
(GIS)

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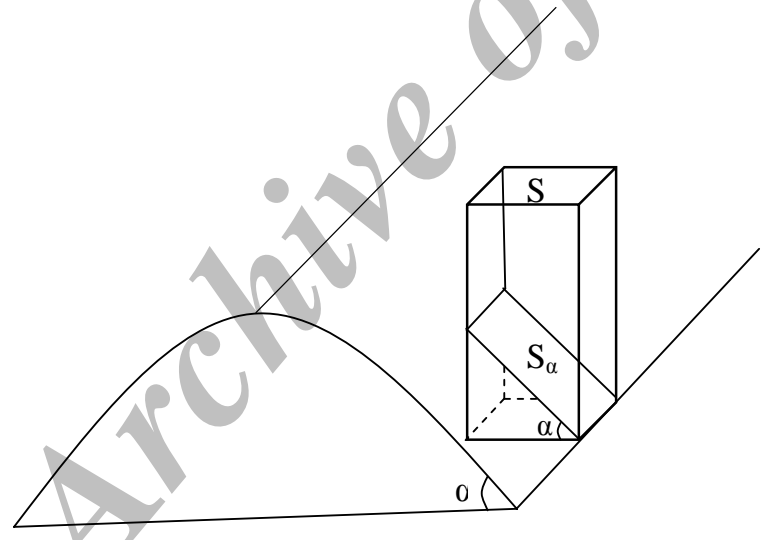
()
 (n) (S)
 : (s) ()
 $S = n \times s$

$$S = \frac{1}{2} \left| \sum_{i=0}^{n-1} (X_i Y_{i+1} - X_{i+1} Y_i) \right|$$

:(X_i, Y_i)

()

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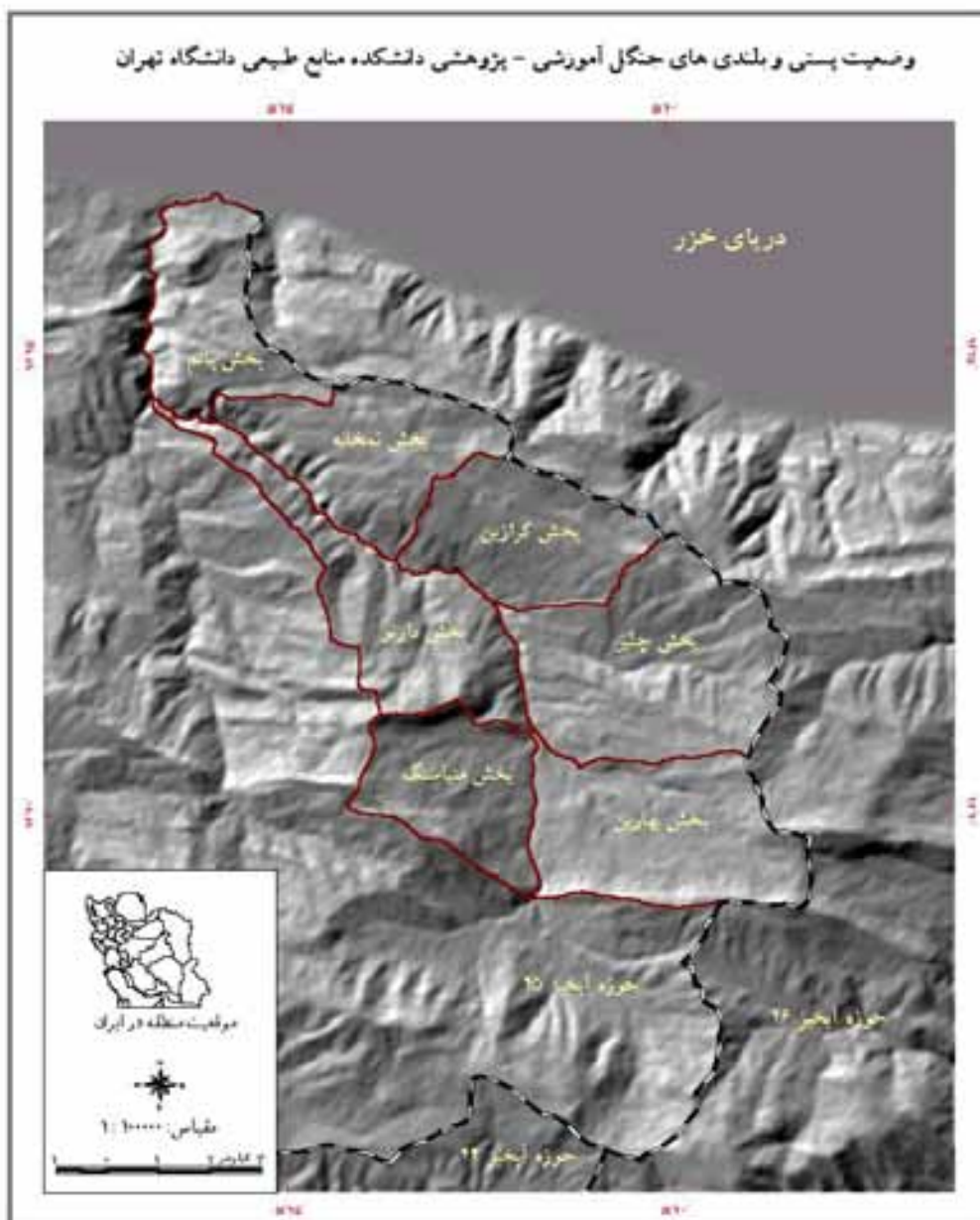


