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ANALYSIS ON THE SPATIAL VARIATION AND INFLUENCING FACTORS OF INTER-PROVINCIAL CARBON EMISSION INTENSITY IN CHINA

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Abstract

This paper analyzes the spatial pattern and influencing factors of carbon emissions across 30 provinces in China from 2010-2019 using spatial econometric modeling. Selecting the time and space double fixed effects of the spatial Dubin model to analyze the degree of carbon emissions affected by the local and neighboring provinces, and provide theoretical support for my country to formulate differentiated carbon emission reduction policies. Results show pronounced spatial autocorrelation of inter-provincial emissions, conforming to a pattern of higher emissions in northern regions and lower in southern regions. Economic growth, urbanization, and trade dependence are found to significantly promote emissions both locally and in neighboring provinces. Conversely, investment policies and energy efficiency improvements curb emission levels. The findings highlight the need for coordinated, location-targeted policies to mitigate China's carbon footprint.

Key words: carbon emissions, influencing factors, inter-provincial China, spatial correlation, spatial econometric model

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