Abstract:

Sedimentation in reservoirs is inevitable. This phenomenon has inappropriate effects on reservoirs. Such as decreasing of reservoir useful volume, decreasing of dam stability, unsuitable operation of operational gates and reduce the volume of flood control. Understanding of the manner and extent of sedimentation in reservoirs can be effective strategies for reducing these losses can largely help. The useing of mathematical models because of time-consuming and costly physical models in river and reservoir simulation is more recent. In this study, in order to minimization of sedimentation in the Seimare,s reservoir, GSTARS3 the latest models of mathematical models in simulating water and sediment were used. The sediment transport equation after the calibration of models for hydraulic and sedimentary condition was Yang equation and it has been conducted for different scenarios conducted and their results were reviewed. According to the model results, 80% of the seymare reservoir will be full with sediment in 112 year after intake. The results showed that,changes in water level in the reservoir does not have a significant impact on the rate of sedimentation in reservoir. But distance of the sediments are strongly influenced by water level, as much higher level,as the greater distance scale of the dam. The optimum levels of water and the location of the bottom outlets and discharge of the bottom outlets was determined after analysis of the model results.

Key words: Sedimentation, GSTARS3, Seymare River

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Minimizing of sedimentation in Seymareh dam reservoir with optimal utilization of the bottom outlets

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