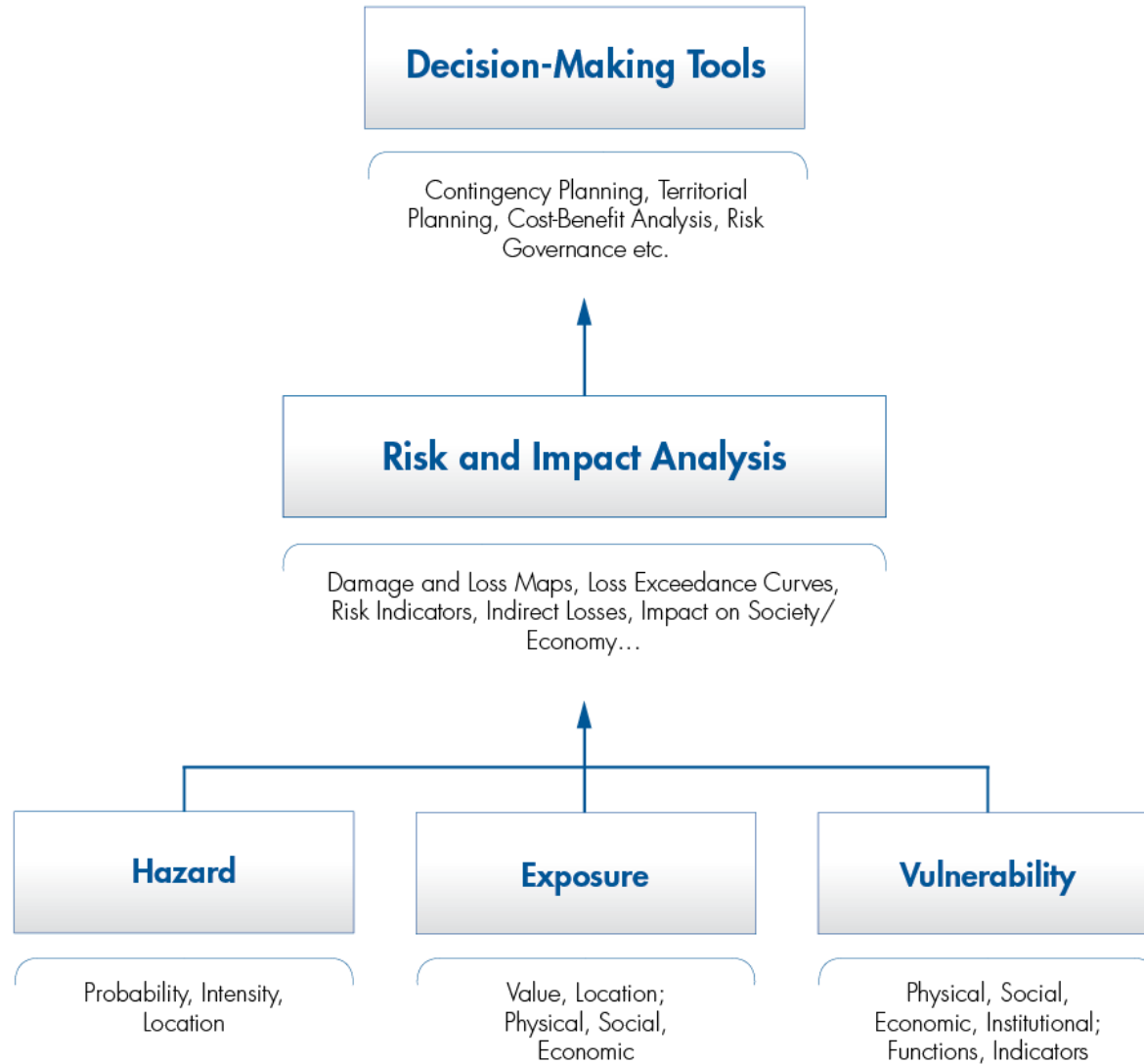




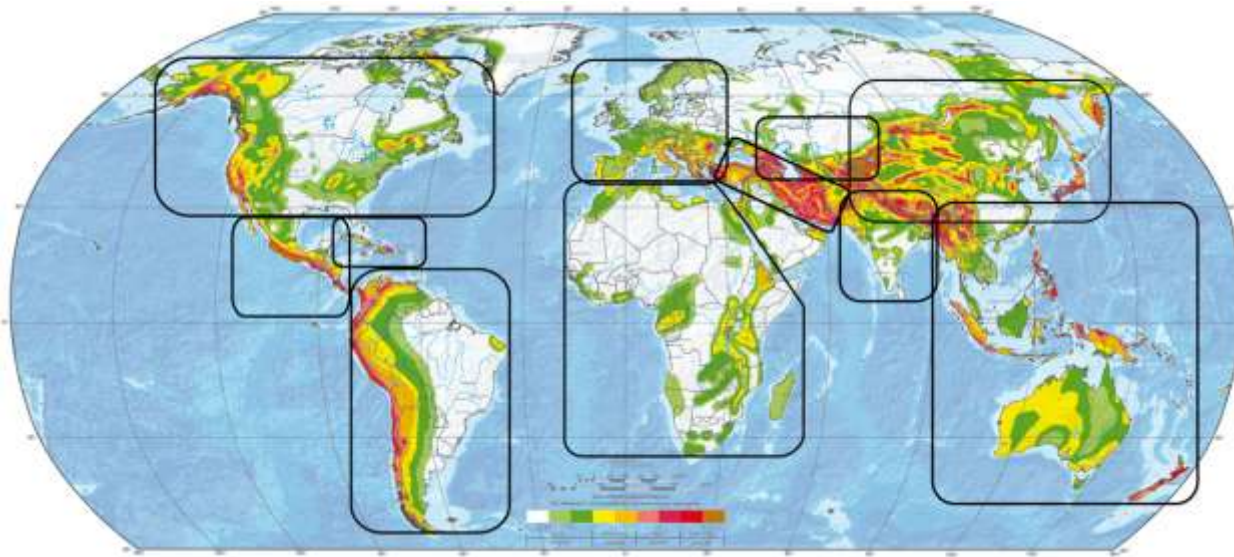
Worldwide Scientific Collaboration

Global Earthquake Model (GEM)

- *public-private partnership*
- *working together to assess risk*
- *leveraging science for the benefit of society*
- *focusing on global projects, regional collaborations, open-source software development*



- *earthquakes do not know political boundaries*
- experts in different countries thus need to work together on a common model for seismic hazard and risk.



Regional Collaboration



Participants: 30

27th October 2009, Kenya

Regional Collaboration



Participants: 35

22nd November 2011, South Africa



Participants: 30

26th May 2011, Rabat

- *through international collaboration, the GEM community is together producing global datasets of:*

