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Study on Synthesized Probability Gains Model for Earthquake Forecast and the Risk Estimation in China in 2006-2020

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The spatial and temporal synthesized probability gain model for middle and long-term earthquake forecast and the evaluation of forecast efficiency (R-values) of various forecast methods are introduced first by Wang et al. (1996) and further developed into a serial models including forecast efficiency assessment model (case study method), earthquake forecast model of single precursory index and synthetic forecast model with multi-precursory index forecast results in this paper. According to the new models and methodology, six forecast indices were selected to estimate the R-value and forecast the risk area distribution in China in 2006-2020. Additional spatial risk probability distribution map in 2006-2020 estimated synthetically according to the above risk area distribution is obtained. The basic models, R-value and probability estimation results are introduced in the paper.