

Probabilistic model to forecast earthquakes in the Zemmouri (Algeria) seismoactive area on the basis of moment magnitude scale distribution functions

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Abstract

Based on the moment magnitude scale, a probabilistic model was developed to predict the occurrences of strong earthquakes in the seismoactive area of Zemmouri, Algeria. Firstly, the distributions of earthquake magnitudes M_i were described using the [distribution function](#) $F_0(m)$, which adjusts the magnitudes considered as independent [random variables](#). Secondly, the obtained result, i. e., the distribution function $F_0(m)$ of the variables M_i was used to deduce the distribution functions $G(x)$ and $H(y)$ of the variables $Y_i = \text{Log } M_{0,i}$ and $Z_i = M_{0,i}$, where $(Y_i)_i$ and $(Z_i)_i$ are independent. Thirdly, some forecast for moments of the future earthquakes in the studied area is given. © 2012 Versita Warsaw and Springer-Verlag Wien.

Author keywords

prediction; probabilistic model; seismic magnitude scale; Zemmouri seismoactive area

Indexed keywords

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