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$$Q_d = \frac{(d_{75} - d_{25})}{2} \qquad (d_{50})$$

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<u>t   Trask</u>

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So=(d75/d25)$^{0.5}$ (

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Mud flow

Debris flow

Hyperconcentrated flow

$$\left(\sqrt{d_{75}/d_{25}}\right) \quad tTrask$$

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Winsieve

D90   D75 ،D50 D25

$Q\ dephi=(Q3-Q1)/2$

Q3: %

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Q1: %

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			D75	D50	D25
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. 2Med-(q3-q1)/2

Med=D50 q1=Q1=D25

. q3=Q3=D75

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			D90	D75	D50	D25	
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D25

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	D25		D50		D75	
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			D75	D50	D25	
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Sedimentological characteristics of debris flows and its comparison with source areas
(Ziarat watershed case study)

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Abstract

A debris flow is a phenomenon that usually happens in watersheds and plays an important role in sedimentation. It also creates damage. In many cases, most of experts confuse this phenomenon with flooding and for the same reason fail to take wise measures in managing and controlling it. One of the outstanding differences observed between this phenomenon and is different sedimentological behavior of these two. Finding the origin of debris flow plays a crucial role in determining its nature and developing proper methods to manage and control it. This research, focused on a debris flow happened in Tool Baneh watershed in south of Gorgan, Golestan Province, studies and analyzes the event sedimentologically. This debris flow event occurred in summer 1999 in *Ziarat* watershed, Golestan province, after a heavy rainfall. The debris flow originated shortly after an intense rainstorm in the upper part of watershed where runoff mobilized the debris. Debris flow event originated only from Tollbooth subwatershed. 12 sediment samples were collected from the deposits left the day after event and the grain size distribution analysis (granolometry) was performed. Field observations showed that debris flow had originated mainly from down the watershed and caused by the land slides in the valley sides of stream. For comparison of sediments of source and deposition area 7 locations in upper part of Tollbooth subwatershed (source area) were selected and 2 samples from right and left bank of the stream were collected that underwent grain size distribution analysis. Krumbine and symmetry indexes and trask coefficient were also computed for each sample. …

Key words: Debris flow, sedimentology, sediment yield, Ziarat watershed

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