

坡耕地施加PAM对土壤抗冲抗蚀能力影响试验研究

Experiment Research on the Effect of Surface PAM Coverage on Erosion Soil Critical Shear Stresses of Slope Cultivated Land by Rainfall

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英文关键词: simulating rainfall; the critical shear stresses; slope degree; PAM

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中文摘要:

提出了采用人工模拟降雨试验数据直接计算临界抗剪切应力的方法。该方法以水流动力学原理为基础, 通过观测到的初始坡面侵蚀发生位置、雨强、土壤入渗率及测定坡面的平均流速来计算土壤的临界抗剪切应力。通过不同试验条件, 分析了坡度、地表PAM处理对土壤临界抗剪切应力的影响。试验条件为: 雨强100mm/h, 3种坡度: 10°、20°、25° (17.63%、36.4%、46.63%), 4种PAM覆盖度: 40%、60%、80%、裸地。结果表明, 随着坡度的增加, 临界抗剪切应力减小; 随着PAM覆盖度的增加, 临界抗剪切应力相应增加

英文摘要:

A direct calculation method of the critical shear stresses was established according to experiment datum on simulated rainfall. Based on the principle of hydraulics, through observing the initial place of slope erosion, rainfall intensity, soil infiltration rate, and the average velocity of slope flow, the critical shear stresses were calculated. At the same time, effects of slope degree and PAM coverage on the critical shear stresses were analyzed. The experiment was designed to have 1 level of rain intensity: 100 mm/h, 3 slope degrees: 10°, 20° and 25° (17.63%, 36.4% and 46.63%), and 4 treatments: control, 3 PAM coverage 40%, 60% and 80%. The results show that the critical shear stresses decline with slope degree increase; and the critical shear stresses increase with PAM coverage increase.

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