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Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Preface -- Foreword -- What is Digital Soil Morphometrics and Where Might it be Going? -- Part I: Soil Profile Properties -- Quantifying Soil Structure and Porosity Using Three-dimensional Laser Scanning -- Portable X-ray Fluorescence (pXRF) for Determining Cr and Ni Contents of Serpentine Soils in the Field -- In situ Analysis of Soil Mineral Composition Through Conjoint Use of Visible, Near-infrared and X-ray Fluorescence Spectroscopy -- The Effect of Soil Moisture and Texture on Fe Concentration Using Portable X-ray Fluorescence Spectrometers -- Estimating Soil Texture from a Limited Region of the Visible/Near-infrared Spectrum -- Estimating Soil Properties with a Mobile Phone -- Part II: Soil Profile Imaging -- Advances Towards Quantitative Assessments of Soil Profile Properties -- Computer Graphics Procedural Modeling of Soil Structure -- Soil Profile Imaging for Estimating the Depth Distributions of Clay, Iron, and Hydrological Conditions of Soils Under Rice in Northern Taiwan -- Variation of Soil Properties in a Mollisol Profile Wall -- Mapping a Profile Wall of a Typic Udipsamments from the Central Sands in Wisconsin, USA -- Comparative analysis of

Saturated Hydraulic Conductivity (Ksat) Derived from Image Analysis of Soil Thin Sections, Pedotransfer Functions, and Field-measured Methods -- Part III: Soil Depth Functions -- Measuring and Modelling Soil Depth Functions -- Electrical Conductivity Depth Functions for Delineating Paleosols -- Numerical Clustering of Soil Series Using Profile Morphological Attributes for Potato -- Digital Summaries of Pedon Descriptions -- Probabilistic Representation of Genetic Soil Horizons -- Using Soil Depth Functions to Distinguish Dystric from Xanthic Ferralsols in the Landscape -- Comparing Soil C Stocks from Soil Profile Data Using Four Different Methods -- Evaluation of Pedotransfer Equations to Predict Deep Soil Carbon Stock in Tropical Podzols Compared to Other Soils of the Brazilian Amazon Forest -- Part IV: Digital Soil Morphometrics - Use and Applications -- The Next Generation of Soil Survey Digital Products -- Digital Soil Morphometrics Brings Revolution to Soil Classification -- From Profile Morphometrics to Digital Soil Mapping -- Cone Penetrometers as a Tool for Distinguishing Soil Profiles and Mapping Soil Erosion -- Use of Ground Penetrating Radar to Determine Depth to Compacted Layer in Soils Under Pasture -- Part V: Summary and Conclusions -- Developments in Digital Soil Morphometrics.

Sommario/riassunto

This book is about digital soil morphometrics which is defined as the application of tools and techniques for measuring, mapping and quantifying soil profile properties, and deriving depth functions of soil properties. The book is structured along four research topics: (i) Soil profile properties, (ii) Soil profile imaging, (iii) Soil depth functions, and (iv) Use and applications. The pedon is at the heart of digital soil morphometrics. The use of digital soil morphometrics exceeds the pedology and soil classification purpose that it currently serves – it is used in rapid soil assessment that are needed in a range of biophysical studies. Digital soil morphometrics has the potential to enhance our understanding of soils and how we view them. The book presents highlights from The IUSS Inaugural Global Workshop on Digital Soil Morphometrics held in June 2015 in Madison, USA.