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Nota di contenuto	Part I: Soil Carbon in Space and Time -- Challenges for Soil Organic Carbon Research -- Micromorphology and Micromorphometry Techniques for Soil Organic Carbon Studies -- Soils as Generators and Sinks of Inorganic Carbon in Geologic Time.- Organic Carbon as a Major Differentiation Criterion in Soil Classification Systems -- Quantitatively Predicting Soil Carbon Across Landscapes -- On Soil Carbon Monitoring Networks -- A Novel Method for Measurement of Carbon on Whole Soil Cores -- Evolutionary Optimization of Spatial Sampling Networks Designed for the Monitoring of Soil Organic Carbon -- Distribution of Soil Organic Carbon in the Conterminous United States -- Overview of the U.S. Rapid Carbon Assessment Project: Sampling Design, Initial Summary and Uncertainty Estimates -- Part II: Soil Carbon Properties and Processes -- Molecular Models of Water and Cations Bridges in Humic Substances -- Rapid Evaluation of Soil Quality Based on Soil Carbon Reflectance -- Characterization of Soil Organic Substances by UV-Vis Spectrophotometry in Some Soils of Hungary --

Hot-Water-Soluble Organic Compounds Related to Hydrophobicity in Sandy Soils -- The Contribution of Soil Aggregates to Carbon Sequestration in Restored Urban Grasslands -- Contribution of Fungal Macromolecules to Soil Carbon Sequestration -- Carbon Storage and DNA Adsorption in Allophanic Soils and Paleosols -- Soil Microbial Biomass and C Storage of an Andosol -- Estimating Fine Resolution Carbon Concentration in an Intact Soil Profile By X-ray Fluorescence Scanning -- Probing Temperature-Dependent Organo-Mineral Interactions with Molecular Spectroscopy and Quartz Crystal Microgravimetry -- Storage of Total and Labile Soil Carbon Fractions Under Different Land-Use Types: A Laboratory Incubation Study.
- Could Soil Acidity Enhance Sequestration of Organic Carbon in Soils? -- Part III: Soil Use and Carbon Management -- Is Percent 'Projected Natural Vegetation Soil Carbon' a Useful Indicator of Soil Condition? -- Forest Fires and Soil Erosion Effects on Soil Organic Carbon in the Serrano -- River Basin (Chilean Patagonia) -- Soil Carbon Sequestration with Improved Soil Management in Three Villages in India -- Assessment of Near-Surface Soil Carbon Content Across Several U.S. Cropland Watersheds -- Mineralizable Soil Organic Carbon Dynamics in Corn-Soybean Rotations in Glaciated Derived Landscapes of Northern Indiana -- Long-Term Soil Organic Carbon Changes as Affected by Crop Rotation and Bio-Covers in No-Till Crop Systems -- Perennial Grasslands are Essential for Long Term SOC Storage in the Mollisols of the North Central USA -- Soil Organic Carbon Redistribution by Erosion on Arable Fields -- Relating Soil Carbon and Soil Structure to Land Use Management -- Microbial Biomass Carbon and Nitrogen Under Different Maize Cropping Systems -- Mitigation Effect of Farmyard Manure Application on Greenhouse Gas Emissions From Managed Grasslands in Japan -- Clay Addition and Redistribution to Enhance Carbon Sequestration in Soils -- Part IV: Soil C and the Environment -- Soil Carbon Management and Climate Change -- Globalsoilmap and Global Carbon Predictions -- Distribution of Organic Carbon on the Soils of Antarctica -- Carbon Balance in Soils of Northern Eurasia -- Topsoil Organic Carbon Map of Europe -- Soil Organic Carbon Content in the Topsoils of Agricultural Regions in Croatia -- Soil Carbon Variability in Some Hungarian and Croatian Soils -- Stratification Ratios of Soil Organic Matter in Agro-Ecosystems in Northeastern Brazil -- Carbon Balance at the Regional Scale in Southern Brazil Estimated with the Century Model -- Soil CO2 Fluxes From Different Ages of Oil Palm in Tropical Peatland of Sarawak, Malaysia -- Soil Organic Carbon Stocks, Changes and CO2 Mitigation Potential by Alteration of Residue Amendment Pattern in China -- Soil Organic Carbon Stocks Under Plantation Crops And Forest in the Rainforest Zone of Nigeria -- Evolution of Soil Carbon Storage and Morphometric Properties of Afforested Soils in the U.S. Great Plains -- Soil Carbon Research Priorities.

Sommario/riassunto

Few topics cut across the soil science discipline wider than research on soil carbon. This book contains 48 chapters that focus on novel and exciting aspects of soil carbon research from all over the world. It includes review papers by global leaders in soil carbon research, and the book ends with a list and discussion of global soil carbon research priorities. Chapters are loosely grouped in four sections: § Soil carbon in space and time § Soil carbon properties and processes § Soil use and carbon management § Soil carbon and the environment A wide variety of topics is included: soil carbon modelling, measurement, monitoring, microbial dynamics, soil carbon management, and 12 chapters focus on national or regional soil carbon stock assessments. The book provides up-to-date information for researchers interested in soil

carbon in relation to climate change, and to researchers that are interested in soil carbon for the maintenance of soil quality and fertility. Papers in this book were presented at the IUSS Global Soil C Conference that was held at the University of Wisconsin-Madison, USA.