Computation of Wash Load in the Yellow River

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Abstract. It has been the conventional assumption that wash load is supply limited and is not, or only indirectly, related to the hydraulics of a river. Hydraulic engineers also assumed that bed-material load concentration is independent of wash load concentration. This paper provides a detailed analysis of the Yellow River sediment transport data to determine whether the above assumptions are true and whether wash load concentration can be computed from Yang's (1979) unit stream power formulas and the modified unit stream power formula for sediment-laden flows (Yang, et al.1996). A systematic and thorough analysis of 1160 sets of data collected from 9 gaging stations along the Middle and Lower Yellow River confirmed that the method suggested by Yang (1996) can be used to compute wash load, bed-material load, and total load in the Yellow River with accuracy.