

عنوان مقاله:

movement pattern of turbid water by particle distribution in a dam reservoir with selective withdrawal discharges in south korea

محل انتشار:

سمپوزیوم برآورد عدم قطعیت در مهندسی سد (سال: 1384)

تعداد صفحات اصل مقاله: 8

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خلاصه مقاله:

This research was conducted to understand movements of turbid water in selective withdrawal reservoirs before and after summer monsoon. Mean rainfall during November-May was low, compared to that during June-October. The reservoir water was discharged through watertgates when previous rainfall and inflow exceeded 50 mm and 80 m³ s⁻¹, respectively. Intake tower was generally used except for the period of the high runoff. Average turbidity in down-reservoir showed a difference of 29.9 NTU between pre-monsoon and post-monsoon. Diameter of particles of turbid water ranged between 0.435 and 482.9 μ m. Fine particles such as clay were much denser than the larger particle. In the whole stations, clay component was relatively higher with a proportion of that in the particle distribution. Particle composition of turbid water showed that clay consisted of 94.4~98.9% and silt made of 1.1~5.6%. Analysis on turbid water movements derived from particle distribution showed a linear increase from the deep layer toward the surface layer in lower area of a reservoir. This was closely related with the hydraulic behavior of the reservoir, heavily affected by the discharges through selective withdrawal towers and water gates. Turbid water originated from stream sediments in the middle area then re-suspended in the down-reservoir causing a movement between the surface and middle layers of the reservoir. Therefore, such phenomenon needs to be understood for reservoir water quality management.

کلمات کلیدی:

Dam reservoir, Selective withdrawal, Turbid water, Turbidity, Particle, Monsoon

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