Seismicity models for moderate earthquakes in Kanto, central Japan, based on three parameters

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We introduce a procedure to construct a model of earthquake probability based on multi-disciplinary parameters, where we assume normal distributions for two type of probability densities, those associated with the vicinity of target events (conditional density distributions) and those not associated with them (background density distributions), empirically obtained from each discipline. Applying this procedure, we attempt to construct a model of moderate size earthquakes in Kanto, central Japan, based on three parameters; the a and b values of the Gutenberg-Richter relation, and a parameter expressing changes in mean event size. These parameters are transformed by appropriate relations so that new parameters are normally distributed, which enables following the procedure. The model thus obtained performs better than the model as a simple summation of IGpe values of each parameter both in the model period and its succession period.