Electronic supplement to
Retrospective evaluation of the five-year and ten-year CSEP-Italy earthquake forecasts

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Additional figures (Earthquake Forecasts, Likelihood Ratios, Concentration Diagrams) and Table of Information Gains

We here provide additional figures and a summary table of the information gains of all forecasts to help modelers identify potential weak features of their forecasts and to encourage model improvements. For the figures, we chose the 106-year CPTI target period as an illustration because it contains the most observations and thus presents the strongest tests. The information gains of the spatial component of the forecasts is provided for all target periods. The material presented here is also available in one file as a gzipped tar file Esupp.tar.gz.

Forecasts (Figures S1-S12)
The folder Forecasts contains maps of the spatial forecasts along with the target earthquakes.

Likelihood Ratios (Figures S13-S24)
The folder LikelihoodRatios contains maps of the likelihood ratios between the spatial forecasts and a uniform forecast (both normalized to sum to the 183 observed earthquakes). These maps identify which (spatial locations of) earthquakes are less likely given a forecast compared to a uniform forecast.

Concentration Diagrams (Figures S25-S36)
The folder ConcentrationDiagrams contains maps of the ratio of the normalized spatial forecasts over a uniform forecast along with concentration diagrams of the forecasts and the observations. A concentration diagram is constructed as follows. The forecast rates of all spatial bins are sorted in descending order. Their cumulative distribution is then plotted against the fraction of the total area that the cumulative rates cover. A uniform forecast with equal rate forecast in each bin thus falls on the diagonal. The number of observed earthquakes is now sorted according to the descending order of the forecast rates. The cumulative distribution of the observed earthquakes is then plotted against the fraction of the total area that the sorted cumulative rates cover. A concentration diagram provides a visual measure of the concentration (or smoothness) of a forecast, and whether this is matched by the observed distribution of earthquakes.

Table of Information Gains
The file contains a summary table with the information gains of all spatial forecasts over a spatially uniform forecast for all target periods.