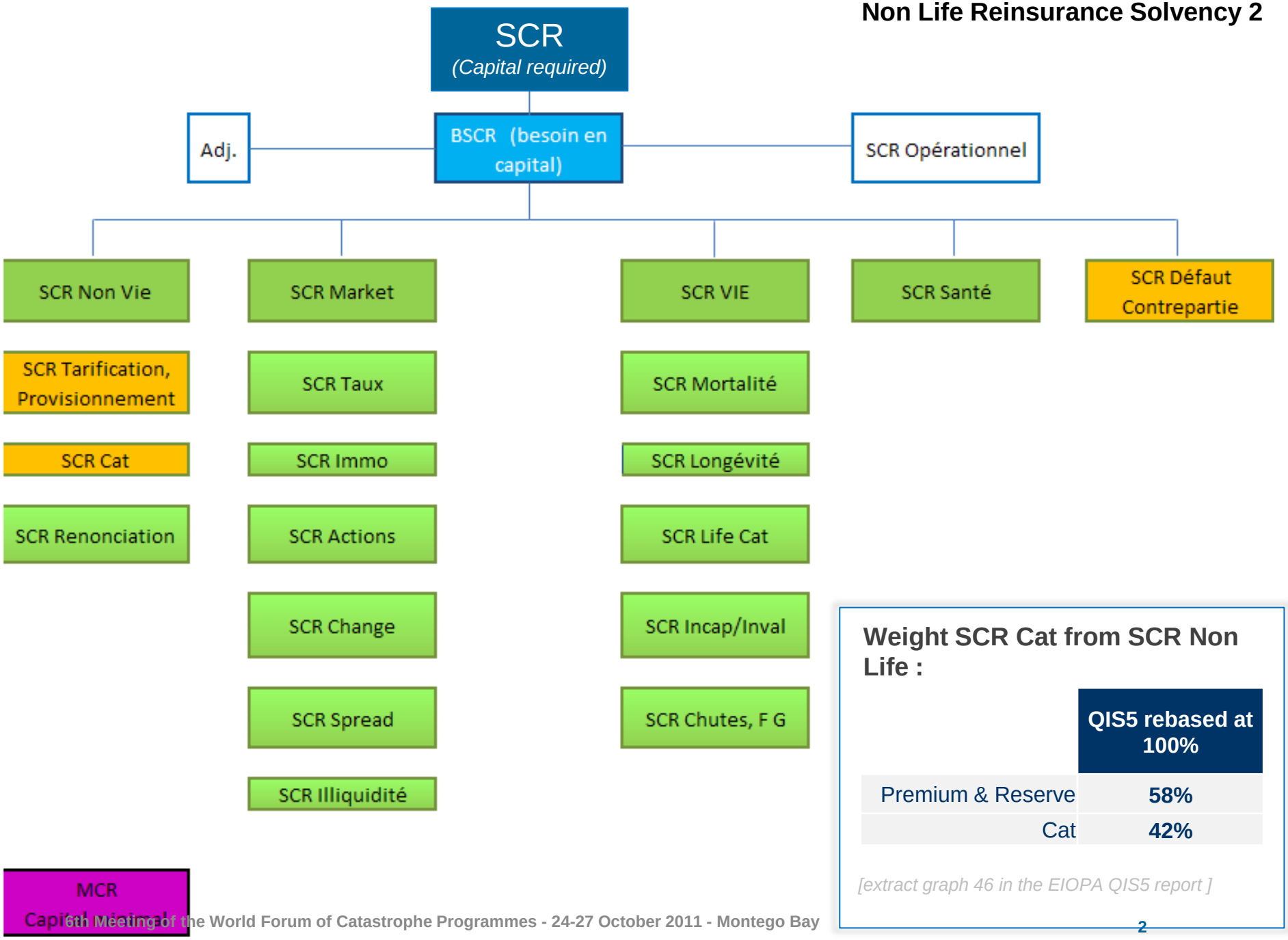
SOLVENCY 2 and reinsurance

- Flight to quality and detailed GIS exposure knowledge imposed by regulators...
- 200 year return period reference, higher than current level of protections
  - E.g. : Lothar + Martin are considered to be 70 years return period
- Solvency 2 does not impose as such reinsurance purchase at 200 years, but influence the **risk appetite** consideration during strategy discussions.
- With a stable portfolio, the exposure **remains the same**. Exposure perception could change depending on model version. …

