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The legal status of uncertainty

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Authorities of civil protection are giving extreme importance to the scientific assessment throughout the widespread use of mathematical models that have been implemented in order to prevent and mitigate the effect of natural hazards. These models, however, are far from deterministic; moreover, the uncertainty that characterizes them plays an important role in the scheme of prevention of natural hazards. We are, in fact, presently experiencing a detrimental increase of legal actions taken against the authorities of civil protection whom, relying on the forecasts of mathematical models, fail in protecting the population. It is our profound concern that civilians have granted the right of being protected by any means, and at the same extent, from natural hazards and from the fallacious behaviour of whom should grant individual safety. But, at the same time, a dangerous overcriminalization could have a negative impact on the Civil Protection system inducing a dangerous defensive behaviour which is costly and ineffective. A few case studies are presented in which the role of uncertainty, in numerical predictions, is made evident and discussed.
Scientists, thus, need to help policymakers to agree on sound procedures that must recognize the real level of unpredictability. Hence, we suggest the creation of an international and interdisciplinary committee, with the scope of having politics, jurisprudence and science communicate, to find common solutions to a common problem.