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Study of the Land Spatial Multi—Scale Evolutionary Simulation of the Urban Agglomeration in Central Yunnan

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Abstract: Spatial-temporal pattern, process and evolution of land under different scale influenced by natural, economic, ecological, social and other complex factors, with a high degree of scale dependence, scale coupling and non-stationary characteristics. This paper reveal the land use and land spatial-temporal evolution process of the urban agglomeration in central Yunnan from a multi-scale perspective, realize the optimal allocation of land space through land use evolution simulation, and enrich the basic theory of land space planning. The research methods are mainly include: based on GWR Logistic(Geographically Weighted Regression) improved CLUE-S model, and Cellular Genetic Model(CAGA) and GIS Spatial Analysis, Geographical Statistics and other methods. The results show that: (1) There are obvious spatial differences in the evolution of land use landscape pattern in the urban agglomeration of central Yunnan, and the differences in topographic condition, traffic and population distribution are the main factors causing the differences. (2) The improved CLUE-S model is used to realize the dynamic simulation of land use spatial multi-scale coupling in multi-resolution environment. (3) The spatial-temporal dynamic change and evolution law of land spatial pattern are analyzed from a multi-scale perspective. Research conclusion: the Spatial multi-scale coupling and spatial pattern evolution simulation methods and their results have important supporting role in regional territorial spatial planning.
Keywords: spatial pattern evolution simulation, spatial multi-scale coupling, land spatial planning, spatial optimal allocation