



Association Française du Génie Parasismique  
French Association for Earthquake Engineering

**History of earthquake engineering, lessons  
learnt and outcomes on today practice;  
Perspective from different countries**

Workshop, Acropolis, Nice, 13 June 2008

**Introduction ; Situation in France**

Pierre Labbé



## About AFPS

- Created in 2003
- 700 individuals from 26 countries, 30 organizations
- Geologists, Seismologists, Civil Engineers, Mechanical Engineers, Architects, Sociologists, Decision makers ...

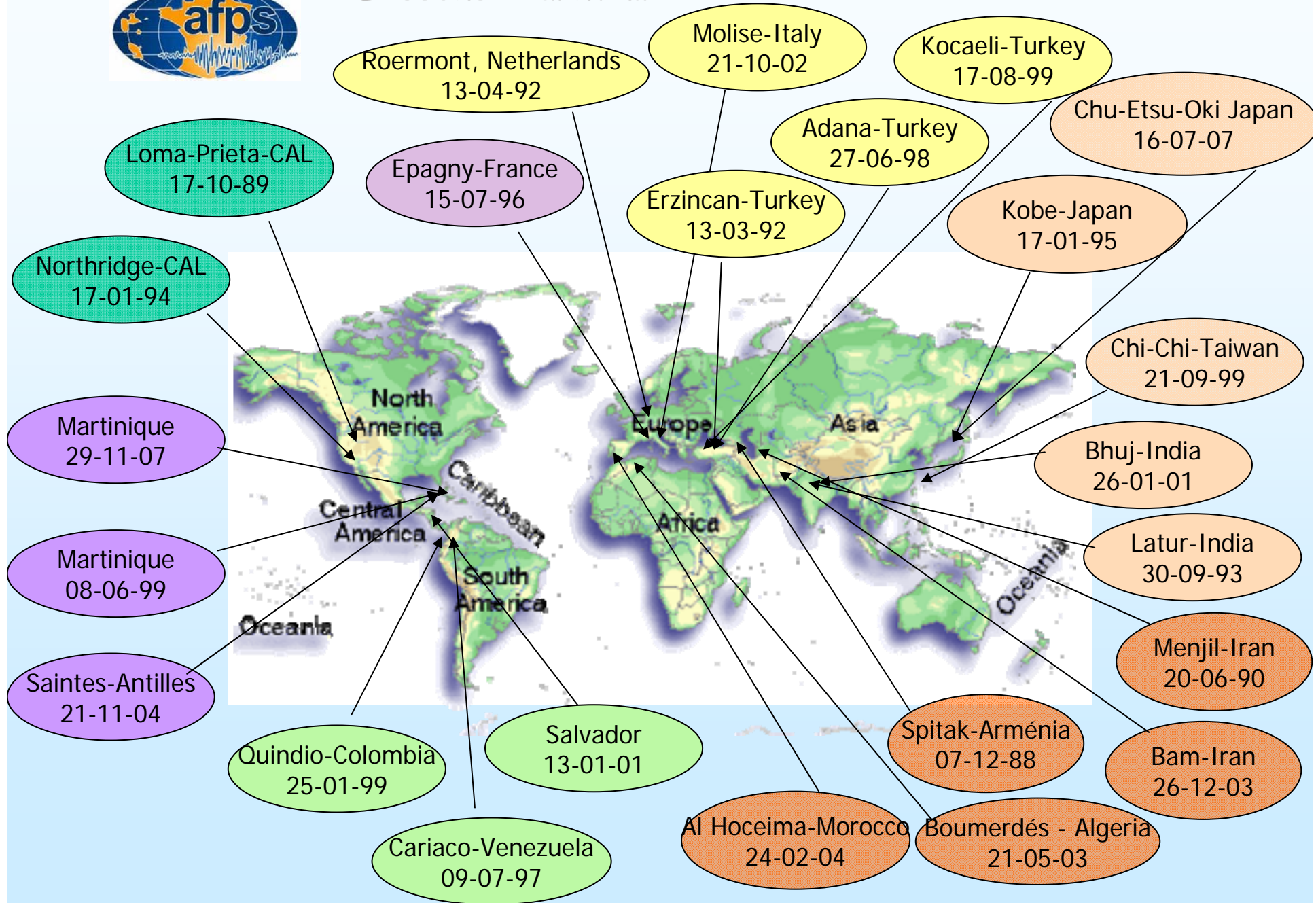
AFPS published recommendations, which are a basis for French and European seismic building codes. It is currently deeply involved in the « National program for earthquake risk mitigation » recently launched by the French Government.

