

UNIVERSIDAD POLITÉCNICA DE CATALUÑA

ESCUELA TÉCNICA SUPERIOR DE ARQUITECTURA DE BARCELONA (ETSAB)
CENTRO DE POLÍTICA DE SUELO Y VALORACIONES (CPSV)

MASTER UNIVERSITARIO EN ESTUDIOS AVANZADOS EN ARQUITECTURA-BARCELONA (MBArch)
LÍNEA DE GESTIÓN Y VALORACIÓN URBANA Y ARQUITECTÓNICA

RESUMEN PROPUESTA DE TESIS

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Título de la Propuesta de tesis: Research on the Evolutionary of the Urban Sprawl of Chinese Municipalities and Its Relationship with Climate Warming in the Past Three decades

China is experiencing the largest and fastest urbanization process in the world. Unlike the typical urbanization process in the West, China's current rapid urbanization process has been accompanied by urban sprawl. Since the 1990s, the sprawl process of Chinese cities has begun to reach a climax. The major problems caused by urban sprawl, such as the decline in the quality of arable land, the reduction in scale, the increase in public construction costs, the increase in the cost of living of residents, the increase in commuting distances, traffic congestion and environmental pollution, have become the most important practical problems that hinder the sustainable development of Chinese cities. At the same time, global climate change characterized by climate warming has brought severe challenges to the sustainable development of global society, economy and environment. The continuous expansion of urban area, large-scale population gathering in cities, increased use of fossil fuels, and the replacement of traditional agricultural production by modern production and lifestyles have led to accelerated greenhouse gas emissions and changes in coverage. The impact of urban sprawl on climate warming continues to increase. Due to dense population density and urban heat island effect, urban areas are more vulnerable to the negative effects of climate warming.

Although it is widely agreed that large cities are showing sprawl results, and urban development is an important factor leading to climate warming. But the sprawl history and laws of China's big cities still need to be studied. In addition, urban sprawl is the main characteristic of urban development, and how its various aspects are related to climate warming, or whether the process of sprawl only has a negative impact on climate change still needs to be confirmed. Based on previous research results and my own understanding, the hypothesis of this study is that China's urban sprawl is characterized by a high-density population and the process of sprawl has slowed down in recent years. Secondly, the various indicators of urban sprawl are not entirely the cause of the worsening climate, and there may also be favorable factors. Therefore, the main purpose of this study is to summarize the evolutionary law of the sprawl of China's megacities, and to explore the relationship and degree of correlation between the various indicators of urban sprawl and climate change.

In order to achieve the above objectives, this study will select China's four municipalities directly under the Central Government, namely Beijing, Shanghai, Tianjin, and Chongqing as the study area. Set and measure the sprawl indicators of urban development in line with Chinese characteristics, focus on the classification of population and density, and summarize their sprawl rules and main characteristics from 1990 to 2019. Establish models for temperature changes and various indicators, analyze the relationship between them, and find out the most unfavorable factors for climate change. For the formulation of urban management policies in the future, the sustainable development of cities and climate regulation and restoration are of reference significance.