AOGS 2005

Characteristics of soil water movements and water table at the Leizhou Peninsula, Guangdong Province, China

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Knowledge of the mechanisms of water at tropical red soil is the key to understand the hydrological cycle. In order to study water infiltration and water table responding to rainfall events, field experiments were conducted in the Leizhou Peninsula, China, since July 2000.

TDRs were set at 10cm, 20cm, 50cm, 100cm and 200 cm, respectively. Water table and rainfall were also measured at the same time. All items were measured and recorded automatically for every 10 minutes.

Research result show that (1) there is yearly periodic variation of groundwater table at the Leizhou Peninsula, with an ascending period from about June to October, lasting for 90-100 days, and descending period during other times; (2) in the recharging area, the variation of groundwater table has close relationship with rainfall, of which during ascending period there is an obviously positively-interrelationship between accumulated ascending-range of groundwater table and accumulated rainfall, and during dry reason with less rainfall; and (3) soil water infiltration responded rapidly to rainfall events.

Finally, based on the results water resource development in the Leizhou Peninsula has been discussed.

Key words: Tropical red soil, Water table, Soil moisture, the Leizhou Peninsula