



The Search for a Catchment Classification System for Hydrology

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Hydrology does not yet possess a generally agreed upon catchment classification system. Such a classification framework should provide a mapping of landscape form and hydro-climatic conditions onto catchment function (including partition, storage, and release of water), while explicitly accounting for uncertainty and for variability at multiple temporal and spatial scales. Such a framework would provide an organizing principle, create a common language, guide modeling and measurement efforts, and provide constraints on predictions in ungauged basins, as well as on estimates of environmental change impacts. In this presentation, we (i) review existing approaches to define hydrologic similarity and to catchment classification; (ii) discuss outstanding components or characteristics that should be included in a classification scheme; and (iii) provide a basic framework for catchment classification as a starting point for further discussion. Possible metrics to describe form, hydro-climate, and function are suggested and discussed. We close the discussion with a list of requirements for the classification framework and open questions that require addressing in order to fully implement it. Open questions include: How can we best represent characteristics of form and hydro-climatic conditions? How does this representation change with spatial and temporal scale? What functions (partition, storage, and release) are relevant at what spatial and temporal scale? At what scale do internal structure and heterogeneity become important and need to be considered?