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Weathering, and the Inorganic C Cycle -- Climate, Mineral Assemblage, and Soil Organic Carbon Are Intrinsically Linked Through Weathering Processes -- Mineral Stabilization of Soil Organic C-Bonding Mechanisms -- Mineral Stabilization of Soil Organic C-Field and Lab-Based Evidence -- ; Summary -- References -- Impacts of Climate Change on Soil Microbial Communities and Their Functioning / Franciska T. de Vries, Roben J. Griffiths -- ; Introduction -- Short History of Research on Climate Change Impacts on Soil Microbial Communities -- How can We Predict the Effect of Climate Change on Soil Microbial Communities? -- ; Conclusion -- References -- Nitrous Oxide Production From Soils in the Future : Processes, Controls, and Responses to Climate Change / Xia Zhu-Barker, Kerri L. Steenwerth -- ; Introduction -- Biological Processes that Produce NO in Soils -- Ammonia Oxidation Pathways -- Heterotrophic Denitrification -- Other Biological Processes -- Abiotic NO Production in Soils -- Hydroxylamine Decomposition -- Chemodenitrification -- Land Management Practices to Control NO Emission From Soils -- Fertilization -- Irrigation -- Tillage -- Cover Crops and Organic Amendments -- Climate Change and Soil N<sub>2</sub>O Production -- ; Conclusions -- Acknowledgments -- References -- The Response of Forest Ecosystems to Climate Change / Armando Gomez-Guerrero, Timothy Doane -- ; Introduction -- Global Distribution of Studies on Climate Change and Forest Soils -- Changes in Net Primary Productivity of Forest Ecosystems -- Sequestration of Carbon in Forest Soils -- The Capacity of Forest Soils to Provide Ecosystem Services -- Soil Processes in Relation to Soil Texture -- Microbial Processes in Forest Soils -- ; Conclusions -- References -- Effects of Elevated CO<sub>2</sub> in the Atmosphere on Soil C and N Turnover / Yakov Kuzyakov, William R. Horwath, Maxim Dorodnikov, Evgenia Blagodatskaya -- ; Introduction -- Approaches to Investigate Indirect Effects of Elevated CO<sub>2</sub> Concentration on Soil Processes -- ; Results and Discussion -- ; Conclusions -- ; References -- ; Index.

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Sommario/riassunto

Climate Change Impacts on Soil Processes and Ecosystem Properties, Volume 35, presents current and emerging soil science research in the areas of soil processes and climate change, while also evaluating future research needs. The book combines the five areas of soil science (microbiology, physics, fertility, pedology and chemistry) to give a comprehensive assessment. This integration of topics is rarely done in a single publication due to the disciplinary nature of the soil science areas. Users will find it to be a comprehensive resource on the topic.

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