

(2003/2/6 ;2002/9/21 )

(21)

(36° 30' - 35° 35')

( 3° 00' - 41° 55'4)

## **Hydrogeomorphological Quantitative Study for Watershed of Wadi Al-Therthar North – West Iraq**

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### **ABSTRACT**

The twenty one variables (representing climatical, hudrological and geomorphological factors) of six sub basins forming Wadi Al- Therthar north – west Iraq was studied to found relation between these variables and amount of runoff.

The area is located geographically between (36°30' - 35° 35') latitude and (43° 00' - 41° 55') longitude.

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Statistical analysis of correlation and regression of these variables applied where amount of runoff from these basins as dependent variable and the other variables as independent.

Results led to the formulations of mathematical equations which can be use for the predication of the rate of flow other selected variables.

(Magette et al., 1976)

.(Philip et al., 1992)

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 ( 3° 00' - 41° 55'4) ( 36° 30' - 35° 35' )  
 .(1 )

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(1:100000)

(Strahler , 1954)

(1 )



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: 1

ACR	
CCR	
BFI	
A	
C	
L	
RNX	
BRX	
TV	
LRNX	
LDD	
NDD	
RP	
TLV	
NV	
RR	
P	
I	$A * P =$
W	
S	
R	

(Chapman and Monroe , 1993)

(r)

(Pearson correlation coefficient)

(Naiman et al.,1983)

$$r = \frac{n \sum xy - (\sum x)(\sum y)}{\sqrt{n \sum x^2 - (\sum x)^2} \sqrt{n \sum y^2 - (\sum y)^2}}$$

=x

= y

=n

=r

(2 )

r > 0.9)

(r <- 0.9

(I)

...

(RR)

: 2

(r)	
0.989	I R
0.936	S R
0.924	W R
0.988	A R
0.961	TLN R
0.936	RR R
-0.904	NDD R

(NDD)

$$(r > -0.9 \quad r < 0.9)$$

(Y)

$$(1988) \quad Y = f(x) \quad (X)$$

.(Stell and Torrie ,1981)

$$Y = a + b_1 X_1 + b_2 X_2 + \dots + b_n X_n$$

= Y  
= X<sub>1</sub>, X<sub>2</sub>, X<sub>n</sub>  
= a, b<sub>1</sub>, b<sub>2</sub>, b<sub>n</sub>

(3)

$$(X_1, X_2, X_n) \quad (R) \quad (Y)$$

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$$R = -0.0458 + 0.000689 I \quad (1)$$

(3 )

$$R = 0.0456 + 0.0007085 I - 0.00000721 A \quad (2)$$

...

$$R=0.00934 + 0.000447 I+ 0.000375 A-0.000293 TLN \quad (3)$$

$$R= 0.00484+ 0.000692 I+0.00039 A-0.000375- 0.00633 RR \quad (4)$$

$$R = 0.383+0.000594 I+0.000154 A-0.000102 TLN+ \\ 0.008306 RR+0.198 NDD \quad (5)$$

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( <sup>3</sup> )	( / )		( <sup>2</sup> )	( )	
0.00627	6.154	1.351	55.5	334.9	
0.02155	4.640	1.313	180.5	334.9	
0.03233	2.228	1.583	446.6	311.6	
0.12735	7.029	0.537	853.2	349.2	
0.135	5.803	0.876	826.3	386.2	
0.6136	14.478	0.440	2520.5	365.8	



(4 )

.(5 ) (5)

: 4

3.76 E - 02	1	1
4.34 E - 02	2	2
9.97 E - 02	3	3
5.92 E - 02	4	4
0.000000	5	5

...

(5)

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	)	( )	
5.50E- 16	(	6.270 E -03	0.00627
7.7E- 16		2.155 E -02	0.02155
5.41E- 16		3.233 E -02	0.03233
-2.8E- 16		0.1273500	0.12735
-6.7E- 16		0.1350000	0.13500
1.11E- 16		0.613600	0.61360

(21)

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.1988

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