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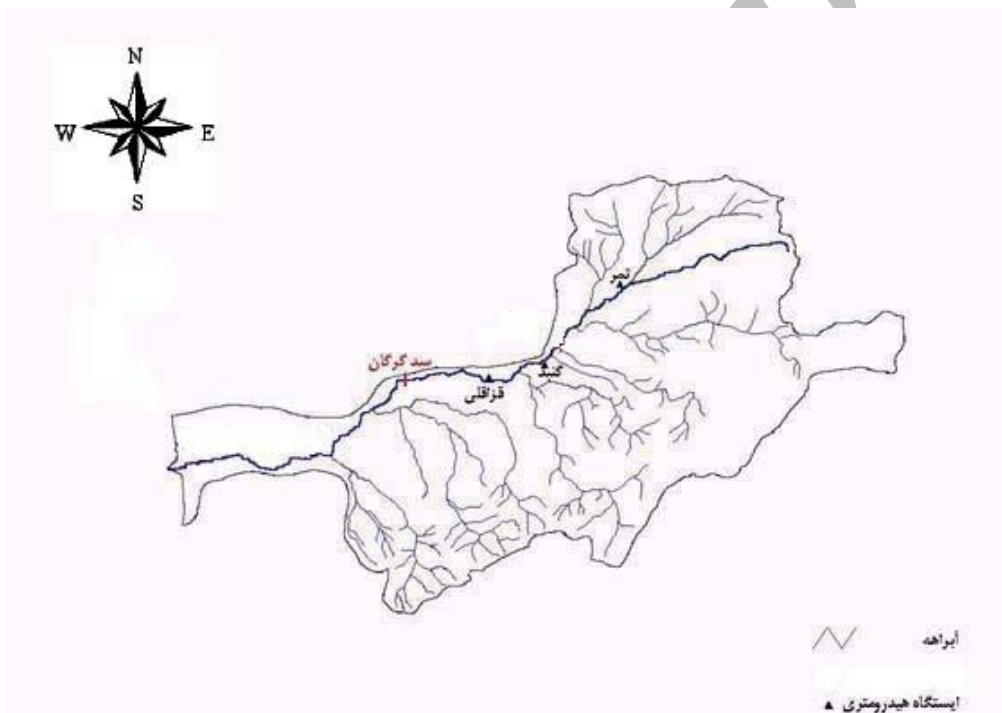
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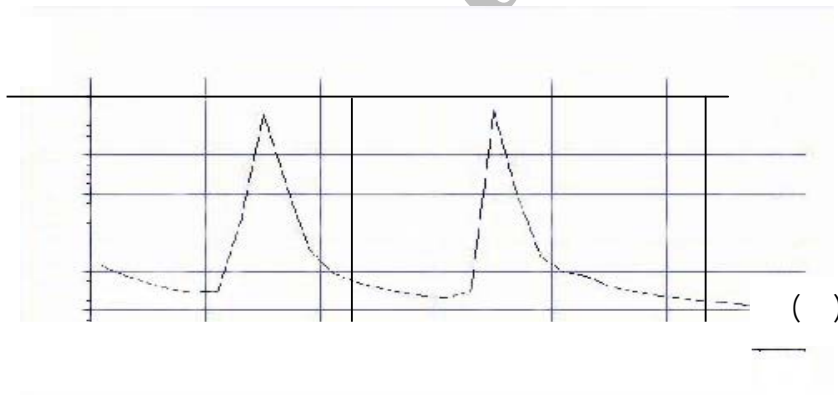
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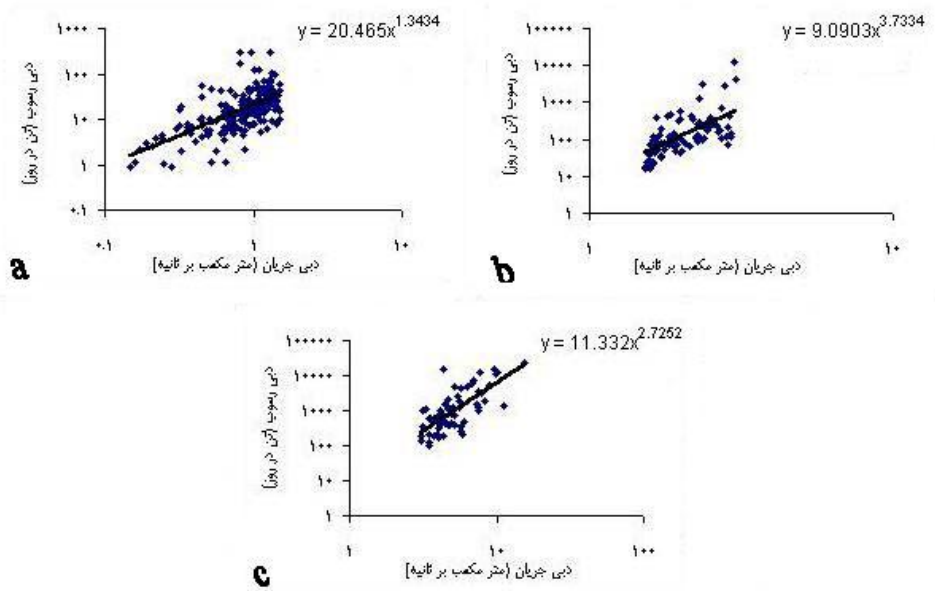
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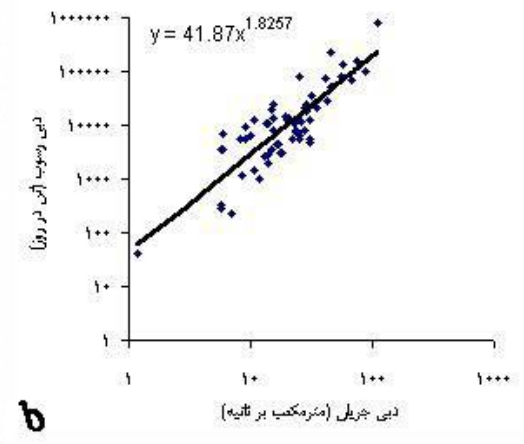
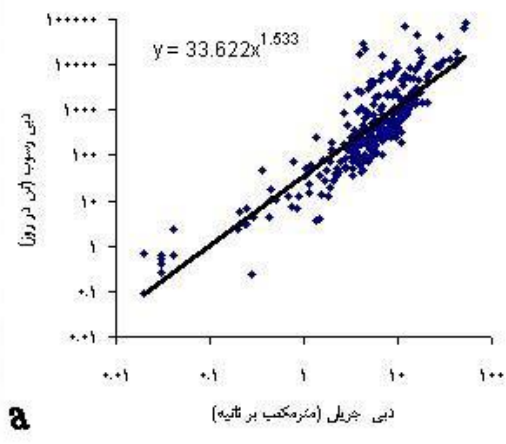
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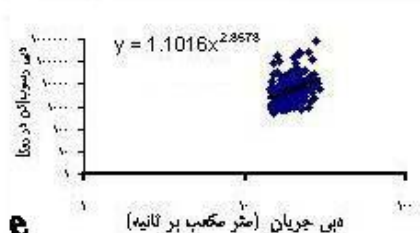
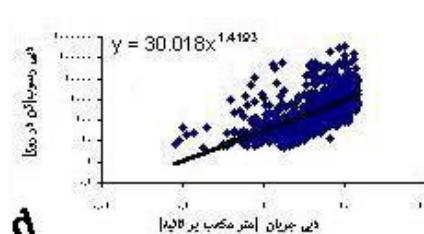
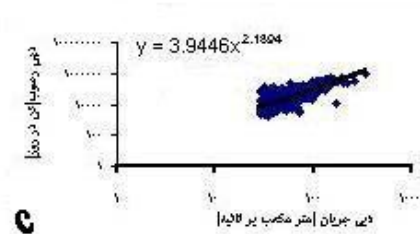
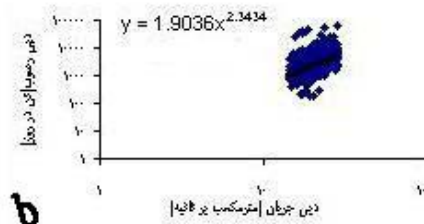
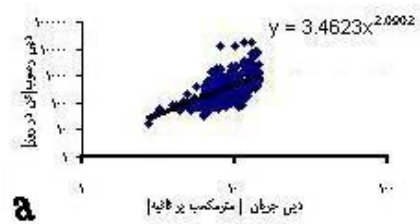
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Optimization of the Relations between Flow Discharge and Suspended Sediment Discharge in Selected Hydrometric Stations of Gorganroud River

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Abstract

In this research it is attempted to optimize relations between flow discharge and suspended sediment discharge in selected hydrometric stations located on the main branch of Gorganroud River. Homogeneity of data was initially tested using Smirnov-Kolmogrov technique. Then, using daily discharge data and employing "Technical Hydrology" software, monthly hydrographs of the discharge were drawn for all selected stations. Considering hydro-climatic factors that affect the suspended sediment discharge, such as hydrograph condition, classified discharge, and time, some models were tested on the basis of the sediment transport equation. Some regression models were obtained between flow and suspended sediment discharge, and values of "a" and "b" parameters were then resulted for each parts of the model. To select the optimum model, mean squares of errors were used as an index according to which models with low values of mean squares of errors were selected as optimum ones for each station. Results indicated that general regression model which uses only one equation as sediment rating curve equation bears the highest error among all tested models for estimating suspended sediment. So, it is recommended to employ the models with low errors for estimating sediment discharge in the study area.

Keywords: Sediment discharge, Suspended sediment, Optimization, Sediment rating curve, Gorganroud

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