GIS tools for erosion/deposition modeling and multidimensional visualization

Part IV: Processed based erosion simulation for spatially complex conditions and its applications to installations

February - November 1997

Part V: Impact of transport capacity and terrain structures on erosion simulations

September - December 1997

Prepared by:

Geographic Modeling and Systems Laboratory, University of Illinois at Urbana-Champaign, Urbana, Illinois

H. Mitasova, L. Mitas, W.M. Brown, D. Johnston

Prepared for:

U.S.Army Construction Engineering Research Laboratories

S. Warren

Urbana, November 1997

Contents

Note: Chapters (V) describe work performed for the PART V contract, the rest is for the PART IV contract.

7. Full size figures

All full size figures are available in electronic form as part of the electronic version of this report at: www2.gis.uiuc.edu/erosion/reports/cerl97/rep97.html

For illustration, we provide color hardcopies for the following selected figures:

Figure 1. Comparison of observed and predicted deposition pattern using 1D and 2D flow

Figure 2. Impact of increasing rainfall excess on erosion/deposition pattern

Figure 4. Impact of increasing critical shear stress on erosion/depostion pattern.

Figure 8. Simulation of water depth, sediment flow and net erosion/deposition for different land use alternatives.

Figure 12. Volume models of soil properties

Figure 21. Steady state water depth simulated by SIMWE.

Figure 23. Sediment flow and erosion/deposition rates predicted by SIMWE from 10m resolution DEM smoothed by RST