

Current developments and results of the Collaboratory for the Study of Earthquake Predictability (CSEP)

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The Southern California Earthquake Center (SCEC) began development of the Collaboratory for the Study of Earthquake Predictability (CSEP) in January 2006 with funding provided by the W. M. Keck Foundation. Since that time, scientists and software engineers have developed the CSEP software for earthquake forecast testing. This development was guided by four design goals as proposed by the Regional Earthquake Likelihood Models (RELM) working group: controlled environment, transparency, comparability, and reproducibility. The W. M. Keck Foundation Testing Center at SCEC, designed to conduct computational earthquake forecast experiments in California, began operations on September 1, 2007 and has been improved, optimized, and extended over the past five years. As of February 2012, there are several testing centers established around the globe, with more than 200 forecasts being evaluated. We describe how the CSEP Testing Center software has been constructed to meet the design goals for rigorous testing and its current and future developments. We also present the ongoing forecast experiments and their results.

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