Developments in Soil Science Series



Geomorphometry: Concepts, Software, Applications

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This book provides a practical guide to preparing digital elevation models (DEMs) for analysis and extracting land-surface parameters and objects from DEMs through a variety of software. It offers detailed instructions on applying parameters and objects in soil, agricultural, environmental and earth sciences. This manual of state-of-the-art methods serves the various researchers who use geomorphometry to further understand the complexities of soil.

KEY FEATURES

* Incorporates technical details on a variety of software packages, allowing researchers to solve real-life mapping issues

* Provides soil and agronomy researchers best practice techniques for soil data analysis to assist in enhanced land-use and planning

* Offers geologists essential tactics for better environmental management by providing a comprehensive analysis of the physical features of soil

* Includes a Companion Website with access to the latest technological advancements previously unpublished in any other comprehensive source: geomorphometry software, DEM data sources, and applications

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BRIEF CONTENTS Hengl & Reuter, Geomorphometry: Concepts, Software, Applications

Geomorphometry: a brief guide Mathematical and digital models of the land surface DEM production methods and sources Preparation of DEMs for geomorphometric analysis Geostatistical simulation and error propagation in geomorphometry Basic land-surface parameters Land-surface parameters and objects in hydrology Land-surface parameters specific to topo-climatology Landforms and landform elements in geomorphometry Overview of software packages used in geomorphometry Geomorphometry in ESRI packages Geomorphometry in SAGA Geomorphometry in ILWIS Geomorphometry in LandSerf Geomorphometry in MicroDEM Geomorphometry in TAS GIS Geomorphometry in GRASS GIS Geomorphometry in RiverTools Geomorphometry: A key to landscape mapping and modelling Soil mapping applications Vegetation mapping applications Geomorphometry and spatial hydrologic modelling Applications in meteorology Applications in geomorphology **Applications in Precision Agriculture** Modelling mass movements and landslide susceptibility Automated predictive mapping of ecological entities The future of geomorphometry

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