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L'Aquila earthquake in 2009 and the international commission on operational earthquake forecast

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The L'Aquila earthquake of 6 April 2009, which has a moment magnitude of 6.3, struck central Italy near L'Aquila, killing over 300 people, injuring 1500 people, destroying about 20,000 buildings and made more than 65,000 people relocated. Following this disastrous event, Italian government decided to organize an international commission for earthquake forecast. Based on the report of the commission, foreshock activity, including felt events, began in January 2009, and local community was getting worrying about disastrous event. The 'earthquake prediction' was made public by a technician of local institution based on radon observation, which generated widespread public concern. DPC and INGV responded with statements that there is no scientifically validated method for earthquake prediction. DPC also convened a national commission for great risk to conclude "there is no reason to say that the sequence of events of low magnitude can be considered as a precursor diagnostic of a strong event." The disastrous main shock, however, occurred 10 days after the meeting.

The international commission was authorized with the statement of charge, to report on the current state of knowledge of short-term prediction and forecast of tectonic earthquakes, and to indicate guidelines for utilization of possible forerunners of large earthquakes. The commission made an executive summary and recommendations to report it to DPC on 2 October 2009. Detailed full-report is presented to DPC in 2010. The recommendation includes needs for probabilistic earthquake forecasting, importance of earthquake monitoring and research on earthquake predictability etc., and finalized with utilization of earthquake forecast and public communication. The probabilistic evaluations of earthquake are often criticized to be difficult to understand for the public, but they provide quantitative, and objective information on the present ability of earthquake forecast, which prevent over-expectation by the public to earthquake forecast or prediction. The full report will be submitted some academic journal soon.

Keywords: earthquake prediction, prediction information, recommendation, Italy