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The Experiment Study on Debris Flow Formation Process Based on REE

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Designing the experiment on debris flow formation process at artificial rainfall at the conditions of the loose material unusually rich for studying the debris flow formation process. The main results showed: (1) the fine particles moving first for the initiation of debris flow, and then mixed with the large particle and runoff increased sharply, along with channel block-outburst phenomenon; the debris flow phenomena gradually disappeared with the fine particles migration off and the channel rough serious. (2) the slop failure and moving at the rainstorm, the failure material deposited in channel and formed the dams which effect the erosion and deposits of the channel with moving down to downstream. (3) the erosion sediment was main from middle and lower channel, then from the upstream and slope; the debris flow fan materials was main from the downstream channel, then from the upstream and slope. (4) the pore-water pressure and water content, which not only effected by rainfall, but also effected by fine particles content and soil structure, changed obviously and varied in different time and different sites with fluctuation. (5) the fine particles played an important role in the process of debris flow initiation and it's accumulation and displacement effected the evolution of the basin topography and the formation of debris flow. In the debris flow forecast, the fine particles of soil content should be considered duo to its critical water content and pore-water pressure quite different in different content of fine particles of debris flow initiation.