## Seismic Hazard Assessment Problem in a Big Data World

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The digital revolution began just about 15 years ago has already surpassed the global information storage capacity of more than 5000 Exabytes ($5 \times 10^{21}$ bytes) per year. Open data in a Big Data World provide unprecedented opportunities for enhancing studies of the Earth System. However, they also open wide avenues for deceptive associations in inter- and transdisciplinary data and for inflicted misleading predictions based on so-called "precursors". Seismic hazard assessment is not an easy task that implies a delicate application of statistics. Regretfully, in many cases of seismic hazard assessment (SHA), from term-less to time-dependent (probabilistic PSHA or deterministic DSHA), and short-term earthquake forecasting (StEF), the claims of a high potential of the method are based on a flawed application of statistics and, therefore, are hardly suitable for communication to decision makers. In particular, none of the proposed short-term precursory signals showed sufficient evidence to be used as a reliable precursor of catastrophic earthquakes. Self-testing must be done in advance claiming prediction of hazardous areas and/or times. The possibility of applying simple tools of Earthquake Prediction Strategies, including the Error Diagram, introduced by G.M. Molchan in the early 1990ies, and Seismic Roulette null-hypothesis as a metric of the alerted space, is evident. The set of errors, i.e. the rates of failure and of the alerted space-time volume, can easily be compared to random guessing, which comparison permits evaluating the SHA method effectiveness and determining the optimal choice of parameters in regard to a given cost-benefit function. These and other information obtained in such a simple testing may supply us wita realistic estimates of confidence and accuracy of SHA predictions and, if reliable but not necessarily perfect, with related recommendations on the level of risks for decision making in regard to engineering design, insurance, and emergency management.

Some examples of independent expertise of "seismic hazard maps", "precursors", and "forecast/prediction methods" will be provided.