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a	Area draining through a point (Beven and Kirkby 1979)
A	River channel cross sectional area
С	Active layer sediment transfer factor (Hoey and Ferguson, 1994)
d	Water depth
D	Grain size
D	Detachment rate (Kirkby 1992)
Do	Detachment rate parameter (Kirkby 1992)
Dx	Horizontal spacing
е	Cell elevation
Ε	Amount transferred between grainsize proportions
E	Proportion of material to be moved to active layer (Hoey and Ferguson,
	1994)
f	Proportion of sediment inactive layer (Hoey and Ferguson, 1994)
F	Grainsize fraction
F	Active layer proportion (Hoey and Ferguson, 1994)
g	Gravity
h	Travel distance (Kirkby 1992)
i	Neighbouring cell (Murray and Paola, 1994)
i	Grainsize fraction (Hoey and Ferguson, 1994)
j	Previous iteration soil saturation
J	Soil saturation
Κ	Hydraulic conductivity
Κ	Topographic index (Beven and Kirkby 1979)
т	TOPMODEL scaling parameter
m	Constant (Kirkby 1992)
п	Mannings coefficient
р	Bedload proportion (Hoey and Ferguson, 1994)
Р	Perimeter
$q_s$	Volumetric sediment transport
Q	Discharge
$Q_i$	Discharge (Murray and Paola, 1994)
$Q_o$	Total discharge carried (Murray and Paola, 1994)

## List of symbols

R	Hydraulic radius
S	Slope
t	Time
Т	Time step
W	Channel width
Λ	Gradient (Kirkby 1992)
$\Lambda_o$	Gradient threshold (Kirkby 1992)
β	Slope gradient (Beven and Kirkby 1979)
Ψ	Balance between forces restraining an moving particle (Einstein 1950)
$ ho_{s}$	Sediment density
ρ	Water density
$\phi$	Dimensionless bedload transport rate (Einstein 1950)

Rainfall rate

r