Special Issue

Impacts of Climate Change on Plant Water Use, Carbon Balance, Nutrient Economy, and Their Interactions

Message from the Guest Editor

Among a variety of physiological processes, water use/circulation, carbon balance/cycle, and nutrient economy are the major ones that are sensitive to climate change and important to plant/ecosystem functioning. These physical and physiological processes are linked with each other, and their interactions are also responding to climate change. For instance, plant nutrient absorption can be facilitated by transpiration-driven water mass flow from the bulk of the soil to the rhizosphere. Nutrient translocation in plants also depends on the water flow. Rising temperatures and carbon dioxide concentrations will influence plant stomatal conductance and water use. Meanwhile, alternations in water use and nutrient absorption will also result in changes in photosynthetic capacity and carbon assimilation. Investigations of these different processes and their interactions under climate change are necessary to gain a synthesized view of plant–environment interactions. This information is fundamental for predicting the future of natural and agricultural systems and for developing sustainable natural resource management strategies.

Guest Editor

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In the context of global changes, the sustainable management of water cycles, going from global and regional water cycles to urban, industrial and agricultural water cycles, plays a very important role on the water resources and on their relationships with food, energy, biodiversity, ecosystem functioning and human health. *Water* invites authors to provide innovative original full articles, critical reviews and timely short communications and to propose special issues devoted to new technological and scientific domains and to interdisciplinary approaches of the water cycles. We ensure a critical review process and a quick turnaround between submission and final decision.

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