AFPS organized several international conferences:

- 5<sup>th</sup> International conference on seismic microzonation, 1995
- 18<sup>th</sup> European seminar on earthquake engineering, 1995
- 11<sup>th</sup> European conference on earthquake engineering, 1998

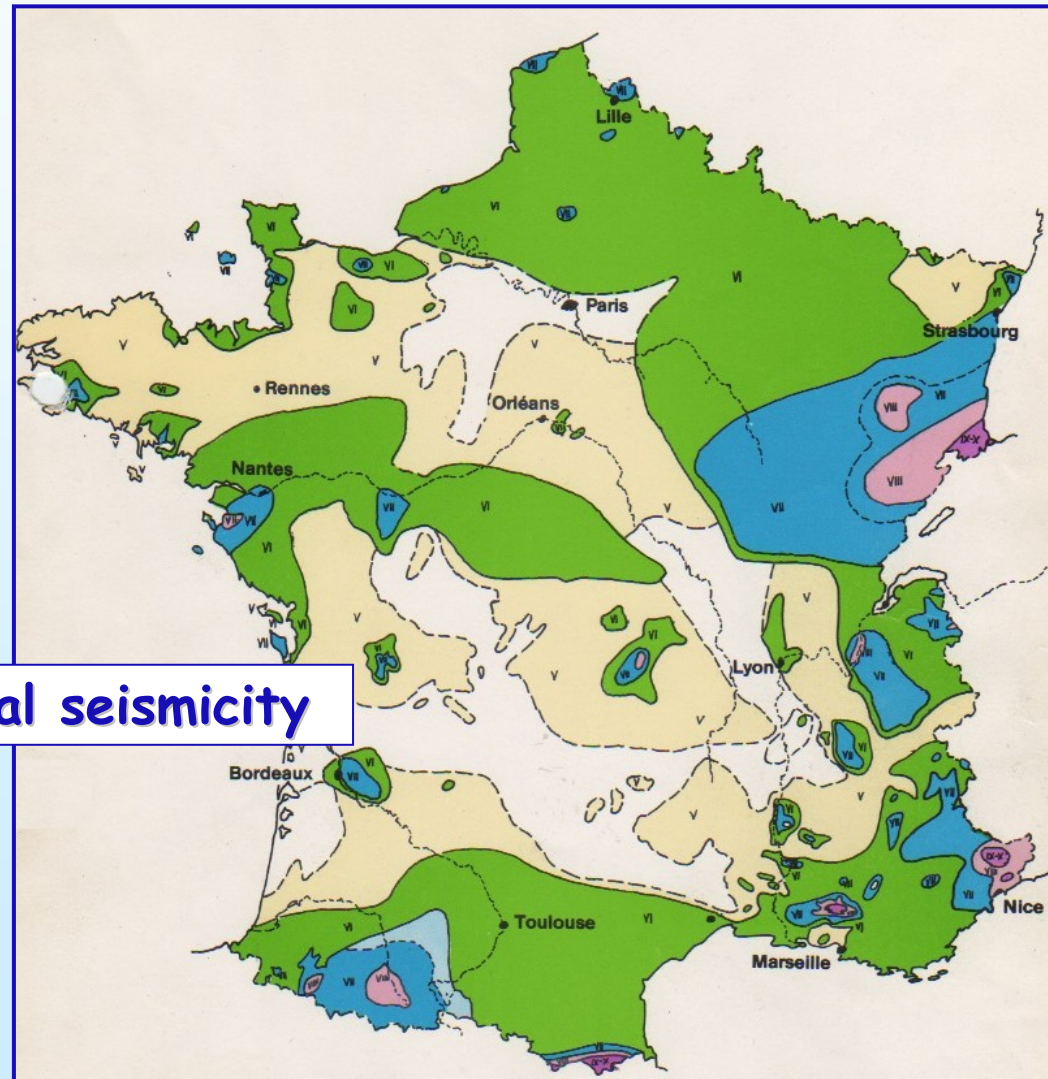


