

研究报告

电导率作为流域水文变化指标初探

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摘要 利用电导率作为主要指标, 研究了四川黑水河流域的水文特征. 方差分析表明, 支流和干流上共10个样点的电导率值在采样地点间差异显著(枯水期和平水期, $P = 0.000$), 但在时间上不具显著性差异(枯水期 $P = 0.346$, 平水期 $P = 0.517$); 对枯水期和平水期各样点的电导率值做配对 t 检验, 得出两个时期的电导率值虽差异显著, 但具有极其相似的动态规律 ($r = 0.973, P = 0.000$), 表明流域内电导率呈规律性的变化. 可将电导率应用于水文时期的划分以及河流特征的标识等研究. 通过计算支流电导率对邻近干流的贡献, 可以推算各支流流量的贡献率. 将电导率作为流域水文时空变化的特征性指标, 可为深入研究河流水文变化提供更为便捷的途径.

关键词 [电导率](#) [水文](#) [流量](#) [贡献率](#) [黑水河](#)

分类号

Electrical conductivity as an indicator of hydrological characteristics in catchment scale

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Abstract

In this paper, the hydrological characteristics of Heishui River in Sichuan Province were studied, with electrical conductance (EC) as the main indicator. A total of 10 sites were selected on the branch and main streams, and the EC determinations were made at low-flow and level-flow periods. The results showed that EC value was significantly different among test sites, but had no significant difference between the two sampling times. The t test on the EC values of different sites at two sampling times also showed the similar pattern, indicating that the index EC could be helpful for distinguishing hydrological period and indexing river characteristics, and the contribution of branch stream to its neighboring main stream could be estimated by the EC. Using EC as a characteristic index of hydrological temporal-spatial changes could provide a convenient way for the further studies of catchment hydrology.

Key words [Electrical conductivity](#) [Hydrology](#) [Discharge](#) [Contribution percentage](#) [Heishui River](#)

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