

坡面降雨径流和土壤侵蚀的数值模拟

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摘要 利用水力学原理建立了坡面降雨径流和土壤侵蚀模型, 分别采用特征线法和有限差分法对径流量和土壤侵蚀量进行了求解, 并针对具体降雨事件进行了模拟计算, 计算结果与试验小区实测值基本一致. 研究表明水土流失随着降雨强度和坡度的增大而加剧, 特别是坡度引起的土壤侵蚀

关键词 [降雨](#) [坡面径流](#) [土壤侵蚀](#) [数值模拟](#) [特征线法](#) [有限差分法](#)

分类号

SIMULATION ON SLOPE RUNOFF AND SOIL EROSION IN A RAINING EVENT

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Abstract

The paper deals with the model of runoff and erosion in slope land. The solution to the one dimensional hyperbolic runoff equations and sediment equation are obtained respectively by using the characteristics method and finite difference method. The simulation calculations were conducted for real rain processes and compared with experimental data of field test. The results show that the model and the program are reasonable and practical, and they are useful in the study of the soil erosion.

Key words [raining event](#) [slope land runoff](#) [soil erosion](#) [numerical simulation](#) [characteristics method](#) [finite difference method](#)

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