## Lessons learnt ...





# Historical seismicity of Metropolitan France



1000 years of historical seismicity



# Historical seismicity of Metropolitan France

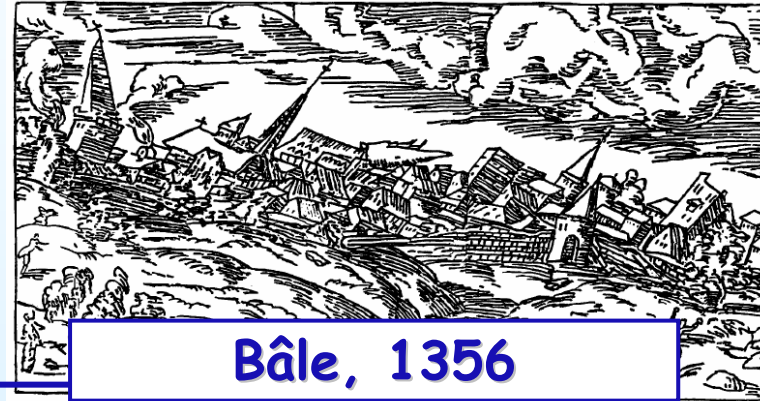
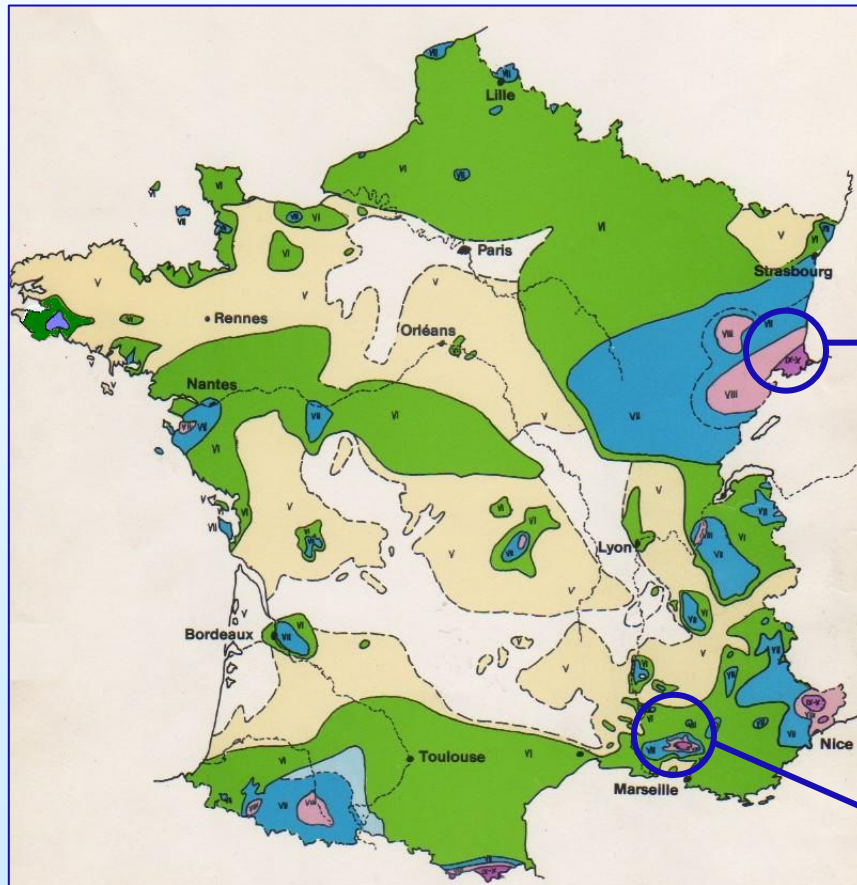
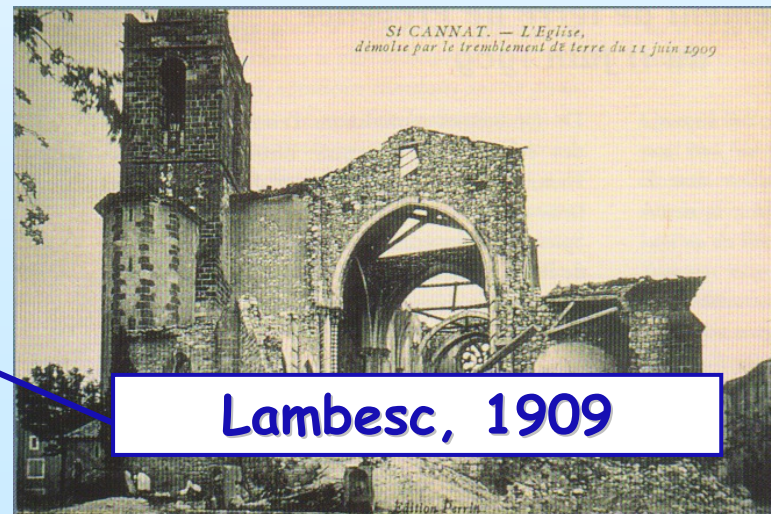


