
Intercomparison of methods for solid precipitation measurement: implications
for global change studies

Barry Goodison*

The study of regional and global water cycles, including the prediction of future changes, requires not only a good understanding of processes, but also reliable, accurate and consistent data sets for all elements of the hydrological cycle. In high latitudes, snow is a significant component of this cycle; its assessment must involve the integration of conventional and remotely sensed data. To create compatible temporal and/or spatial data sets one must understand the data base - its method of measurement, the errors, the biases.

One current international study which will make a major contribution to our improved understanding of the water cycle is the WMO solid precipitation intercomparison; its ultimate aim is to derive standard methods of correcting solid precipitation measurements, corrections which may easily result in a doubling or even quadrupling of measured precipitation. An overview and some initial results from the Canadian contribution to this experiment will be reviewed in the context of regional snow accumulation and melt and the validation of remotely sensed data. Implications of the results of these efforts in the study of the water cycle will be stressed.

* Atmospheric Environment Service, Environment Canada, 4905 Dufferin Street, Downsview, Ontario, M3H 5T4.