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NRCS-CN

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(De Lima & Singh, 2002)

(Maksimov, De Lima et al., 2003, Singh, 2002, De Lima & Singh, (1999, Singh, 1998, 1964, )

( Singh, 2002, Singh, 1998, Sargent, ) (1982, Marcus, 1964

(Nunes et al., 2006)

(De Lannoy et al., 2004)

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(Nunes et al., 2006)

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Foufoula-Georgiou & )

Nunes et al., 2006, De Georgakakos, 1991

(Lima, 1998, Ladoy et al., 1991

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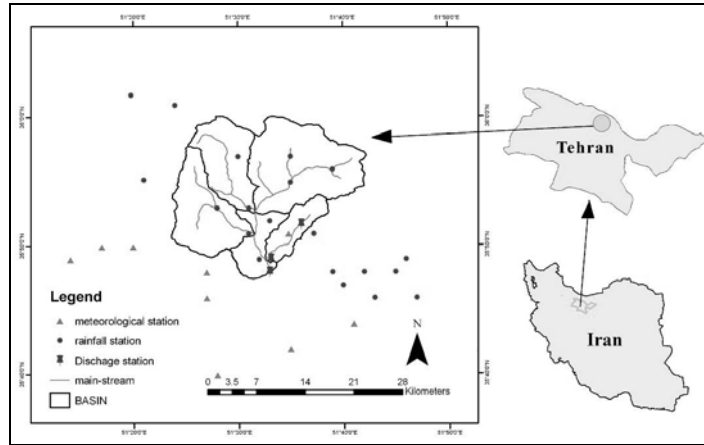
/ Km<sup>2</sup>

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HEC-HMS

HEC-HMS 3.1.3

HEC-HMS

(De Lima & Singh, 2002)

) (SCS,1956) (NRCS -CN)

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Mishra et )

.(al.,2003

NRCS-CN

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Zinati, )

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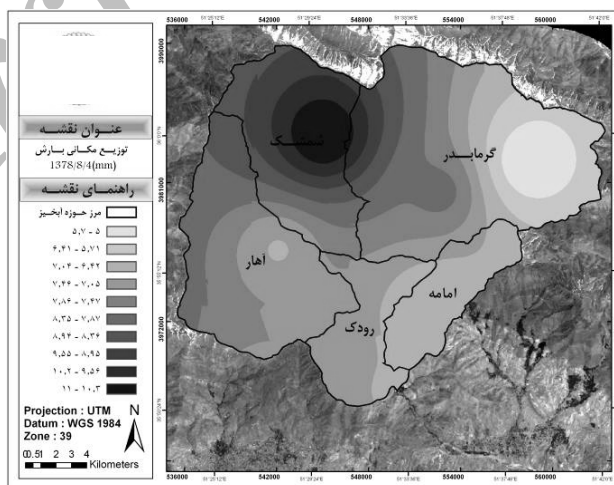
)

(Chow et al., 1988)

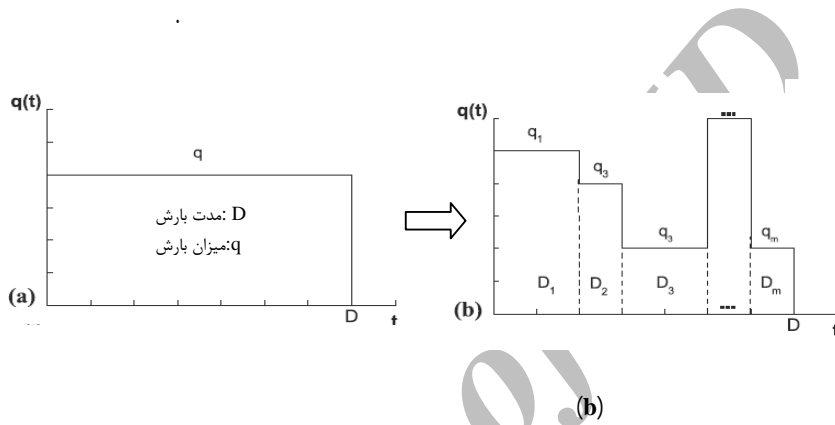
.(De Lima & Singh, 2002)

Yener et )

.(al., 2006



( ) a  
 (b ) (De Lima & Singh, 2002)

