

PERFORMANCE OF HYDROMETEOROLOGICAL INSTRUMENTS UNDER HARSH ENVIRONMENTAL CONDITIONS IN THE NEPAL HIMALAYAS

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Reliable input data are necessary for the Snow and Glacier Hydrology Project (SGHP) of the Department of Hydrology and Meteorology to assess and predict snow and glacier melt runoff.

The paper outlines the rationale for the instrumentation of the six hydrometeorological stations in the Nepal Himalaya and discusses the data recovery rate under the influence of the harsh environmental and human activities.

The paper shows that, in general, conventional and semi-automatic instruments have a better performance record because of a more robust design and easier maintenance under the conditions in Nepal than fully automatic instruments and stations. Automatic stations are reliable and have a high data recovery ratio when observed frequently. However, due to long repair times, the periods of data losses are longer than for comparable conventional equipment.

For the most commonly used instruments of the SGHP, the average data recovery rates are given together with an identification of the reason for data losses. The experiences gained during an eight-year technical cooperation project show that environmental factors such as climate and catastrophic events, together with acts of vandalism, account for the largest proportion of data losses from the instruments.

The paper further discusses countermeasures of the SGHP to minimise data losses by optimised maintenance and calibration schedules and improved spare part supply and reporting routines for instruments.

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