

On copula directional dependence among Korea, Japan and China using recent active earthquake data

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Abstract

Recently, we know that South Korea, Japan and China had big earthquake disasters. Thus we want to study the relationship of earthquake among South Korea, Japan and China with recent earthquake information of the three countries by using copula directional dependence method (Sungur, 2005; Kim and Hwang, 2017). Here, copula (Latin: "link") is a convenient way to describe the dependence between random variables. In this research, we found via the copula directional method that the scale of earthquake in Japan have influenced more than that in South Korea or China. Furthermore, we have studied the copula regression effects (Masarotto and Varin, 2012) of the earthquake distance between South Korea and China (and also the distance between South Korea and Japan) to the scale of earthquake in South Korea with the monthly data.

Keyword: Earthquake, Copula Directional Dependence, Gaussian Copula Regression Model