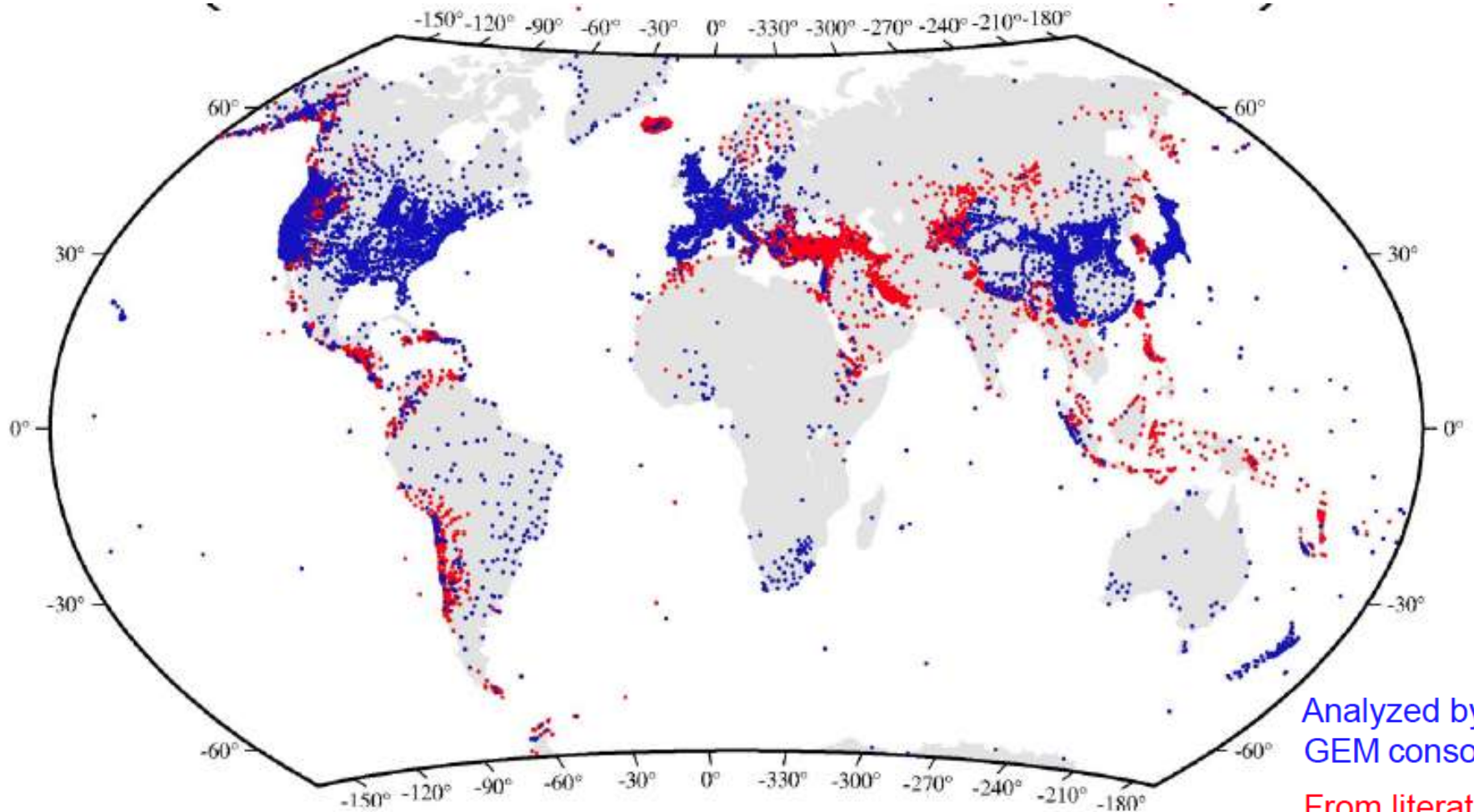
instrumental catalogues, historical catalogues faults, geodetic strain, ground motions, exposure, consequences, physical vulnerability, indicators and indices of social vulnerability/resilience/indirect loss;

