# CSEP earthquake forecast testing center for Japan: Primary scope and recent progress

# Hiroshi Tsuruoka[1]; Naoshi Hirata[2]; Danijel Schorlemmer[3]; Fabian Euchner[4]; Kazuyoshi Nanjo[5]; Tom Jordan[3]

[1] ERI, Univ. of Tokyo; [2] ERI, Univ. Tokyo; [3] SCEC; [4] SED, ETHZ; [5] ERI

Existing Japanese research projects aiming at the realization of scientific earthquake prediction have so far focused on better understanding of the mechanism of earthquake occurrence and the development of forecast simulation technologies based on physical modeling of earthquakes. However, the building of a framework for rigorous testing of earthquake forecasts and the creation of testable forecast models have never been central problems to solve for the earthquake related research. This is now a key challenge under the national 'Observation and Research Program for Prediction of Earthquake and Volcanic Eruption (2009-2013)'. For this purpose, the Earthquake Research Institute (ERI) jointed the global 'Collaboratory for the Study of Earthquake Predictability (CSEP)'. ERI implemented a prototype of the Japanese Testing Center for evaluating earthquake forecasts since 1 September 2008. In this presentation, we first give a brief review of the primary scope of the Testing Center at ERI, which consists of several elements: (1) the quality characterization of the earthquake catalog data stream from the Japan Meteorological Agency (JMA) for the period from 2000 to present; (2) the definition of the existing testing region; (3) the first test results that are based on a set of three one-year smoothed-seismicity models under evaluation. Extending such framework, we formally start conducting the comparative forecast experimental research in 2009. For this purpose, we next explain 'the rules of the game' of the experiment to invite testable forecast models. Some modelers may need the model optimization based on using seismicity data for longer periods rather than the period since 2000. Therefore, we then present an initial report on the examination of the quality characterization for the period back to 1923. The result together with (1) allows us to move toward constructing a space-time history of the quality characterization as a baseline for model development and testing for Japan.