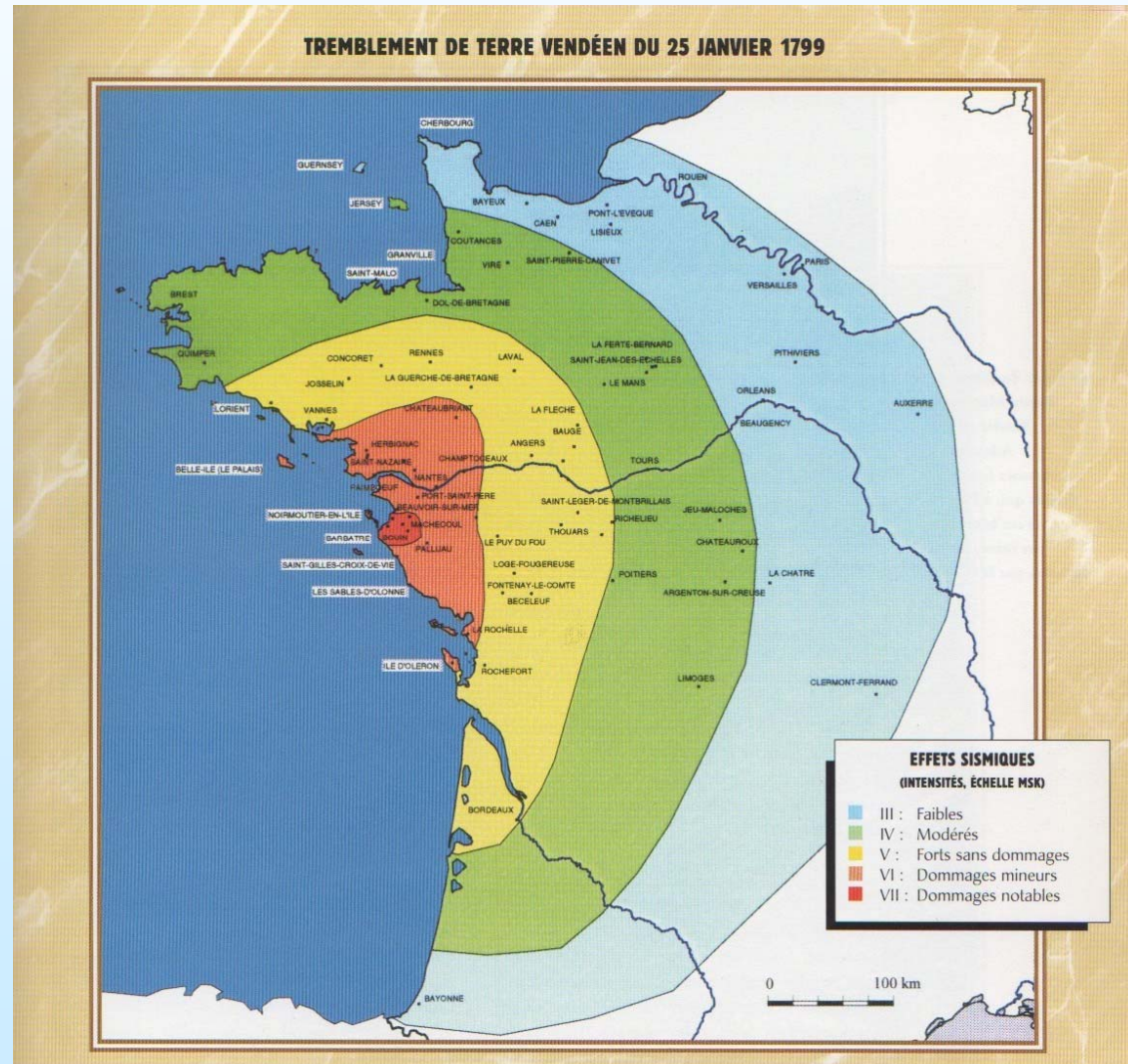
Figure 1. Illustration du séisme destructeur de Bâle  
*Brand- und Erdbebenkatastrophen im mittelalterlichen Basel*





