

## The Comprehensive Classification of Overstandard Weight of Multiple Factors of Air Pollution in Environmental Cartography

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### Abstract

Many factors are involved in environmental cartography. But usually the monitored data of a single factor are got, which leads to the comprehensive classification in cartographical representation. Each factor has different affect in such classification, thus the weight coefficients are different. Thought there are many methods to determine the weight of each factor in the making of the matic Cartography, the weight of each factor is an unchangeable constant in each mapping unit. However, there is rigid national standard of the classification of the draining density of pollutant in environmental Cartography. If the density of a certain pollutant is below the national standard in a chart unit, the pollutant is not important to the pollution of environment in this unit and its weight is small. Conversely, its importance is great if the density is above the national criteria. The more above the criteria, the greater is the weight. Thus, in environmental cartography of multiple factors' comprehensive classification, the monitoring data of the same factor in different mapping units are different. The weight of one factor is not unchangeable, but variable which can be represented by a matrix.

As to situation decision, it means the decision, it means the decision made only when the event (the mapping unit), the countermeasure (classification) and the effect (Subsidiary degree) are united, when the event and countermeasure are numeralized, the decision is made according to the matchness between the event and countermeasure. This is called Grey decision (Grey classification.)

Here the overstandard weight and the Grey Situation Decision model are used to classify the multiple factors comprehensively. The data is processed by computer, and the comprehensive classifying map is also made by the computer. This method has many advantages such as the great amount of information, the multiple factors and the accuracy of classification. It provides a new scientific classifying method for the comprehensive classification of multiple factors in environmental cartography.