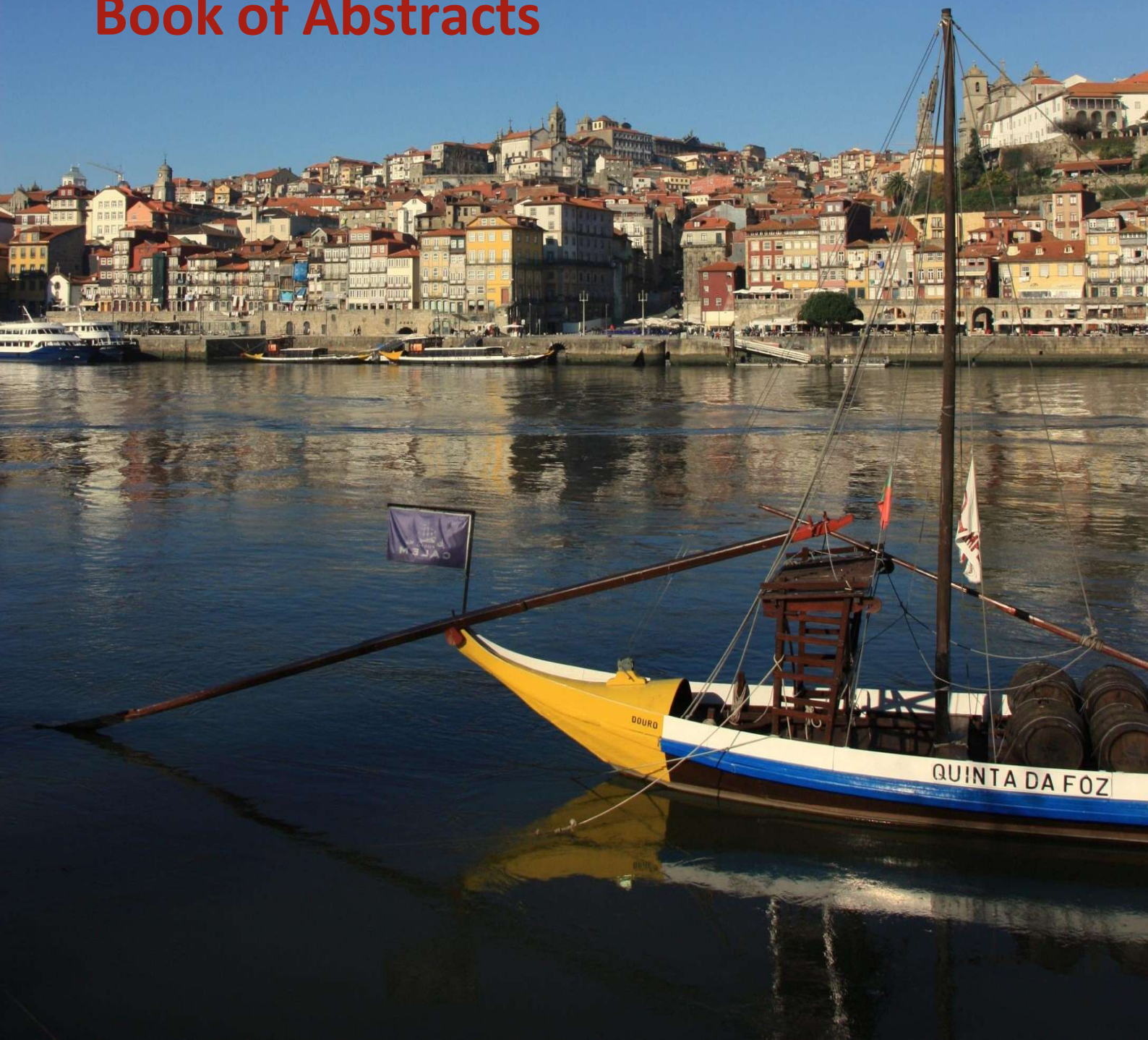


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Use of urban groundwater for public lakes supply: terrestrial ecotoxicological evaluation

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The correct management of water resources needs to be based on solid environmental information collected by monitoring programs and properly analyzed by well established methodologies. WAT Project is a transnational project whose main goal is the sustainable management of water and emerged as a result of the need to establish a process to optimize its use. We evaluated the possibility of using groundwater from Oporto city for watering of public gardens. We determinate physical and chemical parameters and performed two terrestrial ecotoxicity tests with the aim of assessing the risk to public health and to the environment of the urban ground water use. Water from 5 sampling sites of Poço das Patas hydrographic basin was studied (Cemitério, Ribeira, Imobiliária, Académico and Lar). Physical (Total Suspended Solids) and chemical (aluminum, ammonia, nitrates, Chemical Oxygen Demand and pH) parameters were evaluated. Ecotoxicity seedling emergency and seedling growth test with *Lactuca sativa* was performed according to the OECD208 (2006). An acute test (48h) for avoidance of contaminated soil with adult earthworms *Eisenia fetida* were performed following a protocol adapted from the Environment Technology Centre of Canada (EPS1/RM/43- 3-2004). In both ecotoxicological tests distilled water was used as control. All the physic chemical parameters analyzed were in agreement with the legal values established in DL nº 236/98. In all the water samples, seedling emergency occurred, although in four places it was inferior to the control, mainly in Cemitério and Ribeira. In Imobiliária the % emergency was higher than the control. The seedling growth was stimulated in samples from Ribeira and Imobiliária. In the other sample stations there was growth inhibition. The adult earthworms *Eisenia fetida* avoided the soil (100%) watered with the samples from Cemitério and Ribeira. In Imobiliária and Lar the avoidance percentage was 60% and in Academico was 40%. It is not advisable to use water from some of the studied sampling sites to water public gardens as seedling emergency and growth was inhibited and *Eisenia fetida*, a fundamental organism in the equilibrium of terrestrial ecosystem, avoided the soil watered with the samples. Further work is in progress.