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<sup>v</sup> - Jansen & Painter  
<sup>v</sup> - Bray & Xie

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<sup>v</sup> -Anderson

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<sup>1</sup> - Lahlou  
<sup>2</sup> - Calvo-Alvardo

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<sup>1</sup> - Statistical  
<sup>2</sup> - Functional

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## **Analysis of Regional Suspended Sediment in Gorganroud Drainage Basin Using Regression Equation**

**J.Varvani<sup>1</sup> S.Feiznia<sup>2</sup> M.Mahdavi<sup>3</sup> M.Arabkhedri<sup>4</sup>**

### **Abstract**

Suspended sediment yield data could be used for estimating soil erosion in drainage basins. The objective of multiple regression analysis is to use the independent variables (values known) to predict the single dependent value selected by the researcher. In this research, eleven stations were selected in Gorganroud drainage basin according to area of upland catchment, geology, climate, vegetation cover, etc. The potential factors effective in suspended sediment yield were identified. Using the mean load within discharge data, 30 years mean suspended sediment load of each station was estimated. Multiple regression analysis was used to obtain the best statistical relationship between suspended sediment yield data and independent variables. According to the final model, the percentage of forest area density and mean annual discharge vary together and are in positive relationship with sediment yield. Inversely, the percentage of area of resistance and relatively resistant geological formation have negative effect on sediment yield. These three independent variables explain more than 96% of variation in mean suspended sediment load in Gorganroud basin and exhibit 19% standard error in their prediction.

**Keyword:** Suspended sediment, Regression analysis, Gorganroud basin, Statistical relationship, Medium density forest

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