AOGS 2006


# Historical Earthquakes and Seismic Patterns in the West Part of Yellow Sea

JIAN WANG
*Institute of Geophysics, CEA*

Yellow Sea connects North China and Korea Peninsula. There are a lot of earth-quakes recorded in history and in modern time. The region is important for seismol-ogical research, but the actual situation is that the earthquakes are recorded only from one side, by China or by Korea. Ideal situation is to combine the seismic data from both sides of Yellow Sea. But in present we have some difficult to do so. In this paper, we just use seismic data from China side to research seismicity in the west part of Yellow Sea. The research region is 120°-127°E, 32°-40°N, actually most data concentrated west of 123°E. Although the results can not cover the whole region, we hope this work can promote more cooperation between China and Korea. In this paper, we first introduce the historical catalogue in Yellow sea and analyze the characteristics of isointensity distribution. Since 1970, observation networks which cover the west part of Yellow Sea have been recording abundant data of mod-erate and small earthquakes. From the epicenter distribution map, we notice the seis-mic pattern is very complex. With a quantitative method, we got the seismic patterns. Aim of seismic pattern procession is to research spatial-temporal distribution of epi-centers and generalize saliently seismic characteristics. Stability of the seismic pat-terns is analyzed. The results show that prominent characteristic of seismic pattern is density. Most epicenters of strong historical earthquakes are coincident with seismic density. Besides analyzing the spatial distribution, we also analyze the temporal distribu-tion of small and moderate earthquakes in each seismic density around the epicenters of historical earthquakes. Comparing the characteristics of this kind temporal distribu-tion with that of ordinary earthquake clusters, we discuss about the physics reason of this phenomenon. With time windows of three years, we calculate the seismic density changing in different periods, especially before strong earthquakes. Time dependent seismic haz-ard in the region will be discussed.