

## First results of the Regional Earthquake Likelihood Models Experiment

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One of the primary objectives of the Regional Earthquake Likelihood Models (RELM) working group was to formalize earthquake occurrence hypotheses in the form of prospective earthquake rate forecasts in California. RELM members, working in small research groups, developed more than a dozen 5-year forecasts; they also outlined performance evaluation methods and provided a conceptual description of a Testing Center in which to perform predictability experiments. Subsequently, researchers working within the Collaboratory for the Study of Earthquake Predictability (CSEP) have begun implementing Testing Centers in different locations worldwide, and the RELM predictability experiment—a truly prospective earthquake prediction effort—is underway within the U.S. branch of CSEP. The experiment, designed to compare time-invariant 5-year earthquake rate forecasts, is now more than halfway to its completion. In this presentation, we describe the models under evaluation and present preliminary results of this unique experiment. While these results are preliminary—the forecasts were meant for an application of five years—we find interesting results: most of the models are consistent with the observation, and one model is identified as forecasting the distribution of earthquakes best. We discuss the observed sample of target earthquakes in the context of historical seismicity within the testing region, highlight potential pitfalls of the current tests, and present modified plans for future revisions to experiments such as this one.

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