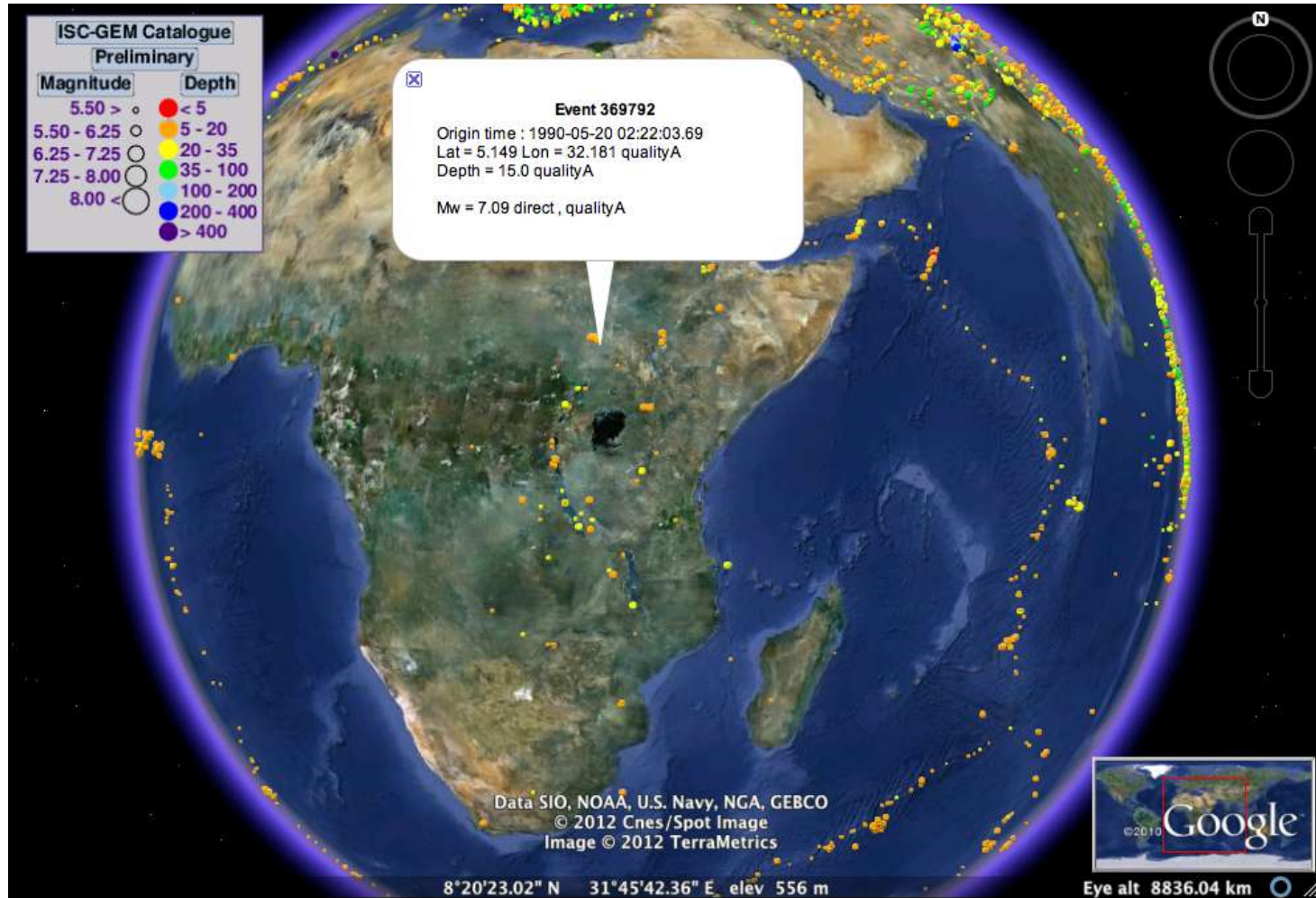
- *to produce global estimates of:*

hazard, damage, losses, retrofitting cost-benefit, insurance cost-benefit, integrated risk

Global Standards and Databases

Global Strain Rate Model





- *all of which will be openly available online:*



- including open source GIS mapping capabilities:

The screenshot shows a web-based GIS application interface. The main map displays a topographic view of a region in New Zealand, with several fault lines overlaid in red and blue. A dialog box titled 'fault_section_view.5' is open, showing a table with the following data:

Name	Value
Fault Section...	test1
Length Min	
Length Max	
Length Pref	
Strike (...)	
Episodic beh...	

Below the map, there is a data table with the following columns: Fault Section Na..., Length Min, Length Max, Length Pref, Strike (...), Episodic behi..., Episodic behi..., Upper seismoge..., Upper seismoge..., Upper seismoge..., Upper seismoge..., Lower seismoge..., Lower seismoge..., Lower seismoge... The table contains several rows of data, including 'Ohariu South', 'test2', 'Joined junk fault', 'Ohariu North', 'test3', and 'joined fault'.

- *including open source modelling tools:*

e.g. a software tool to guide users through:

- Methodological approach for structuring composite indicators
- Assigning importance weights to indicators
- Interactively changing weights and evaluating effect on rankings

The dialog box is titled "Importance for PHYSICAL RISK ...". It contains two sections: "Importance Ordering:" and "Importance Strength:".

