Geophysical Research Abstracts, Vol. 9, 01695, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-01695

Social impact of earthquake prediction

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Every earthquake prediction improves our knowledge of the basic science, whether it is successful or no. On the other hand, a failure to predict, or even worse, a false alarm may have serious impact on the public credibility of the science and cause a future valid prediction to be ignored. In order to avoid such a scenario, those who would predict these cataclysms would do well to

1. Explain the physics involved in a clear, non-technical, way
2. Explain the uncertainties that result from the limitations of the data in a way that can be understood by public administrators with limited attention span and limited knowledge of the subtlety of statistics of rare events
3. Be prepared to deal rationally with “predictions” based on non-conventional evidence

Influencing public policy with such science is in principle no different from presenting hurricane forecasts, the effect of climate change, or the health hazards of smoking to the public. There is a requirement for public education and once that is in place public policy will follow. Unfortunately the level of public understanding of earthquake science is very far behind the understanding that exists in the scientific community. In this discussion I will try to illustrate the educational requirements with a very personal review of the impact of earthquake prediction research from 1970 to the present.