

Soil Moisture Regulation in Irrigated Agriculture

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Abstract : Seepage capillary anomalies in the active layer of soil, related to the soil water movement, often cause variation of soil hydrophysical properties and become one of the main objectives of the hydroecology. It is necessary to mention that all existing equations for computing the seepage flow particularly from soil channels, through dams, bulkheads, and foundations of hydraulic engineering structures are preferable based on the linear seepage law. Regarding the existing beliefs, anomalous seepage is based on postulates according to which the fluid in free volume is characterized by resistance against shear deformation and is presented in the form of initial gradient. According to the above-mentioned information, we have determined: Equation to calculate seepage coefficient when the velocity of transition flow is equal to seepage flow velocity; by means of power function, equations for the calculation of average and maximum velocities of seepage flow have been derived; taking into consideration the fluid continuity condition, average velocity for calculation of average velocity in capillary tube has been received.

Keywords : seepage, soil, velocity, water

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