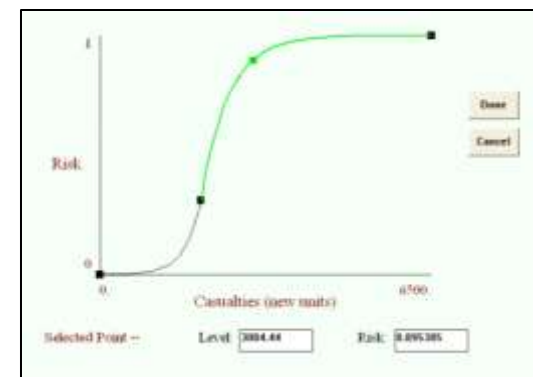
Importance Ordering:

- Casualties has more Importance than Ratio of Heavily
- Ratio of Heavily Damaged Buildings has more Importance

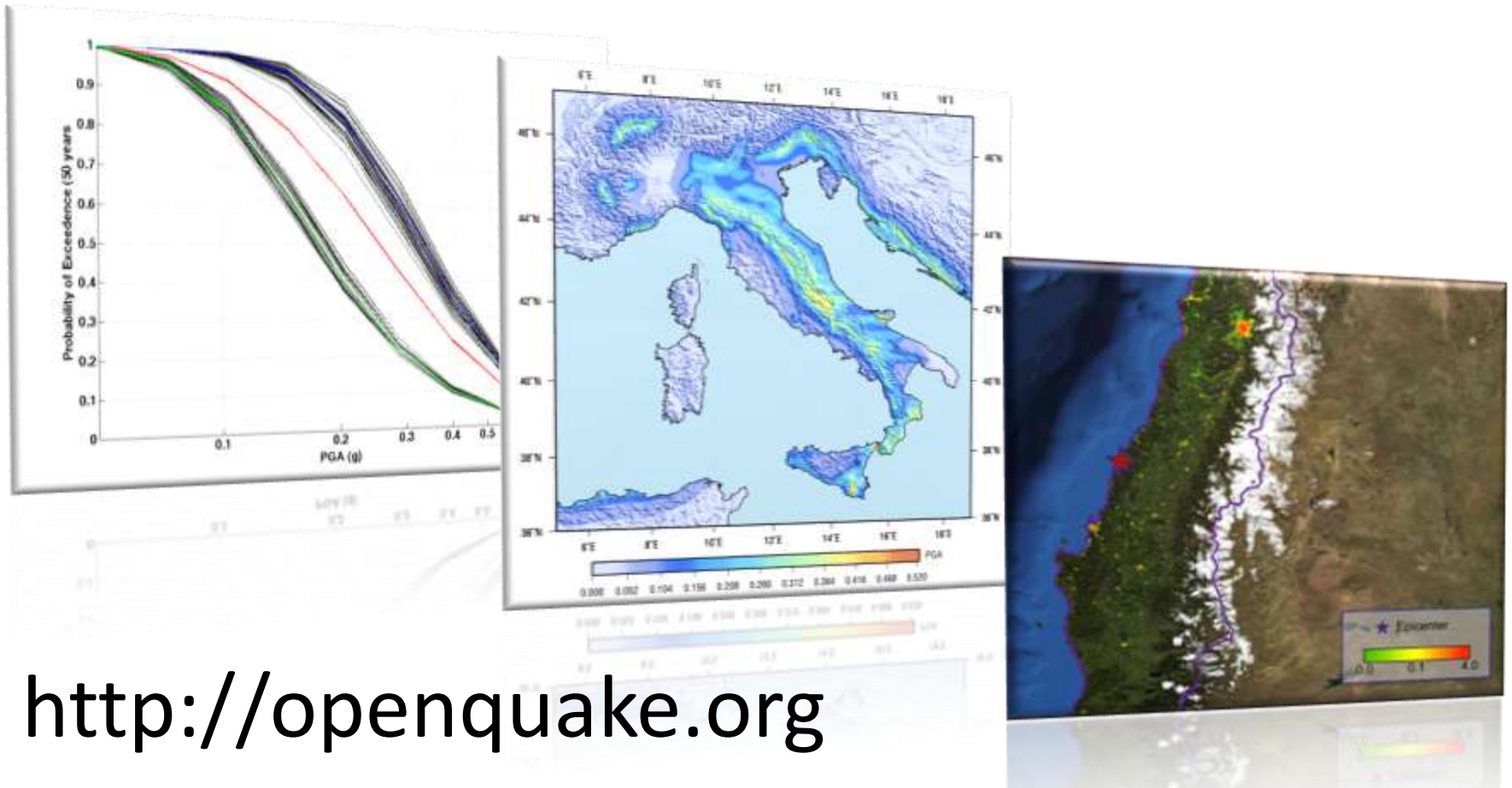
Importance Strength:

