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Research on Geographical Environment Unit Division Based on the Method of Natural Breaks (Jenks)

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Abstract. Zoning which is to divide the study area into different zones according to their geographical differences at the global, national or regional level, includes natural division, economic division, geographical zoning of departments, comprehensive zoning and so on. Zoning is of important practical significance, for example, knowing regional differences and characteristics, regional research and regional development planning, understanding the favorable and unfavorable conditions of the regional development etc. Geographical environment is arising from the geographical position linkages. Geographical environment unit division is also a type of zoning. The geographical environment indicators are deeply studied and summed up in the article, including the background, the associated and the potential. The background indicators are divided into four categories, such as the socio-economic, the political and military, the strategic resources and the ecological environment, which can be divided into more sub-indexes. While the sub-indexes can be integrated to comprehensive index system by weighted stacking method. The Jenks natural breaks classification method, also called the Jenks optimization method, is a data classification method designed to determine the best arrangement of values into different classes. This is done by seeking to minimize each class's average deviation from the class mean, while maximizing each class's deviation from the means of the other groups. In this paper, the experiment of Chinese surrounding geographical environment unit division has been done based on the natural breaks (jenks) method, the geographical environment index system and the weighted stacking method, taking South Asia as an example. The result indicates that natural breaks (jenks) method is of good adaptability and high accuracy on the geographical environment unit division.

The geographical environment research was originated in the geopolitics and flourished in the geo-economics. The main representatives of the geopolitics are German geographer Friedrich Ratzel, British geographer Mackinder and American geographical politician Nicholas John Spykman etc. The main representative of the geo-economics is American geographical economist Edward Luttwak. China has the most neighboring countries in the world, and its geographical environment is extremely complex. With the continuous development of globalization, China's relations with neighboring countries have become more complex and more closely. So it is very meaningful to have depth research on geographical environment unit division of China.

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