Special Issue

Strategies for Nitrous Oxide Emission Mitigation in Agrosystems

Message from the Guest Editor

The objectives of the Paris Agreement require the rapid reduction of global greenhouse gas (GHG) emissions. Nitrous oxide (N2O) is a powerful GHG estimated to account for 6% of the change in radiative forcing since 1750. This gas is now also considered as the major ozone-depleting substance in the atmosphere. Agriculture, through soil emissions, is the main anthropogenic source of N2O. Soils can act both as a source and a sink of N2O. However, on the global scale, the activity of soil as a source largely dominates its activity as a sink. The production and consumption of N2O in soils mainly involve biotic processes such as denitrification and nitrification, and depend on multiple factors. While different strategies to decrease N2O emissions from agricultural soils have been identified, for example (i) increasing N use efficiency concomitantly with lowering total N input, and/or (ii) decreasing the release of N2O per unit of nitrogen from nitrification and denitrifcation, etc., technical options remain to be specified at the operational scale.

Guest Editor

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