# Historical seismicity of Metropolitan France

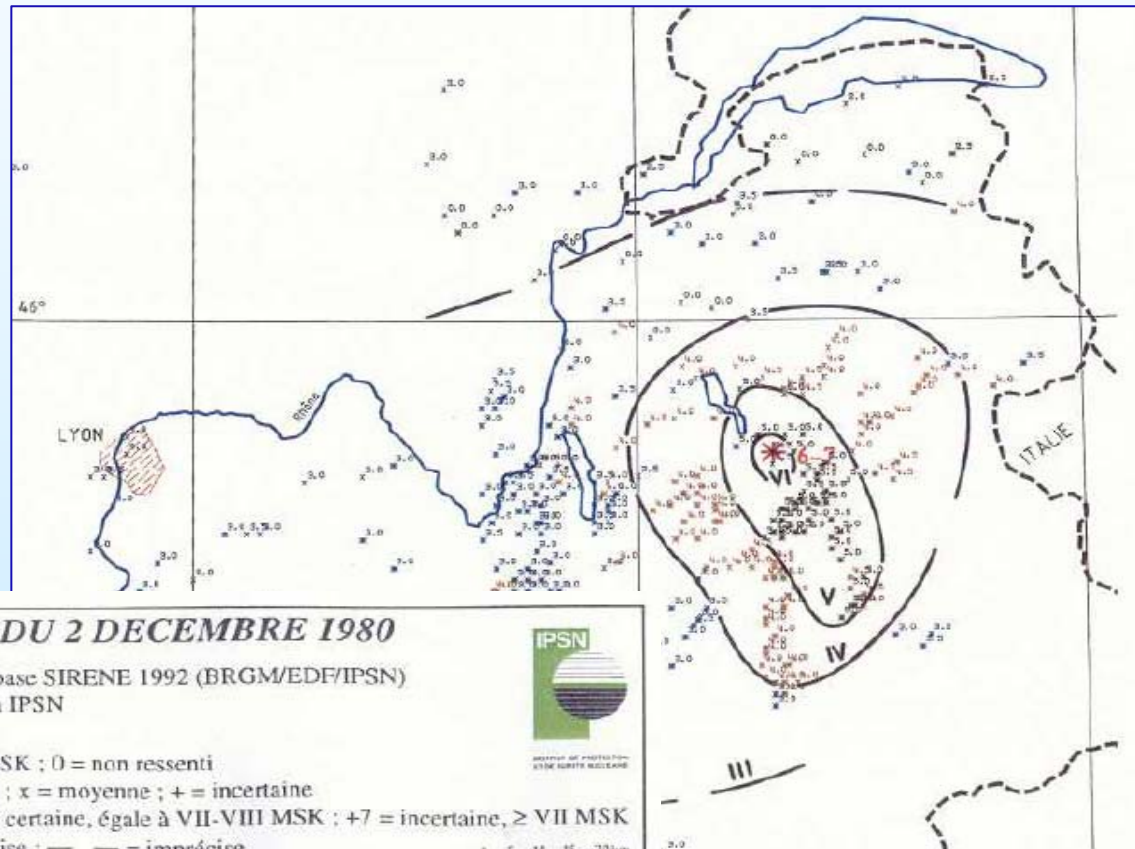
An example of extreme historical event





# Historical seismicity of Metropolitan France


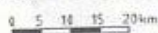
Most events of last century are well documented



**SEISME DU 2 DECEMBRE 1980**

Intensités ponctuelles : extrait de la base SIRENE 1992 (BRGM/EDF/IPSN)  
 Isoséistes et épicerentre : interprétation IPSN

**Légende** :- intensité : 6,5 = VI-VII MSK ; 0 = non ressenti  
 qualité : + = bonne ; x = moyenne ; += incertaine  
