METADATA

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Abstract

The book contains eight chapters. The first connects engineering hydrology and probability theory. The second and third chapters review the necessary concepts from probability theory and statistics, respectively. The fourth chapter introduces the probabilistic description of hydrological processes and analyzes the concepts of return period and risk. The fifth chapter is devoted to the typical statistical analysis of a hydrological variable and, in particular, it discusses the sample statistical characteristics, the histogram and the empirical distribution function, as well as the selection and fitting of a theoretical distribution function, and the statistical hydrological forecasting. The sixth chapter refers to the common distributions of statistical hydrology (normal distribution and its transformations, group of gamma distributions, asymptotic distributions of extremes, etc.). The seventh chapter covers the statistical analysis of two random variables, the least squares estimation, and their applications to fill in and extend hydrological samples. Finally, the eighth chapter is devoted to the analysis of a random variable dependent on a parameter, with application to the construction of ombrian curves.

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