

## **Nilsson Model Performance in Estimating Bed Load Sediment, Case Study: Tale Zang Station**

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**Abstract :** The variety of bed sediment load relationships, insufficient information and data, and the influence of river conditions make the selection of an optimum relationship for a given river extremely difficult. Hence, in order to select the best formulae, the bed load equations should be evaluated. The affecting factors need to be scrutinized, and equations should be verified. Also, re-evaluation may be needed. In this research, sediment bed load of Dez Dam at Tal-e Zang Station has been studied. After reviewing the available references, the most common formulae were selected that included Meir-Peter and Muller, using MS Excel to compute and evaluate data. Then, 52 series of already measured data at the station were re-measured, and the sediment bed load was determined. 1. The calculated bed load obtained by different equations showed a great difference with that of measured data. 2. r difference ratio from 0.5 to 2.00 was 0% for all equations except for Nilsson and Shields equations while it was 61.5 and 59.6% for Nilsson and Shields equations, respectively. 3. By reviewing results and discarding probably erroneous measured data measurements (by human or machine), one may use Nilsson Equation due to its r value higher than 1 as an effective equation for estimating bed load at Tal-e Zang Station in order to predict activities that depend upon bed sediment load estimate to be determined. Also, since only few studies have been conducted so far, these results may be of assistance to the operators and consulting companies.

**Keywords :** bed load, empirical relation ship, sediment, Tale Zang Station

**Conference Title :** ICEBESE 2016 : International Conference on Environmental, Biological, Ecological Sciences and Engineering

**Conference Location :** Montreal, Canada

**Conference Dates :** July 14-15, 2016