: S_α
 : S
 : α

Raster based GIS
 Surface area
 Planimetric area

Bevis, Cambareri
 Vector GIS
 Robert, Weih

وضعیت پستی و بلندی های جنگل آموزشی - پژوهشی دانشکده منابع طبیعی دانشگاه تهران



شکل ۲- وضعیت پستی و بلندی های منطقه مورد مطالعه

(S_i/S)	Twosample	
(P)	T	P
	/	/
	/	/
	/	/
		/

(/)

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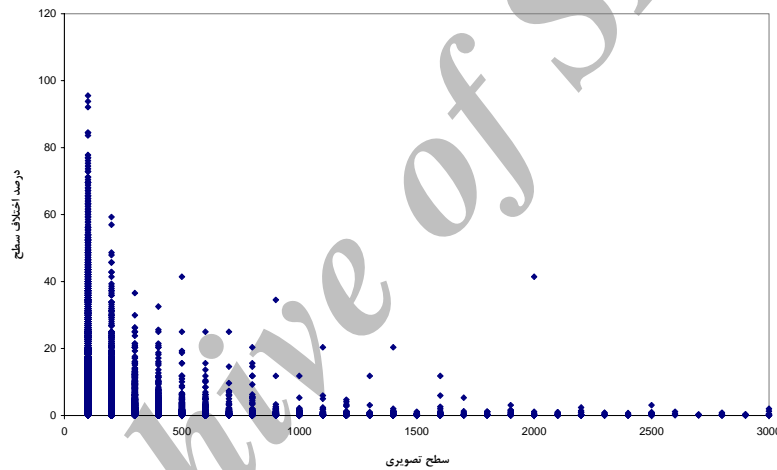
SPSS

(/)

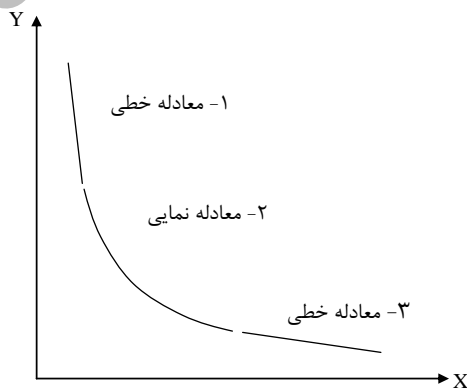
(/)

می شود.

$$Y = -112/48 - 0/008X + 228/4X^{0/0009} - 111/998 + 0/008X$$



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Non Linear

...

