

73rd FEFCO

Forest Ecosystem Function Colloquium (FEFCO) は、地域や地球スケールのレベルで森林生態系機能とその持続的活用を科学的に理解することを目的とし、研究者間の学際的な交流を促進します。

第73回森林生態系機能コロキウムは、Caroline Plain博士にご講演いただきます。どなたでも参加できますので、多くの皆様のご参加をお待ちしております。京都大学農学研究科森林利用学研究室がホストを務めます。

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2024/11/1 16:45 - 17:45

Faculty of Agriculture Main Building, S174
and ZOOM



↑ Zoom form for
registration

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(University of Lorraine, France)

Influence of plants on methane fluxes in well-aerated forest soils

Methane (CH_4) is one of the main greenhouse gases and is responsible for around 20% of global warming (IPCC, 2022). Soils, and particularly upland forest soils where an aerobic environment prevails, are one of the world's main methane sinks (Dutaur and Verchot 2007). At the soil-atmosphere interface, net methane efflux consists of a net balance between methane production by methanogen archaea, mainly in the deep anoxic layers of the soil, and consumption by methanotroph bacteria in the oxic soil horizons of methane produced in the soil or diffusing from the atmosphere into the soil.

The presence of plants influences the physical characteristics of the soil (soil structure and texture, water content, etc.) as well as its chemical composition (availability of low-molecular-weight C compounds, carbon content, pH, mineral nitrogen). All these parameters can impact the abundances and activities of methanotrophic and methanogenic communities in the soil profile and therefore affect methane fluxes. To date, the influence of plants on methane fluxes has been studied mainly in wetlands or flooded soils where methane emissions are predominant. In this talk, I will present the impact that plants have on methane fluxes in well-aerated soils.