



## **Edaphic controls on streamflow generation and cessation in a semi-arid catchment**

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Annual runoff from mountain snowmelt is critical to the water supply in many semi-arid regions. Snowpack depletion and streamflow generation studies are often conducted in headwater catchments and have typically focused on hydrologic processes that determine the timing and magnitude of peak flows or cumulative discharge. The factors controlling hydrologic response have been found to be highly variable, both in space and time, making accurate uncalibrated streamflow predictions difficult, even for well instrumented catchments. Recent advances in research on hillslope level controls on streamflow generation have provided new insights into two-dimensional mechanisms linking spatial and temporal controls on streamflow generation. Research in Dry Creek Watershed, near Boise, ID also indicates that streamflow cessation is controlled at the hillslope scale by vertical soil water potential gradient. Distributed soil moisture, tensiometric and streamflow data are presented to explain first-order controls on the timing of streamflow generation and cessation for an ephemeral headwater stream.