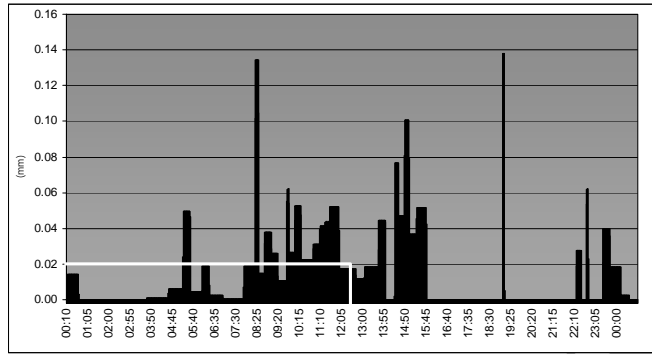


De Lima & Singh, 2002

$$C_x = \frac{\sum_{i=1}^n (C_{xi} A_i)}{\sum_{i=1}^n A_i}$$

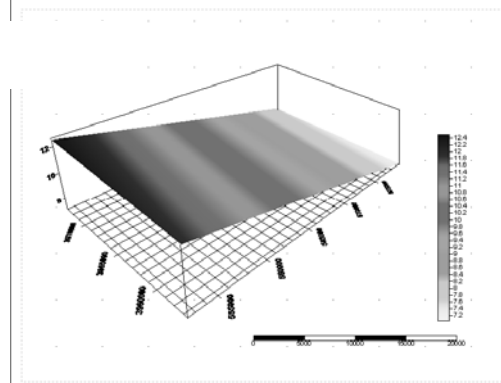
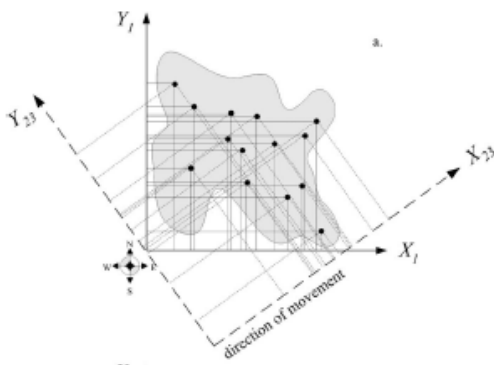
Archive 01

i :Ai  
 :Cxi  
 :Cx



( ) X,Y A,B,C UTM t<sub>(x,y)</sub> HEC-GeoHMS (Yener et al., 2006)

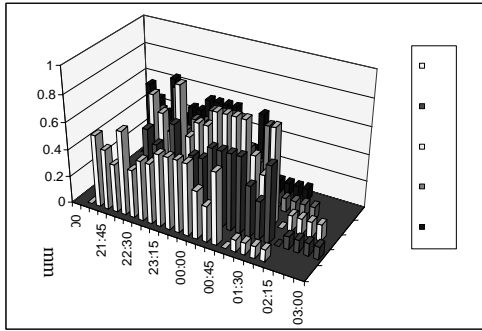
( )  $t_{(x,y)} = Ax + By + C \dots\dots\dots$



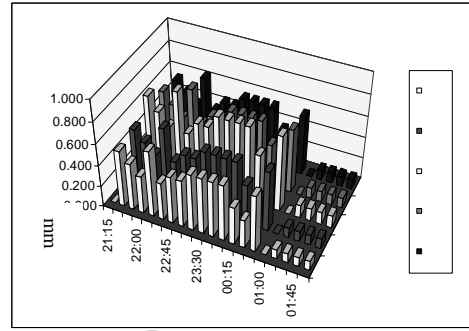
De Lannoy et al., (2004)

( )

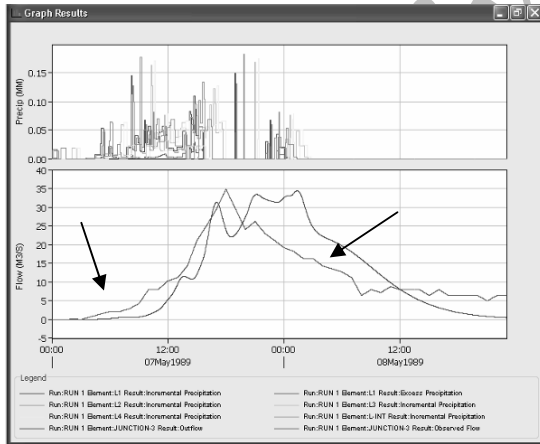
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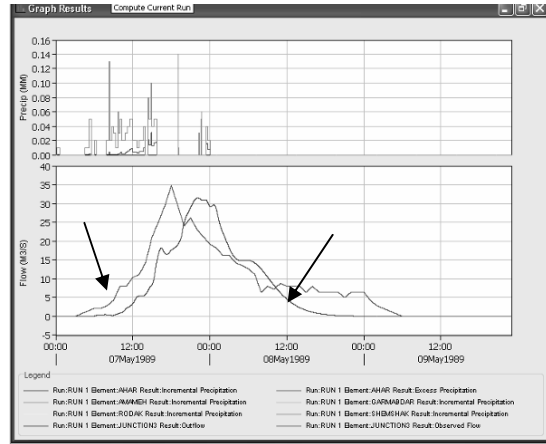
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Jensen, 1984, )

(Singh, 1998, De Lima & Singh, 2002

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HEC-HMS

Singh, 1998, De )

De )

Nunes et )

(Lima & Singh, 2002

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HEC-HMS

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## **Estimation of Storm Movement Effect on Rainfall-Runoff Modeling (Case study: Latian basin)**

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### **Abstract**

The storm movement clearly affects runoff processes. This work shows the results of an assessment that were undertaken to study the effects of moving storms on the rainfall – runoff processes. Using gravity center theory, analytical solutions are derived for flow due to storms moving over the drainage area. To simulate moving rainstorms, the rainfall distribution was simulated over the study area (Latian basin). Simulations were also undertaken by varying the storm pattern (e.g. spatial and temporal rainfall). By comparing the flow caused by a moving storm and stationary storm of the same duration, the influence of storm movement on the flow hydrograph is investigated. A simple mathematical model, based on the NRCS-CN, was used for comparing the results for hypothetical storms moving and stationary storms. The results show that the rainstorm movements have a pronounced effect on the discharge hydrograph. The results of 6 event simulation showed that considering storm movement leading to better simulation. According to results 5 events showed better hydrograph and in one hydrograph there was no difference between them.

**Keywords:** Storm movement, Rainfall- runoff modeling, Spatial distribution, Temporal distribution, HEC-HMS, Latian basin

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