Non Life Reinsurance Solvency 2



Weight SCR Cat from SCR Non Life :

	QIS5 rebased at 100%
Premium & Reserve	**58%**
Cat	**42%**

[extract graph 46 in the EIOPA QIS5 report]

Main components of cat risk under S2

- Nat Cat
  - For each peril : capital required = correlated sum of capital required in each country, using correlation matrix
  - Exemple storm: France is correlated to
    - Luxembourg with 75%,
    - Germany, Belgium, The Netherlands and Switzerland with 50%,
    - Austria, Denmark, Spain, Czech Republic and United Kingdom with 25%.
  - Aggregated sum between perils :

	Windstorm	Earthquake	Flood	Hail	Subsidence
Windstorm	1.00				
Earthquake	0.00	1.00			
Flood	0.25	0.00	1.00		
Hail	0.25	0.00	0.00	1.00	
Subsidence	0.00	0.00	0.00	0.00	1.00

- Man made Cat
  - Considered independent between themselves
  - All lob, incl. Marine, Aviation, MTPL, TPL, Fire, Terrorism.
- SCRCAT
  - Independance between Nat and Man made.

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SOLVENCY 2 Standard Formula for 200 years

- How is it applied? On estimated insured Values

Perils for France 200 years return period

% of Sum Insured

	Mainland	Guadeloupe	Martinique	St Martin	Réunion
Storm	0,12%	2,74%	3,19%	5,16%	2,50%
Flood	0,10%				
Drought/residential	0,05%				
Earthquake	0,06%	4,09%	4,71%	5%	
Hail	0,01%				

Outside France Mainland: coefficients amongst the highest

- Mesure of the cumulative annual losses or the loss occuring from one event?
- Approch multi medium events (3,4,5) also appropriated
  - Lots of programmes are designed for one or two large events
  - Covers for multi perils retention are seen more and more often.

Are we so dependent on cat models?

- Important differences between editors
- Versioning / market consensus
  - European storms
  - Cyclones in West Indies (augmentation 70%)
  - ILS Cat Bond with editor and version reference AND review clause
- Stand alone peril Modelling > multi perils

- Cover purchase «150 years rp XS 50 years rp »

Karen Clark said the industry had grown too dependent on cat models and "***stopped thinking about risks independently***."

She stressed that models are **not absolute truths**, but rather tools that offer **generalized best estimates**. They can contain uncertainties, limitations and even inaccuracies, she warned, insisting they are **not designed to replace underwriters** or be the final word on which risks are acceptable to an insurer.

"Modelers are limited by the lack of scientific data" but some modeled catastrophes have little historical data associated with them

→ **Memory backup, including from archives research made by historians.**

Sommes-nous tant dépendants des modèles commerciaux?

- Différences importantes entre éditeurs

Layer	Experience		Agence de modélisation				
	Fit	Burn	DLM80WS	CLA10WS	CAT10WS	EQE31WS	…
1	5,71%	8,82%	6,58%	1,07%	16,20%	6,30%	
2	2,71%	7,41%	2,98%	0,56%	8,40%	2,37%	
3	1,76%	4,49%	1,76%	0,29%	5,10%	0,98%	
4	1,30%	1,88%	1,18%	0,19%	3,30%	0,50%	

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Differences between pricing approaches

