Project acronym: MEMORIAM

Project title: Impact of temperature on the carbon cycle in a siberian mire

Project leader: Adrien Jacotot, University of Orleans, France

Discipline: Earth Sciences & Environment: Global change & Climate observation

Station(s): Mukhrino Field Station - Nymto Park (Russia)

Peatlands are considered as one of the most powerful in atmospheric carbon assimilation, representing a highly powerful carbon tank, with more than 30% of earth's carbon stored in their soils for only 3% of land surface covering. However, current global changes and specifically the increases in surface temperatures have the potential to severely impact the carbon dynamic of peatland. Unfortunately, data about the response of boreal peatlands facing global warming are rare, and more studies are needed to evaluate their future. Within the MEMORIAM project, we propose to evaluate the impact of an 8 years warming experiment (started in the CliMireSiber project (Interact 2012) on the CO2 fluxes and on the microbial communities in the Siberian peatland of the Mukhrino Field Station. Specifically, the objectives are to assess how a simulated temperature increase can affect the CO2 fluxes. CO2 fluxes between the ecosystem and the atmosphere will be evaluated with the closed incubation chamber method. For this, we will use 4 opaque and 4 transparent chambers to evaluate both photosynthesis and respiration.This project will produce important and unique data in the evaluation of the response of boreal peatlands facing global warming.