

Table 3: Calculated parameters of the hydrological catchments of the slope-type debris flows alongside their definitions and dimensions. Correlation of each parameter with the respective debris flow volumes were calculated by Spearman's rho. The p-values represent the significance of the correlations.

catchment parameter	index and definition	dimension	Spearman's rho (all)	p-value (all)	Spearman's rho (n > 1)	p-value (n > 1)
planimetric area	A	m ²	0.46	< 2.2e-16	0.39	6.1e-12
length	L	m	0.43	< 2.2e-16	0.35	9.6e-10
perimeter	P	m	0.46	< 2.2e-16	0.38	2.3e-11
mean slope	S	degree	0.02	0.74	-0.04	0.50
relief	H	m	0.43	< 2.2e-16	0.34	1.1e-9
Melton ratio	$M=H/\sqrt{A}$	-	-0.22	1.1e-5	-0.20	7.6e-4
relief ratio	$R=H/L$	-	-0.11	0.02	-0.12	0.04
form factor	$F=(A/L)^2$	m	0.45	< 2.2e-16	0.38	1.1e-11
elongation ratio	$E=(4*\pi/L)$	m	0.45	< 2.2e-16	0.38	1.1e-11
circularity	$C=(4*\pi*A)/P^2$	-	0.05	0.29	0.03	0.63
drainage density	$D=L/A$	m ⁻¹	-0.45	< 2.2e-16	-0.38	1.1e-11
cut density	$CD=R/P$	-	-0.43	< 2.2e-16	-0.35	4.2e-10