

29. 旅游高质量发展与目的地可持续治理

Tourism transportation carbon emissions in China: Dynamic mechanisms and multi-regulatory strategies simulation

童昀、李浩、庞丽

海南大学

摘要: Forecasting carbon emissions is regarded as the scientific basis for establishing milestone reduction targets and assessing the effectiveness of reduction strategies. This study aims to predict the tourism transportation carbon emissions (TTCE) in China until 2035 and to propose strategies for achieving the carbon peak target. A system dynamics model of TTCE was constructed, which filled a research gap. On this basis, we set up four single regulation scenarios and three combined regulation scenarios, and conducted systematic simulations of emission reduction effects. The results indicate that the "Carbon Peak & Carbon Neutrality" targets provide favorable external conditions for TTCE reduction. However, China's tourism transportation sector still cannot meet its carbon peak target on schedule without intervention, and its carbon emissions will remain steadily increasing until at least 2035, reaching 464.83 Mt. Accelerating the optimization of the national energy structure and the promotion of new energy vehicles have brought benefits for TTCE reduction, but their effects are limited. Curbing aviation carbon emissions is the key to peak TTCE, which highlights that the government should encourage tourists to choose high-speed rail (trains) for medium-distance travel instead of aviation.

关键词: Tourism transportation carbon emissions; carbon peak target; system dynamics; China