Special Issue

Temperature Sensitivity of Forest Soils and Greenhouse Gas Fluxes

Message from the Guest Editor

Heterotrophic soil respiration (R) is the second largest carbon (C) flux in terrestrial ecosystems after primary producer respiration. The decomposition of soil organic matter (SOM), mainly by soil microorganisms, is highly temperature-dependent. The increased release of carbon dioxide (CO2) and other greenhouse gases (GHG) from the soil to the atmosphere due to climate warming may further accelerate global climate change, a phenomenon known as positive feedback. Despite the decline in global forest cover, forest ecosystems contribute significantly to global organic carbon stocks. The temperature sensitivity of forest soils remains one of the key uncertainties in global climate change research. Therefore, this Special Issue focuses on soil temperature sensitivity in forest ecosystems. Potential topics include, but are not limited to, the following: - temperature sensitivity of different SOM fractions; - temperature sensitivity along climatic gradients; - changes in soil microbial abundance and diversity under experimental warming; - temperature sensitivity of forest soils under anthropogenic disturbances; - temperature adaptation of soil microbial respiration.

Guest Editor

Dr. Beata Klimek

Institute of Environmental Sciences, Faculty of Biology, Jagiellonian University, Gronostajowa 7, 30-387 Kraków, Poland

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Forests
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
forests@mdpi.com

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Editor-in-Chief

Prof. Dr. Giacomo Alessandro Gerosa
Department of Mathematics and Physics, Catholic University of Brescia, I-25121 Brescia, Italy

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