14th International Symposium on Aquatic Oligochaeta

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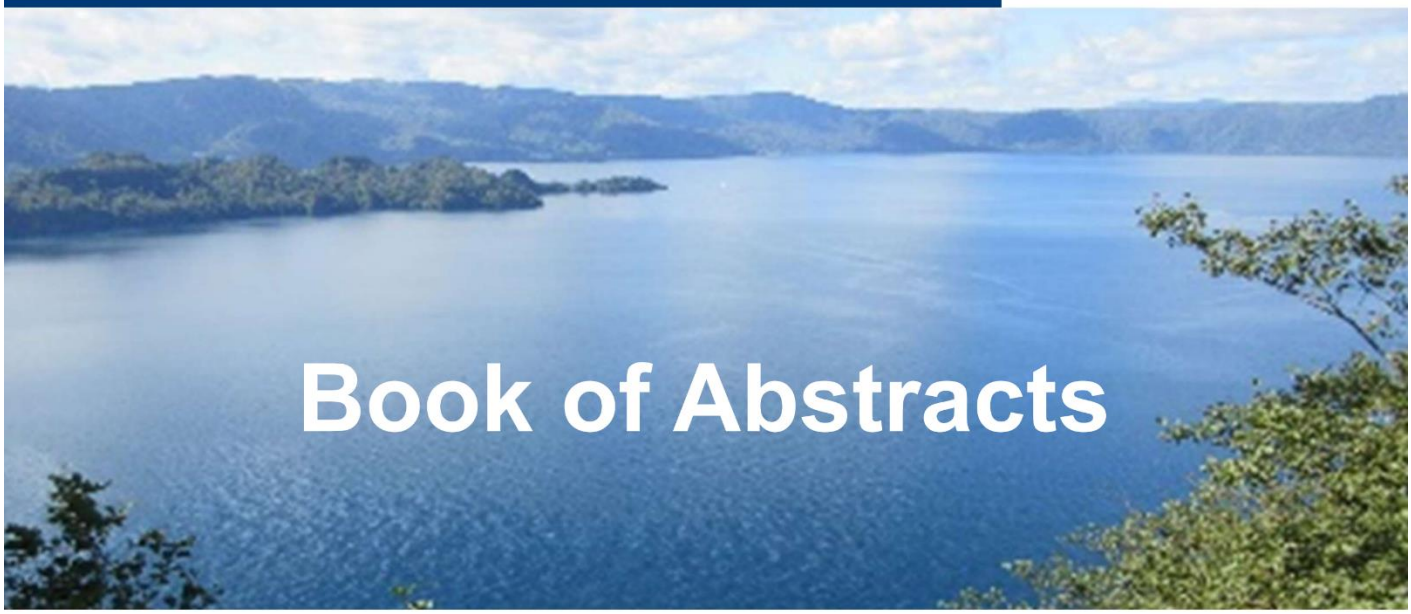
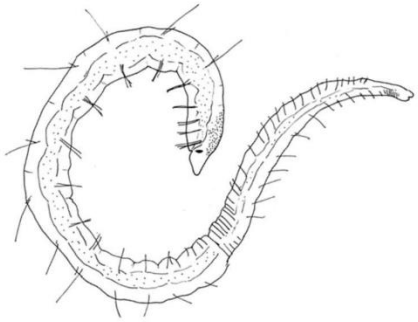


Book of Abstracts



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Keynote lecture
Biogeography

DNA barcoding and diversity of groundwater oligochaetes in the Ouémé basin, Benin, West Africa

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Groundwater is a major ecosystem in terms of biodiversity, endemism and relict species. However, its stygofauna, the obligate groundwater fauna, remains too often ignored, although present on all continents. Its knowledge is of particular interest for public health as groundwater is also the main drinking water reservoir on earth. This study aims to build a genetic database of groundwater oligochaetes at the Beninese country, which can be used as a reference for future studies based on DNA barcoding. It comes in a larger framework using the stygofauna as an indicator for water quality. A total of 150 wells were sampled in the Ouémé catchment between 2015 and 2017, and COI barcodes were obtained from 124 specimens of the genera *Aulophorus* (Naididae) and *Haplotaxis* (Haplotaxidae), the main two oligochaete components in Beninese wells. Molecular data enabled an interesting comparison between both genera, in terms of species diversity, distribution, and dispersal capacities. The numerous specimens of the stygophile *Aulophorus* mostly consist of 4 clades, widely distributed, with low genetic variability, suggesting an important dispersal capacity. In contrast, 7 potential species were identified in the rare stygobiotic *Haplotaxis*, each of them being restricted to one sub-catchment, with one exception, so that each sub-catchment can be characterized by its unique assemblage of *Haplotaxis* species. These first data suggest an interesting potential use of groundwater oligochaetes for water management in Benin: (1) the presence of *Haplotaxis* is an indicator of the phreatic origin of water in wells and, as such, suggests good water quality; (2) in contrast, the presence of *Aulophorus* species in a well gives evidence of poor protection of the latter against exogenous elements, which can have a negative impact on water quality.