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西北太平洋$M_S \geqslant 7.8$级强震影响我国月季降水场的过程分析

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摘要 地震与气候变化的关系现已成为一个研究热点.本文根据地球流体力学的长波理论，研究了强震地热涡的长波运动特性；分析了西太平洋$M_S \geqslant 7.8$级强震与我国月降水场的对应关系.研究结果表明,与强震相伴的地热涡尺度超过850 km时，它会向西退行，从而影响我国月季降水场的相应演变.利用上述结果，对2007年我国汛期降水分布进行了预报，实况证明此方法可行.

关键词 强地震 月季降水场 气候预测 西北太平洋

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Analysis of the influence of great earthquakes($M_S \geqslant 7.8$) in northwest pacific ocean on the monthly-seasonal rainfall processes in China

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Abstract The relationship between earthquake and climatic change has become a hotspot in geosciences with the upgrading of our understanding of the earth system. Based on the long wave theory in Geophysical Fluid Dynamics, we studied the long wave features of Geothermal Vortexes accompanied by strong earthquakes, and analyzed the corresponding patterns of strong earthquakes($M_S \geqslant 7.8$) in northwest Pacific ocean and the monthly precipitation fields in China. The result shows that when the scale of Geothermal Vortex accompanied by strong earthquake is larger than 850km, the Geothermal Vortex will move westward, 〖JP2〗as a result, it will have impact on the evolution of monthly-seasonal precipitation field in China. From the result above, we predicted the flood season′s precipitation in 2007 in China, the observed precipitation proved our prediction well.

Key words Strong earthquake; Monthly-seasonal precipitation field; Climate prediction;Northwest Pacific ocean

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