- 1 - Equal
- 2
- 3 - Moderate
- 4
- 5 - Essential/Strong
- 6
- 7 - Demonstrated
- 8
- 9 - Extreme

Buttons: OK, Next, Cancel

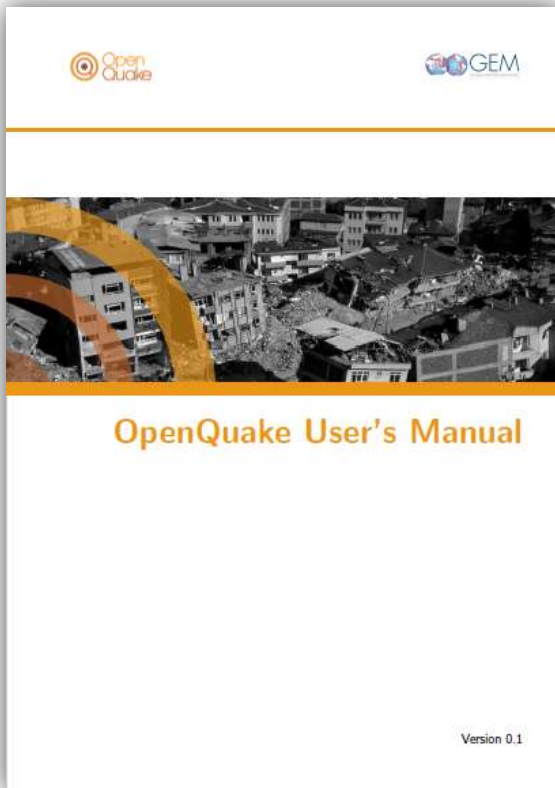


- *including open source hazard and risk software:*



<http://openquake.org>

- *technical and user manuals, tutorials and training workshops:*



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The latest reports, requests and news from the various groups: click to read more....

Expert advice on the use of EMS-98 0
 15.06.2012 / [Risk & Impact](#) / WG on Macroseismic Intensity

Have you applied the EMS-98 scale over the past years? Participate in our survey aimed at collecting expert advice on the use of EMS-98. This is the first stage in a project which aims to make a more internationally applicable version of EMS-98. Click here for the link..

[More](#) →

Meet the GEM Community

Hundreds of experts and professionals from around the globe are working collectively on state-of-the-art global earthquake risk assessment and get together in Nexus to discuss the work being carried out within the scope of GEM.

Join us!

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Regions
GEM Sub-Saharan Africa

We are working on the Regional Program for Sub-Saharan Africa. From 2009 of hazard- and risk-related experts from many countries of the region have been at GEM-related meetings and workshops. In September 2011, Atalay Ayele took over as Operations Manager, in order to give a boost to GEM-related activities in the region. He has already identified a number of activities and working groups, and has established several with ongoing projects such as SeTMA, the ESARSWG active fault mapping project, the DRC seismic hazard and seismotectonic map of South Africa, projects and other regional fault mapping projects.

Atalay Ayele is the manager of this nexus group; to get in touch with us write him at [atawon\[at\]yahoo.com](mailto:atawon[at]yahoo.com)

Group Members





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Posts | Virtual Disk | Notes | **Discussions**

Contents **View** Actions ▾ State: **Reserved**

Discussions


This is your private discussion wall, for any issue you would like to bring to the attention of fellow group members. You can add hyperlinks to link to the Virtual Disk, Notes [http://...] and other (external) pages. There is also a GEM Discussion Wall for all collaborators.

Start a discussion or share something with the group

Discussion subject ...

Add more details ...

Share




Sonia Giovinazzi

Macroseismic and mechanical based vulnerability models calibrated on Canterbury earthquakes data

The UoC proposal for NZ macroseismic and mechanical based vulnerability models calibrated on Canterbury earthquake data, aims to:

- analyze the correlation between MI and ground motion parameters from the seismic input and damage



- Come and talk to us and find out more GEM at our stand in the Innovation Expo*

