



UNDER THE AUSPICES OF H.E. THE
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MR. PROKOPIOS PAVLOPOULOS
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ICCE 2019 SESSION

Identifying critical nutrient emission zones in landscapes: a key for reducing water eutrophication?

Conveners

Malgorzata Grybos and Gerard Gruau

Keynote Speaker

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Despite large-scale attempts made to reduce the input of anthropogenic nutrients to surface waters, eutrophication of rivers, lakes and reservoirs is still widely observed, posing serious problems for ecosystem and human health, as well as for the socio-economic development of affected zones. Nutrient emissions are generally not uniform at the landscape scale, even in conditions where nutrient inputs to the soils are spatially uniform. For reasons that remain to be determined, some parts of the landscape are more prone to emit nutrients than others. In addition, part of transiting nutrients can be temporally scavenged in particular areas of the landscape (wetlands, sediments in dam reservoirs), being then released, sometimes under different chemical form, back into circulation. Identification of these permanent or temporary critical source areas (CSA) and of the factors and conditions which make them hot spots of nutrient emissions in landscapes is of paramount importance in order to define and implement management strategies capable of combating surface water eutrophication. The purpose of this session is to advance our understanding of the factors that control the distribution of CSA and of the conditions and mechanisms which make these zones nutrient hot spots for surface waters. We invite contribution on both large scale (watershed) and smaller scale (soil/sediment-water interface) case studies. Studies with a synthetic view of how the CSA concept can be used to manage surface water quality are encouraged, as are field-based studies whose experimental design is specifically targeted to identify CSA geometry and location, and unravel the conditions and mechanisms making of these zones nutrient hot spots. Contributions concerning the control of CSA on nutrient speciation and bioavailability are also welcome.