

Postprint: Analysis of Seepage Characteristics of Lanxi Reservoir in Guizhou Province

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Abstract

In karst regions, leakage issues have always been critical to the success of dam and reservoir projects. The spatial complexity and dynamic evolution of karst development determine the intricacy of karst leakage issues. This paper analyzes the leakage characteristics of Lanxi Reservoir, first introducing the engineering geological and hydrogeological conditions of the study area, comprehensively analyzing the forms and pathways of karst leakage through investigation of groundwater dynamics and physicochemical characteristics, and concluding that the leakage channels in the study area are primarily solution fissures and underground river conduits, with the main leakage channels located at the contact zone between C3mp2 and C3mp1. Through analysis and evaluation of typical karst reservoir leakage projects, it provides empirical reference for similar engineering endeavors.

Full Text

Preamble

Analysis of Leakage Characteristics of Lanxi Reservoir in Guizhou Province

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Abstract

In karst regions, leakage has always been a critical factor determining the success or failure of dam and reservoir projects. The spatial complexity and dynamic evolution of karst development give rise to intricate leakage problems. This paper analyzes the leakage characteristics of Lanxi Reservoir, beginning with

an introduction to the engineering geological and hydrogeological conditions of the study area. Through comprehensive analysis of groundwater dynamics and physicochemical characteristics, the forms and pathways of karst leakage are investigated. The study concludes that leakage channels in the area are primarily solution fissures and underground river conduits, with the main leakage channels located in the contact zone between C3mp2 and C3mp1. This analysis of a typical karst reservoir leakage project provides valuable experience and reference for similar engineering endeavors.

Keywords: karst area; leakage; groundwater temperature; groundwater electrical conductivity; drilling water level

Note: Figure translations are in progress. See original paper for figures.

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