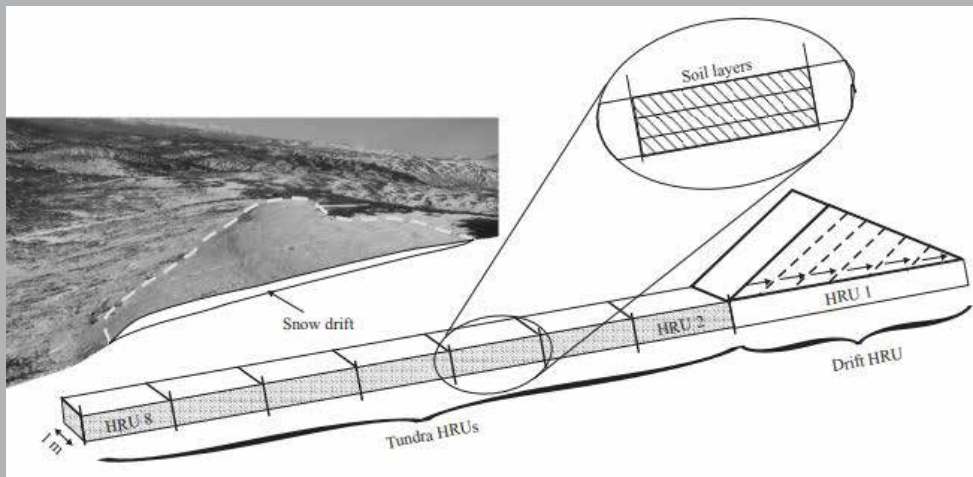




# Apogee Instruments SI-111 Infrared Radiometer Hydrology

Dr. William Quinton of the Wilfrid Laurier University has studied the hydrology of cold regions in Canada, where snowmelt runoff is a big contributor to local hydrology.

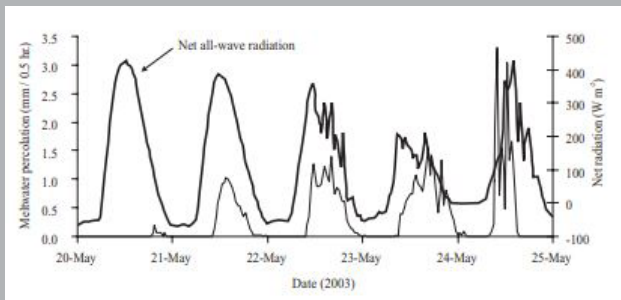
In one study, Dr. Quinton measured several variables in Yukon Territory, Canada, as a snowdrift containing 10,820 cubic meters of snow melted into runoff. Infrared radiometers mounted on a meteorological tower recorded the soil temperature at the downslope edge of the drift.



**Image:** Conceptual view of the hillslope under study. The photograph shows an aerial view across the crest of the hillslope that is covered by a late-lying snowdrift. The drift constitutes a single hydrological response unit (HRU). The 70 m distance between downslope edge of the drift and the stream bank is divided into 7 HRUs each of 10 m length. Together the HRUs represent a 1 m wide strip extending from the drift (HRU1) down to the stream bank (HRU 8).

## Reference Article

W. L. Quinton, S. K. Carey, N. T. Goeller. Snowmelt runoff from northern alpine tundra hillslopes: major processes and methods of simulation. Hydrology and Earth System Sciences Discussions, European Geosciences Union, 2004, 8 (5), pp.877-890.



**Image:** Variation in the net all-wave radiation measured at the surface of the snowdrift and the meltwater percolation reaching the base of the melting snow drift in 2003.

## Application Summary

### Summary

Measuring ground surface temperature to measure snow runoff

### Apogee Sensors Used

SI-111

### Contributing Organization

Dr. William Quinton of the University of Wilfrid Laurier

### Location

Yukon Territory, Canada

