

论文

汶川地震震后大成都地区断裂带活动性氡气测量分析评价

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摘要:

本文运用活动断裂剖面上的土壤氡气浓度测量,对大成都地区断裂的位置、范围和活动性进行监测,监测结果表明汶川地震对大成都地区断裂带有较大的影响。通过对北川断裂虹口剖面、彭灌断裂小渔洞剖面、彭灌断裂中坝剖面、彭灌断裂白鹿剖面以及新津-蒲江断裂剖面进行监测,从测量结果分析可知:断裂剖面土壤氡浓度背景高于无断裂带地区,且受地震影响较大,距汶川地震震中越近,断裂剖面土壤氡浓度值越高;断裂剖面氡浓度异常阈值与背景值之比均不大于3,最大值与背景值之比均小于5。结合测量地点的地形、表层土壤结构等地质条件,对大成都地区震后活动断裂的相对活动性的强弱进行科学评价,认为目前大成都地区并无活动性极强的断裂,且北川断裂与新津-蒲江断裂的活动性高于彭灌断裂。

关键词: 断裂活动性 氡测量 地球化学异常 评价

ANALYSIS AND EVALUATION OF FAULTS ACTIVITIES IN CHENGDU REGION WITH RADON CONCENTRATION MEASUREMENTS AFTER WENCHUAN EARTHQUAKE

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Abstract:

This paper uses radon concentration measurements on the profile of active fault to assess the position, scope and activity of faults in Chengdu Region. It can be found that Wenchuan Earthquake affected faults strongly. The radon concentrations were monitored on profiles of Beichuan Fault, Pengguan Fault and Xinjin-Pujiang Fault. The results indicate that the background radon concentration on the profile of active faults is higher than other places. The closer to the epicenter, the higher the value of radon concentration on the profile of active faults. By data processing, the ratios of radon anomaly threshold value to background value of radon concentration are no more than three and the ratios of maximum radon concentration to background value of radon concentration are less than five. Considering the geological conditions of measurement location such as the topography and surface soil structure, the activities of active faults in Chengdu region are evaluated after the earthquake. There is no fault with high level of activity in Chengdu region. Moreover, the activity of Beichuan Fault and Xinjin-Pujiang Fault is higher than that of Pengguan Fault.

Keywords: Fault activity, Radon survey, Geochemical anomalies, Evaluation

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