



Fault2SHA- A European Working group to link faults and Probabilistic Seismic Hazard Assessment communities in Europe

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The key questions we ask are: What is the best strategy to fill in the gap in knowledge and know-how in Europe when considering faults in seismic hazard assessments? Are field geologists providing the relevant information for seismic hazard assessment? Are seismic hazard analysts interpreting field data appropriately? Is the full range of uncertainties associated with the characterization of faults correctly understood and propagated in the computations? How can fault-modellers contribute to a better representation of the long-term behaviour of fault-networks in seismic hazard studies?

Providing answers to these questions is fundamental, in order to reduce the consequences of future earthquakes and improve the reliability of seismic hazard assessments. An informal working group was thus created at a meeting in Paris in November 2014, partly financed by the Institute of Radioprotection and Nuclear Safety, with the aim to motivate exchanges between field geologists, fault modellers and seismic hazard practitioners. A variety of approaches were presented at the meeting and a clear gap emerged between some field geologists, that are not necessarily familiar with probabilistic seismic hazard assessment methods and needs and practitioners that do not necessarily propagate the "full" uncertainty associated with the characterization of faults. The group thus decided to meet again a year later in Chieti (Italy), to share concepts and ideas through a specific exercise on a test case study. Some solutions emerged but many problems of seismic source characterizations with people working in the field as well as with people tackling models of interacting faults remained.

Now, in Wien, we want to open the group and launch a call for the European community at large to contribute to the discussion. The 2016 EGU session Fault2SHA is motivated by such an urgency to increase the number of round tables on this topic and debate on the peculiarities of using faults in seismic hazard assessment in Europe. Europe is a country dominated by slow deforming regions where the long histories of seismicity are the main source of information to infer fault behaviour. Geodetic studies, geomorphological studies as well as paleoseismological studies are welcome complementary data that are slowly filling in the database but are at present insufficient, by themselves, to allow characterizing faults. Moreover, Europe is characterized by complex fault systems (Upper Rhine Graben, Central and Southern Apennines, Corinth, etc.) and the degree of uncertainty in the characterization of the faults can be very different from one country to the other. This requires developing approaches and concepts that are adapted to the European context. It is thus the specificity of the European situation that motivates the creation of a predominantly European group where field geologists, fault modellers and fault-PSHA practitioners may exchange and learn from each other's experience.