Spatial Distribution of the Earthquake in Mainland China

Yuan-Chao Yang[1], Hong-Kai Zhang[2], Ying-Ze Li[3]
[1]Department of Mathematics and Statistics, Beijing Institute of Technology, Beijing, 100081, China
[2]Department of Mathematics and Statistics, Beijing Institute of Technology, Beijing, 100081, China
[3]Department of Mathematics and Statistics, Beijing Institute of Technology, Beijing, 100081, China

Abstract

Based on the earthquake data of mainland China from 1970 to 2016, we study the spatial distribution of earthquake in mainland China. We find that the spatial distribution of earthquake in mainland China is not random, but it is related to the distance from the Pacific Ocean. We also find that the spatial distribution of earthquake in mainland China is related to the distance from the Tibetan Plateau. We use the Poisson regression model to fit the spatial distribution of earthquake in mainland China. We find that the Poisson regression model can not fit the spatial distribution of earthquake in mainland China. We use the Poisson regression model with spatial effect to fit the spatial distribution of earthquake in mainland China. We find that the Poisson regression model with spatial effect can fit the spatial distribution of earthquake in mainland China. We also find that the spatial distribution of earthquake in mainland China is related to the distance from the Pacific Ocean and the distance from the Tibetan Plateau. We use the Poisson regression model with spatial effect and the distance from the Pacific Ocean and the distance from the Tibetan Plateau to fit the spatial distribution of earthquake in mainland China. We find that the Poisson regression model with spatial effect and the distance from the Pacific Ocean and the distance from the Tibetan Plateau