 - intensité épicerentrale : 7-8 = certaine, égale à VII-VIII MSK ; +7 = incertaine, ≥ VII MSK  
 - isoséiste : ————— = précise ; - - - = imprécise

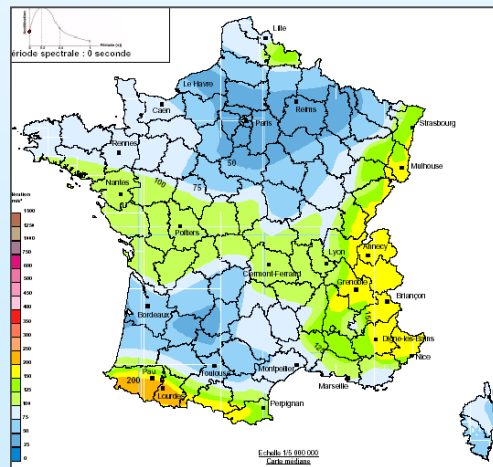
  
INSTITUT FRANÇAIS DU PARASISME  
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# Outcomes on today practice

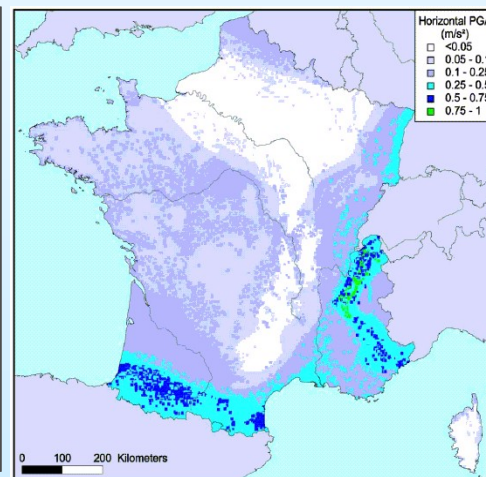
In France, PSHA (Probabilistic Seismic Hazard Assessment) implementations are controversial and result in a wide range of estimated hazard.

