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Nota di contenuto	Chapter 1. Research on Sponge City Construction in Lin'an District during the "14th Five-Year Plan" Period -- Chapter 2. Impact of Photovoltaic System Construction on Ecological Environment -- Chapter 3. Remote Sensing Monitoring for Carbon Neutrality: High-Precision Tracking of Greenhouse Gas Emissions and Carbon Sink Dynamics -- Chapter 4. Spatial Distribution Patterns and Interrelationships of Soil Organic Matter and pH in Cultivated Lands of Nenjiang City, Heilongjiang Province,- Chapter 5. Current Status and Ecological Characteristics of Grassland Resources in Heilongjiang Province: A Comprehensive Analysis Based on the 2021 Grassland Resource Survey and Monitoring -- Chapter 6. The Causes and Risk Management of Abnormal Temperature Phenomena in China in Early 2025 under the Background of Global Warming: A Comparative Analysis with the Snow Disaster in Southern China in Early 2008 -- Chapter 7. Characteristics and Change Trend of Atmospheric Compound Pollution in Hebei

Province -- Chapter 8. Analysis of PMV-PPD Indicators for Indoor Public Activity Spaces in Kindergartens Under Sunny, Cloudy and Dusty Weather Conditions -- Chapter 9. Spatiotemporal Dynamics of Vegetation Transpiration and Its Response to Greenhouse Gas Emissions in China -- Chapter 10. The Multi-Scale Driving Mechanism of Spatio-Temporal Evolution of urban Greenland on Carbon Storage: A Case Study of Nanjing -- Chapter 11. Quantifying Non-Carbon Benefits and Designing Tiered Ecological Compensation: Evidence from Forest Carbon Sink Projects in Qingyuan, China -- chapter 12. Comparative Study on the Freeze - Thaw Characteristics of Meteorological and Seasonal Frozen Soils around Lakes—A Case Study of the Area around Xingkai Lake -- Chapter 13. Monitoring and Evaluation of the Natural Forest Protection Project in the Upper Reaches of the Yangtze River -- Chapter 14. Ecological Compensation Accounting for the Hanjiang River water source area of South-to-North Water Diversion Central Route Based on Ecosystem Service Value -- Chapter 15. Progress of Carbon Sinks Assessment and Carbon Sequestration Technology of Urban Green Space Networks (UGSNs) Based on Bibliometric Analysis -- Chapter 16. Revealing Hidden Ecological Surplus: A Novel UECC-UEPI Framework for Semi-Arid Urban Sustainability -- Chapter 17. Coupling Coordination Dynamic of Tourism-Driven Urbanization and Ecosystem Health in Karst Regions: Evidence from Sustainable Development Innovation Demonstration Zone – Guilin, China -- Chapter 18. Spatio-Temporal Optimization of Seismic Resilience: Quantifying Vulnerability Hotspots in BRI Urban Frontiers -- Chapter 19. Study on the Characteristics and Prediction Technology of Maximum Snow Depth in Shihezi Area from 1960 to 2024 -- Chapter 20. Evaluation and Optimization Strategies of Lake–Urban Breezes Circulations under Planning Scenarios: A Case Study of Xiong’an New Area -- chapter 21. Morphological Resilience Assessment in Historic Districts: A Framework Integrating Urban Form and Case Application in Jinan Historic Commercial District -- chapter 22. Dynamic Air Quality Benefits of Green Roofs: Enhanced Particulate Removal during Calm Nights Revealed by Paired Monitoring -- chapter 23. Integrating Allometric Equations and Three-Dimensional Structural Data for Accurate Estimation of Mangrove Community Carbon Storage -- Chapter 24. Simulation Analysis of Carbon Tax Policy on CO2 and Air Pollutants Reduction Effects in China's Freight Transportation Sector -- Chapter 25. Under the Dual Carbon Background, a Systematic Solution for Zero Carbon Parks - Taking the Foshan Maintenance Center of Southern Power Grid as an Example -- Chapter 26. Quantifying and Improving Building Energy Flexibility with Coordinated PV-Battery Systems: A Data-Driven Model-Based Approach -- chapter 27. The Impact of the Pilot Policies for Low-Carbon Cities on Environmental Pollution Control: Taking the Second-Batch Pilot Cities as an Example -- Chapter 28. Joint Decarbonisation Efforts for Neutralizing China's Transport Sector -- Chapter 29. Research on Design Strategies of Industrial Communities Based on Constructing Industrial Ecosystems -- Chapter 30. Prediction of the Realization of Regional Dual Carbon Goals——Modeling Analysis Based on Relevant Factors of Carbon Emissions in Inner Mongolia -- Chapter 31. Research and Application of Key Technologies for 'Zero-Carbon' Construction in Revolutionary Areas -- Chapter 32. Carbon Trading Policies and Industrial Carbon Emissions: Insights from Regional Heterogeneity -- Chapter 33. Causal Identification of Heterogeneous Emission Responses: Internal Carbon Pricing Efficacy in China's Power Grid via PSM-DID Framework -- Chapter 34. Research on Carbon Emission Reduction Pathways in the Materialization Phase of Low-Rise Prefabricated Buildings in Chongqing Based on Life Cycle

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Sommario/riassunto

Global warming and extreme weather events are becoming increasingly severe, and climate risks are particularly prominent. The current unsustainable development model of human society will exacerbate climate change and destroy ecosystems, and the impacts and risks caused by climate change will further threaten the already stressed human economic and natural ecosystems. These risks and impacts are becoming increasingly complex, compound, and consequential, and may interact with each other, further amplifying the resulting losses and damages. Resilience is the ability of a social, economic, and environmental system to deal with catastrophic events, trends, or disturbances, and to maintain its essential functions, positioning, and structure while responding or reorganizing, and to maintain its ability to adapt, learn, and transform. The world urgently needs to take timely and strong actions to promote comprehensive and systematic transformation and adaptation, and to seek a path of climate - resilient development. This book focuses on two major research directions on climate resilience. One is the enhancement of the climate resilience of urban ecosystems. The other is the application of artificial intelligence and big data. The first part starts with urban ecosystems by analyzing the performance and capacity of urban ecosystems under extreme weather and the increasingly severe climate change and providing measures and technical solutions related to urban climate resilience. The second part presents the integration of artificial intelligence into climate resilience and climate change prediction which enables people to better predict the changes in climate and choose better solutions to deal with and solve the problems. The intelligent systems also enable decision makers to better deliver early warning and adaptation functions. The potential readers of this book are engineers, scholars, and Ph.D in the field of environmental engineering and urban planning.