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Autore	Dong Shuning
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Nota di contenuto	Introduction -- Analysis of Supply and demand of water resources in the study area -- Groundwater system in the study area -- Simulation, assessment and management of the key water source sites -- Assessment of coal mining impact on water resources -- Study on multi-objective optional allocation of complex water resources system -- Patterns of rational development and utilization of water resources in the study area -- Conclusions and suggestions.
Sommario/riassunto	Arid-semiarid regions have suffered from sharp conflicts among water resource utilization, mining, and the environmental protection. Sustainable development in these regions requires a close coordination between economy, society and the environment. Based on systematic hydrogeological investigations, laboratory and in-situ tests, and application of innovative methodologies including theoretical analysis modeling and prediction to study water resource distribution (including surface water, groundwater, mine water and coal mine domestic water)

in mining areas, this dissertation provides detailed analysis of the current situation and trend of water uses in domestic supply, agriculture and industry. It evaluates the status development and utilization, evolution trend, exploitation and utilization potential of water resources in Shen-Dong Coal Mine area, one of China's extra-large coal bases. Incorporated with the long and intermediate terms' development strategies of this area, the dissertation lays out a scientific allocation scheme of water resources in different hydrological years and proposes a planning mode of water resources development and utilization and a technical scheme for comprehensive water resources utilization to provide technical supports for the optimal allocation, rational exploitation, comprehensive utilization and scientific management of water resources. This dissertation is one of the best in Chang'an University because of the volume of reliable data, defensible scientific analysis, and world significance of the research results.

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