2002



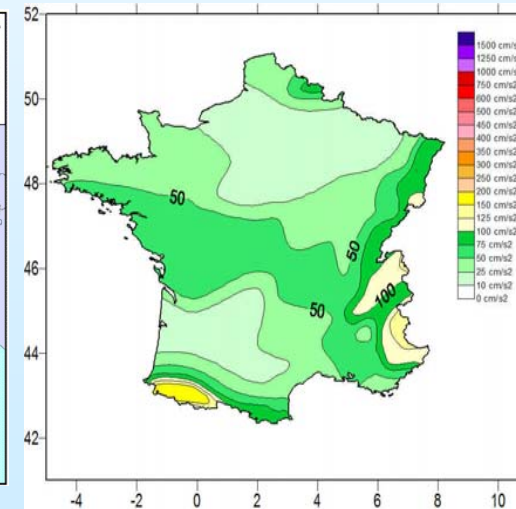
Average PGA:  $0,95 \text{ ms}^{-2}$

2004



$0,14 \text{ ms}^{-2}$

2006

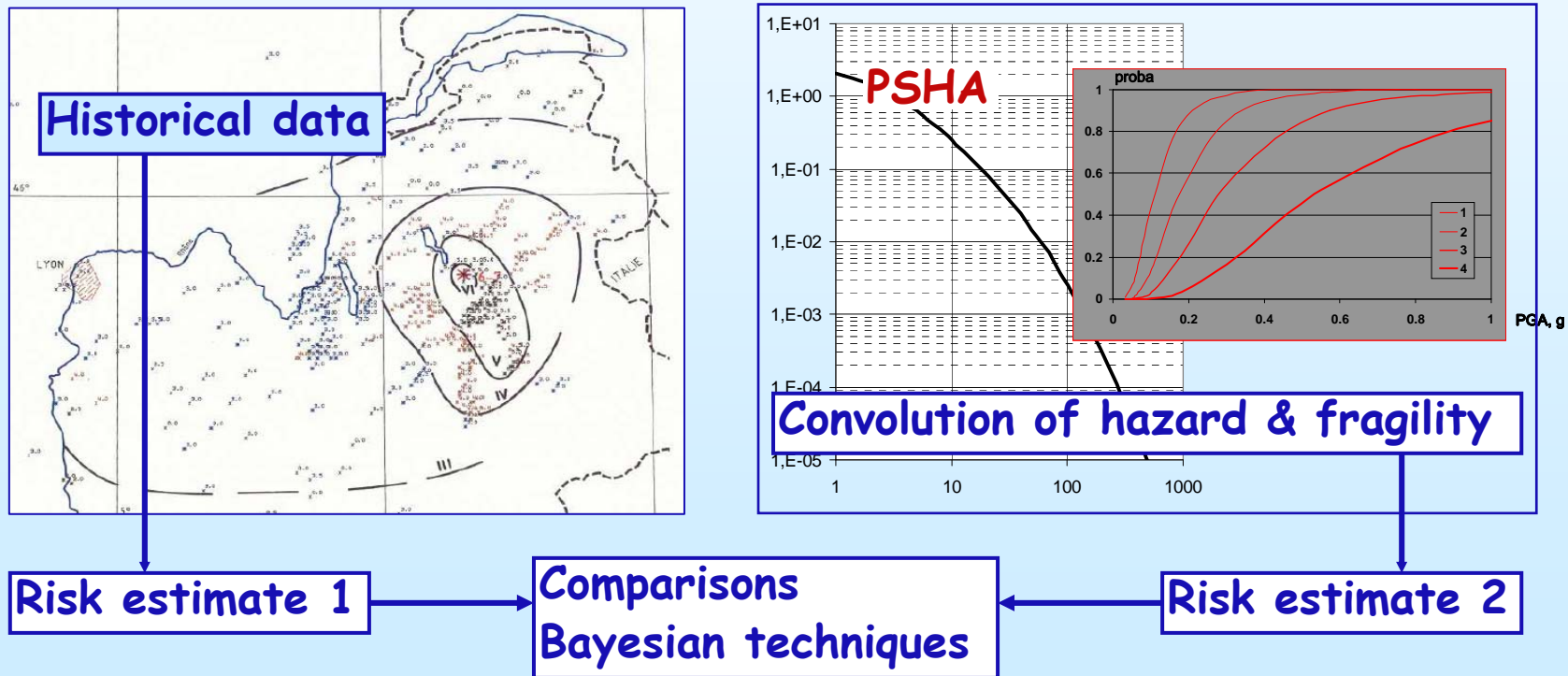


$0,48 \text{ ms}^{-2}$



# Outcomes on today practice

Introducing seismic risk and processing data relating to historical seismicity can help reducing uncertainties in PSHAs.





## Conclusion

Today, we have at our disposal more and more data of instrumental seismicity. However, investigating historical seismicity is still of major interest to enhance progress in earthquake engineering.

Knowledge of historical seismicity helps understanding and quantifying seismic risk, for the benefit of our populations.