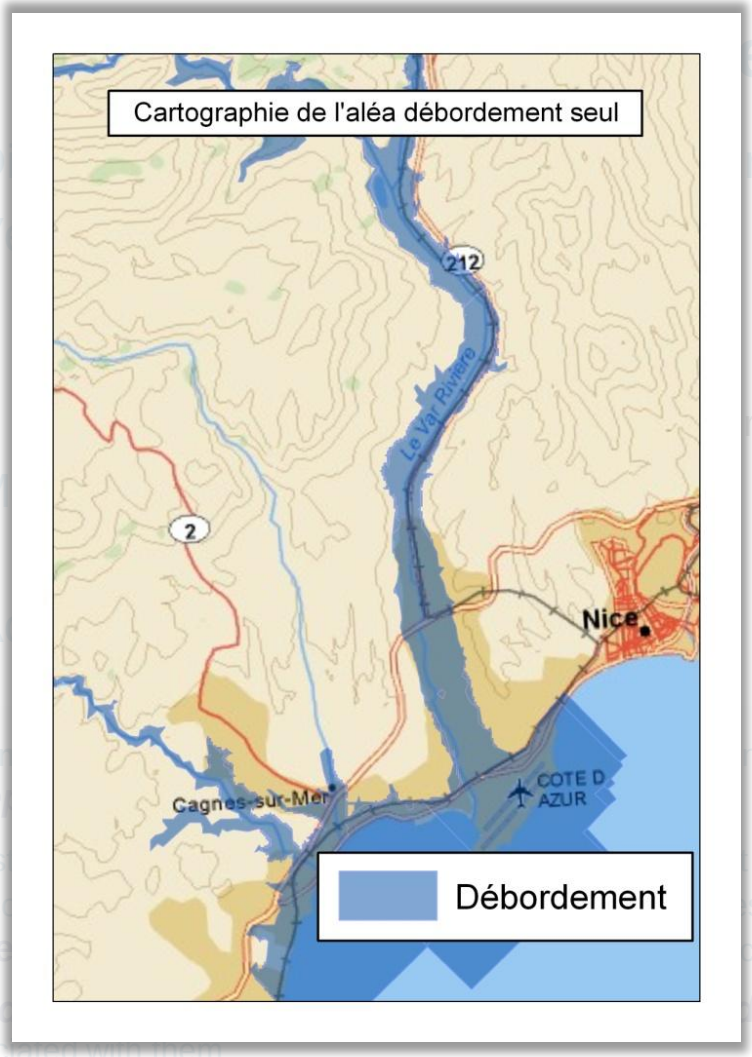
"Modelers are limited by the lack of scientific data" but some modeled catastrophes have little historical data associated with them **> *récupération de la mémoire, y compris dans les archives par des historiens.***

Sommes-nous tant dépendants des modèles commerciaux?

Limit	350 000 000	350 000 000
Prio	50 000 000	50 000 000
MEAN	22 750 225	12 655 136
STD	82 477 259	38 251 153
Variation Charged	30%	30%
Technical pure	47 493 403	24 130 482
ROL pur	13,6%	6,9%

Versionning Impact

Source : CCR, 2011



Exemple Cat Nat in France : floods – surface and flash.

