Special Issue

Coupled Iron–Carbon Biogeochemical Processes

Message from the Guest Editors

Iron (Fe) is ubiquitous and ranks 4th in natural abundance in Earth's crust. Same as iron, carbon (C) is also abundant and the major element for organic and inorganic substances. They are both omnipresent in nature and reactive in chemical reactions. Most importantly, iron and carbon coupling is one of the most important natural processes that influence the cycles of major and minor active elements in the atmosphere, hydrosphere, biosphere, and geosphere. It drives important chemical reactions, such as oxygen delivery, nitrogen fixation, and climate change. Fe minerals have been suggested to play an important role in interacting with and stabilizing C in soils and sediments. C associated with Fe minerals by sorption and co-precipitation showed higher stability, indicated by longer turnover times, than non-Fe-bound C. Thus, it is crucial to understand the biogeochemical reactions of Fe-bound C in soils. This session will utilize interdisciplinary efforts to have an advanced understanding of the mechanisms of the coupled iron-carbon biogeochemical processes as well as their direct and indirect impacts on environmental processes.

Guest Editors

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Deadline for manuscript submissions

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Environmental issues are quickly becoming central political, economic and academic topics of the twenty-first century. A large number of modern challenges are directly or indirectly caused by complex interactions between environmental issues. Such issues require interdisciplinary research, knowledge and insights to understand and, ultimately, for solutions to be found. Through the journal Environments, we strive to create a platform for meaningful discourse by accepting contributions from a wide range of fields. We sincerely hope you will consider publishing your distinguished work in this highly-accessible, peer-reviewed journal.

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