

Analysis of Bed Load Sediment Transport Mataram-Babarsari Irrigation Canal

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Abstract : Mataram Irrigation Canal has 31,2 km length, is the main irrigation canal in Special Region Province of Yogyakarta, connecting Progo River on the west side and Opak River on the east side. It has an important role as the main water carrier distribution for various purposes such as agriculture, fishery, and plantation which should be free from sediment material. Bed Load Sediment is the basic sediment that will make the sediment process on the irrigation canal. Sediment process is a simultaneous event that can make deposition sediment at the base of irrigation canal and can make the height of elevation water change, it will affect the availability of water to be used for irrigation functions. To predict the amount of drowning sediments in the irrigation canal using two methods: Meyer-Peter and Muller's Method which is an energy approach method and Einstein Method which is a probabilistic approach. Speed measurement using floating method and using current meters. The channel geometry is measured directly in the field. The basic sediment of the channel is taken in the field by taking three samples from three different points. The result of the research shows that by using the formula Meyer -Peter Muller get the result of 60,75799 kg/s, whereas with Einsten's Method get result of 13,06461 kg/s. the results may serve as a reference for dredging the sediments on the channel so as not to disrupt the flow of water in irrigation canal.

Keywords : bed load, sediment, irrigation, Mataram canal

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