Need to take the perils with all their complexities

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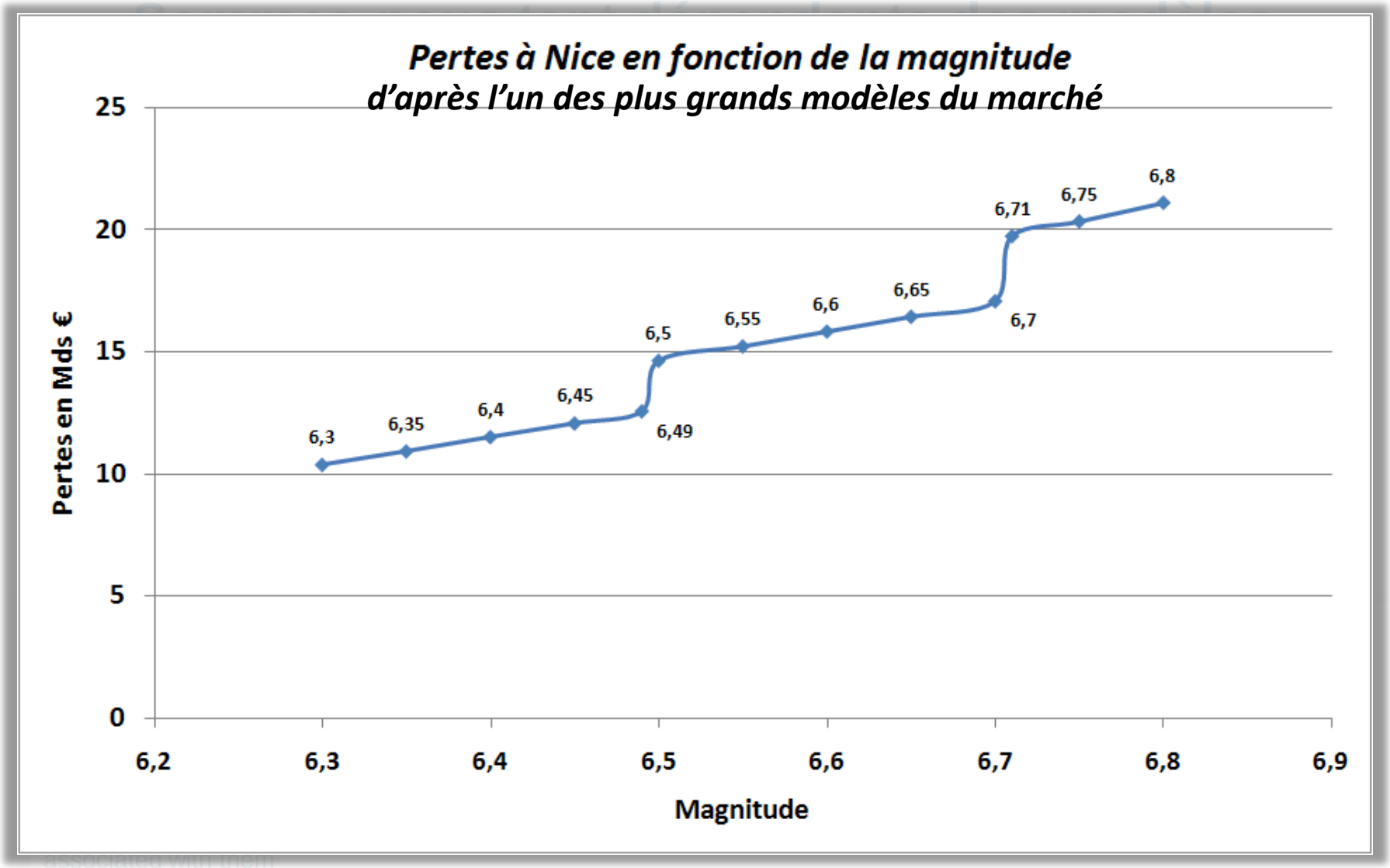
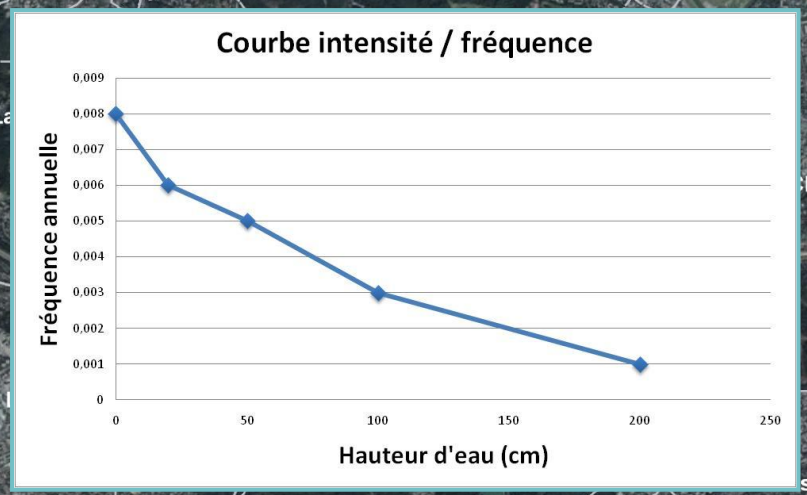


Exemple Cat Nat in France : earthquake

Need to keep a critical eye on maket consensus

Cartographie de l'aléa débordement probabiliste



Merci de votre attention

CCR™ 100% Réassureur

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