



# 3-D Simulation of the Process of Overland Flow and Soil Erosion

## 坡面流與土壤侵蝕三維模擬

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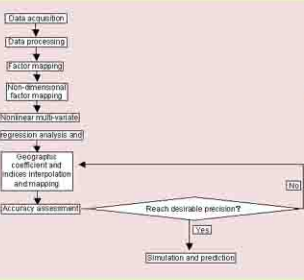
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863 project 2001AA135130; NNSF Project 49571058

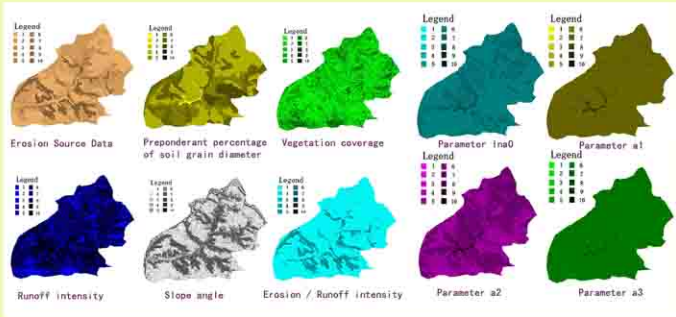
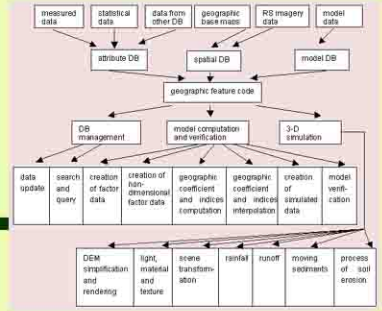
### Summary:

In this research, Remote Sensing Information Model of Water Erosion on Hillslopes (RSIMWEH) combined with particle system and metaball technology are used to simulate the overland flow and the process of soil erosion on hillslopes. Furthermore, based on the platforms of PowerBuilder, VC and OpenGL, the computation and 3-D simulation system of hillslope erosion has been developed.



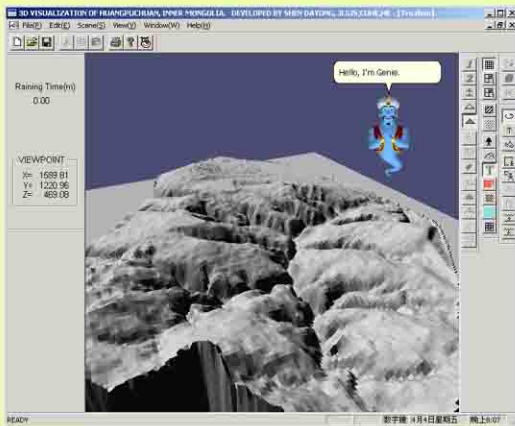
### RSIMWEH Methodology.

Structure and flow chart of 3-D simulation system of hillslope erosion.



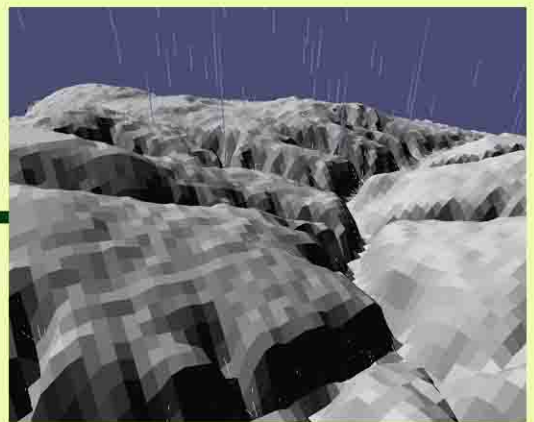
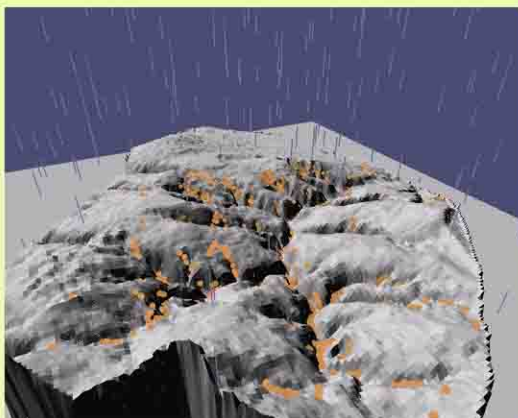
Factors and parameters of Remote Sensing Information Model of Water Erosion on Hillslopes.

Data resource: sub-watershed of Wufendigouin, the watershed of Huangfuchun, Zhungerqi, Inner Mongolia.



User helper agent—Microsoft Genie: help users to familiar with User Interface and technical details.

Rainfall is represented by particle system; slope angle is represented by DEM.



Sediment-laden overland flow is represented by fine cylinder. Where the length of the structure represents velocity, and the inclination of the structure represents the direction of movement. The unit of soil loss is represented by a metaball based on a pixel.