

Canadian and Chinese Mountain Hydrology: A Comparative Hydrology Case Study

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Editorial

Comparative hydrology aims to find regions with similar environmental characteristics and then compares the hydrological activities in these areas to aid information transfer and technique exchange. As an example, the mountainous regions of Canada and China were compared in this research. Vertical zonation is a common feature of such areas, resulting in differences in microclimate, vegetation, soil, and the hydrological responses that result. Aspect and other local variables influence the rise in precipitation with altitude.

Regions are characterized as discrete areas of the earth that share common characteristics such as topography, climate, ecology, or culture. The character of hydrological processes as influenced by climate and the composition of the earth's surface and subsurface is studied in comparative hydrology. As a result, this branch of hydrology can be considered an integral part of regional hydrology. Indeed, it has been included in the International Hydrological Programme 111's theme of "Hydrology of Particular Regions and Land Areas." Through the transfer of knowledge obtained in areas with similar regional characteristics, comparative studies improve our understanding of the hydrological processes that occur in different geographical regions and increase our predictive capacity.

Comparative hydrology has a lot of potential and deserves our attention, both in terms of expanding its principles and applying methods developed in one field to other areas. The authors' points of view are described in this paper as an invitation for further debate. The mountainous regions of Canada

and China were subjected to comparative studies. It should be noted that systematic comparative studies of these regions have never been attempted before, and the aim is to provide a case study to demonstrate our approach rather than a detailed coverage. Different geographical regions have distinct characteristics that influence hydrological processes and responses to inputs, which, in turn, vary by location. Between countries with similar regions, the need for hydrological knowledge, resource constraints, and the historical development of hydrological methods differ. Natural variability and human influences have resulted in varying emphasis on different aspects of a region's hydrology. The use of spatial analogues to elucidate processes and approximate parameter values based on research results from other places is one theory of comparative hydrology.

The set diagrams may conceptually reflect the diversity or similarity between two geographical locations. The two locations can be considered to belong to different regions if there is little intersection of environmental attributes important to our hydrological concern; otherwise, they are considered identical. If topography is the primary criteria, we may have flatland or hilly regions; if climatic factors are the primary criterion, we may have tropical or cold regions. It is obvious that, depending on the classification system used, the same geographical area will belong to different types of regions. The coastal mountainous area of southern China, for example, can be called a coastal region, a mountainous region, and a subtropical region all at the same time. Regionalization necessitates some categorization based on a collection of variables that affect a set of hydrological outcomes. As a result, we should predict intra-regional as well as inter-regional gaps in, say, the world's arid regions.

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