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# The Study on the Potential Eco-Environment Evaluation Based on GIS in Longzhong Loess Plateau

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## Abstract

This paper evaluates the potential eco-environment of Longzhong Loess Plateau by using the principal component analysis with GIS software Arc/info. Firstly, found the Digital Environmental Model (DEM) which consists of seven influential factors to the potential eco-environment of the study area; secondly, perform principal component analysis to the second class indexes to obtain the first class indexes—terrain indexes, soil indexes, and eco-climate indexes; get the potential eco-environment index in the same way. There are many methods that could be used to evaluate eco-environment, such as AHP (The Analytic Hierarchy Process), but most of them are subjective. The principle component analysis not only extracts a fewer factors from many influential factors, but also provides the weights of the principal components to avoid the subjectivity of the experts.

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