

EDITORIAL

Information on soil moisture in the field is required for a wide variety of hydrological and agricultural purposes. Knowledge of water availability in unsaturated zone requires direct measurement of soil moisture for plant growth and water balance studies. In laboratory investigation also determination and reporting of physical and chemical properties of soil necessitates knowledge of soil moisture. Soil moisture data also plays an important role in agricultural and irrigation planning, recharge of rainfall to ground water, over land flow and long term physical and chemical characteristics of soil strata.

Soil moisture is measured in terms of moisture content (water content) by weight of volume. The well known method to measure the moisture content is 'gravimetric method'. The increasing requirement of quick information about soil moisture has led to the development of various techniques for its measurement in-situ and in laboratory, like, tensiometric technique, hygrometric technique, nuclear technique, electromagnetic radiation technique, remote sensing technique, thermal conductivity technique and electrical resistivity technique etc.

Development of sophisticated instruments employing microprocessors and trans-receivers have not only improved the data collection process but also minimized the possibility of man made errors. Recently, Automated Hydrologic stations/Data Acquisition Systems have been brought in use to collect the soil moisture data round the clock using moisture sensors and sophisticated electronic circuitry. Remote sensing techniques can also provide the information on soil moisture of the surface-soil with a wide coverage of the field, which is not possible otherwise.

The introduction of personal computers in recent years has revolutionised the collection, storing, retrieving and processing of soil moisture data. The use of personal computers with the applications of simulation, optimization and real time analysis has also led to the development of various mathematical models for soil moisture predictions and hydrological analysis and design.

It is hoped that ideas expressed and information provided by different authors in their papers in this issue would provide useful information about various aspects of soil moisture studies.

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