Application of Infiltration-and-Saturation-Excess Runoff Model in Evaluationg the Benefits of Water Reduction by Soil and Water Conservation Practices

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Abstract: An infiltration-and-saturation-excess runoff model in evaluating the benefits of water and soil conservation has been established according to the control and scale influencing runoff-generation model in Loess region. This model could separate flow into two components, i.e. overland flow and flow under the ground. Calibration of model parameters and its application of calculating the benefits of water reduction in three small catchments (i.e. Qing Yingcha, Cha Bagou and Xiao Lihe) were introduced. The results showed that, this model was favorable and feasible.

Key words: excess infiltration-saturation runoff model; evaluation; benefits of water and soil conservation; water reduction

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本刊 2002(20 卷)1 期蒋忠信先生的《帕隆藏布河流纵剖面演最小功模式》文中, 部分公式中上角标的幂指数或积分域排版出现错误, 现将误排的公式刊正如下:

公式编号	误	正
(2)	$h=H(s/S)N$	$h=H(s/S)^N$
(3)	$u=[2g(H-h)-2W]1/2$	$u=[2g(H-h)-2W]^{1/2}$
(4)	$u=[2(g-1)(H-h)1/2$	$u=[2(g-1)(H-h)]^{1/2}$
(5)	$u=[2H(g-1)]1/2[1-(s/S)N]1/2$	$u=[2H(g-1)]^{1/2}[1-(s/S)^N]^{1/2}$
(6)	$u\propto[1-(s/S)N]1/2$ (6)式表明, 流速 u 正比于$[1-(s/S)N]1/2$。	$u\propto[1-(s/S)^N]^{1/2}$ (6)式表明, 流速 u 正比于$[1-(s/S)^N]^{1/2}$。
(10)	$0.5\int^S Qu^2ds=\int^S\{(g-1)HQ[1-(s/S)^N]\}ds$ $=(g-1)HQ_0\int S(1-s/S-s^N/S^N+s^{N+1}/S^{N+1})ds$ $=(g-1)HQ_0S[1-1/2-1/(N+1)+1/(N+2)]$ 故 $0.5\int SQu^2ds=(g-1)HQ_0S\times\{1/2-1/[(N+1)(N+2)]\}$	$0.5\int^S Qu^2ds=\int^S\{(g-1)HQ[1-(s/S)^N]\}ds$ $=(g-1)HQ_0\int^S(1-s/S-s^N/S^N+s^{N+1}/S^{N+1})ds$ $=(g-1)HQ_0S[1-1/2-1/(N+1)+1/(N+2)]$ 故 $0.5\int^S Qu^2ds=(g-1)HQ_0S\times\{1/2-1/[(N+1)(N+2)]\}$