

论文

华北地区 $M \geq 6.5$ 级地震震源断层参数的研究

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摘要 本文根据地震和地震构造等资料, 研究华北地区公元1300年以来 $M \geq 6.5$ 级地震的发震断裂的基本参数. 利用1966年以来隆尧、海城、渤海和唐山等有仪器记录的地震的相关参数进行回归分析得出了地震烈度Ⅷ度区长轴长度与余震区长轴长度的回归关系式及震级与震源体破裂长度的回归关系式. 用余震区长轴长度代替震源体的破裂长度, 从而给出各次地震的震源断层破裂长度. 利用地震测深的地壳结构构造剖面、地震序列的震源分布、壳内低速层和地壳上部的构造、盆地构造与居里面分布和已知地震震源分布等资料推断了震源破裂的上下界. 基于一定的合理假定推导出了断层滑动角的估计方法, 并应用于本研究区, 得出了各次事件的断层滑动角.

关键词 [华北地区](#) [震源断层](#) [破裂](#) [参数](#)

分类号

DOI:

Analysis on the parameters of seismogenic fault of the earthquake more than 6.5 in North China

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Abstract Based on the data of historical earthquakes and seismotectonic we analysed the parameters of seismogenic fault of the earthquakes more than $M \geq 6.5$ occurred in North of China since 1300 A.D.. Using the earthquake parameters of Longyao, Haicheng, Bohai Sea and Tangshan earthquakes since 1968 A.D. We studied and developed the regression equations between the length of long axis of VIII isoseismal curve and long axis of aftershock series as well as earthquake magnitude and the long axis of aftershock series. Using the long axis of aftershock series instead of the length of seismogenic fault, we gave the length of seismogenic fault of earthquake occurred in Huabei of China since 1300 A.D.. On studying the data of explosion seismic sounding profile of crustal structure and tectonic, focal distribution of aftershock series, low velocity belts in the crust and tectonic of upcrust, basin's tectonic and distribution of Curie surface and distribution of known earthquake focal we implied the rupture width of seismogenic fault. Under some reasonable hypothesis we calculated the displacement of the seismogenic fault and the rakeangle on the fault plane.

Key words

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