(Y)

:(X)

$$Y = -6/0.16 \cdot 11 + 0/413115 X$$

()

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$$Y = 0/0.16 X^{2/1426}$$

(Y)

:(X)

/

Twosample

()

)

Twosample

/

T_{test}	$T = /$	$p = /$
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()

DEM

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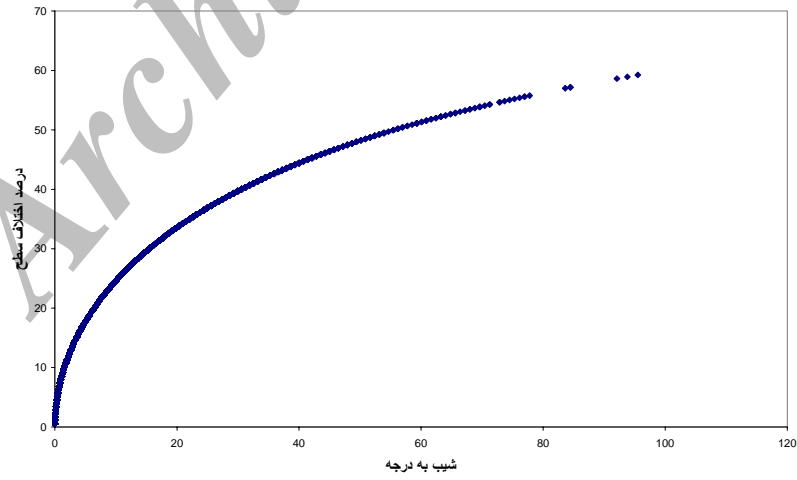
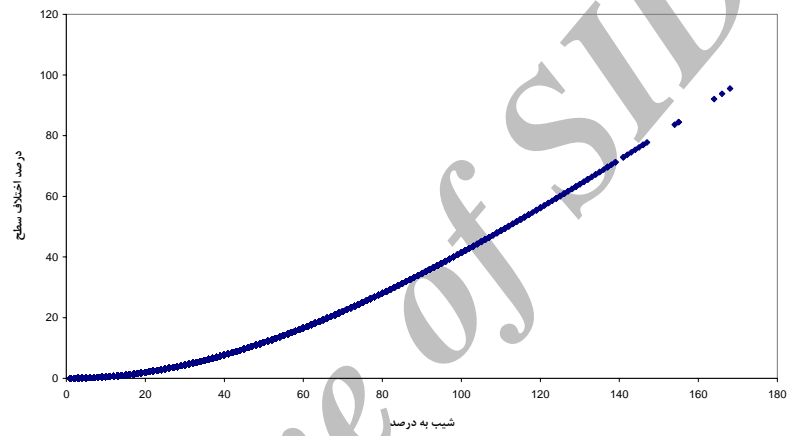
()

$S_{\alpha-S}$)

(S)

()

$(m \times m)$		m'
×	/	
×	/	
×	/	
×	/	





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GIS

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A Method of Calculating Surface Area Using Geographical Information System (GIS)

A. Soltani Largani¹, J. Feghhi^{2*}

¹M Sc. Student of Environmental Science, Faculty of Natural Resources, University of Tehran, I. R. Iran

²Assistant Professor, Faculty of Natural Resources, University of Tehran, I. R. Iran

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Abstract

This research was carried out in a section of Kheirood-Kenar educational and research forest station with the mean slope of 76 percent. A method of estimating the surface area using the slope is introduced which has vast applications in all areas of natural resource management. Statistical analyses of the collected data showed a significant relation between surface and plan metric areas with the slope, but there is not significant relation between the two areas. Non-significant difference between difference of surface and plan metric areas is a confirmation of joint effect of plan metric area and slope on surface area. For determining the surface area, the mean slope of the area can be used in the equation given by the authors (equation 1), but it is preferred to use the slope of each cell. Furthermore, two presented graphs (5, 6) can be used to find one factor given any one of the slope or the difference between surface area and plan metric area in percent. The for areas up to 55 percent slope difference between surface area and plan metric area is less than 10 percent of plan metric area.

Keywords: Area calculation, Surface area, Plan metric area, Geographic Information System.