

## **Abstract**

One of the issues of urban planning, due to population growth and lack of infrastructure, determine the appropriate physical development of the city as if to answer the needs of the future. Since the development of the city requires the application of a lot of land for the construction, reducing the use of other Farmland, and on the other hand the development of the area vulnerable to made that possible. On the basis of this study was to determine the proper physical development of the city of Kalat fuzzy (fuzzy Logic) and Geographic Information System (GIS), and utilizes the entropy model to analyze how the expansion of the city's, For this purpose, the physical development of the city, from 1999 - 2011 using the Shannon entropy for the purpose of organizing a physical model of Kalat, was studied, The model results showed Kalat City during the period 1999, 2007, 2011, respectively, the entropy value  $1/071$ ,  $1/111$ ,  $1/062$ , which represents growth and Asprwal ugly city. And using GIS and fuzzy logic model of slope, aspect, distance from the stream, topography, distance from infrastructure, land use, geology, access to the communications were of zoning and fuzzy, Ways to expand the city's development capabilities are optimized to the East and North East it. Based on the results of the research findings, the expansion slot of the entropy due to horizontal and Asprwal city, which is derived from a linear growth pattern, the pattern of development of the proposed concentration in the tissues can result. Therefore, the relationship between the city and the limitations of the existing pattern of development in the city of Kalat seems necessary, Finally strategies to accomplish this are provided.

Key words: Analysis of extension of spatial physical, Sprawl growing, Shanons Entropy Model, Fuzzy logic, GIS, Kalat Nader city.



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