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The comparison of sediment quality in the rivers of Eastern Slovakia by potential ecological risk index

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The current pollution of sedimentary environment is very serious and exceeds load capacity limit and it is influenced by other external factors such as climate, hydrodynamic conditions, pH, salinity, Eh, temperature and other. This influences can cause the heavy metals are re-released from the sediments which were long-term accumulated what can lead to the deterioration of ecological environment and even pose a threat to the organisms through the food chain. Distribution, enrichment characteristics of heavy metals (such as lead, cadmium, copper, zinc, mercury and arsenic) in the sediments in the rivers of Eastern Slovakia, were measured and analyzed in 2017 and 2018. River sediment quality in the territory of East of Slovakia, representing the water basins of the rivers Hornad, Laborec, Poprad and Torysa, was investigated. Sampling points were selected based on the current surface water quality monitoring network. The potential harmful effects of these heavy metals were evaluated by Potential Ecological Risk Index Method (PERI) based on considering the specialty of the area and the applicability of evaluation methods, which could quantify the potential ecological risk levels of heavy metals. The aim of the study is to compare the sediment quality of monitored rivers between 2017 and 2018 by method PERI.

Biography

Eva Singovszká is working at the Institute of Environmental Engineering, Faculty of Civil Engineering at the Technical University of Košice as a researcher. She is an expert in the field of environmental engineering with a special regard to the environmental risks. Her research activities are focused on assessment the environmental risks in sediments. The results of her scientific-research work have been published in a large number of national and international journals and proceedings of national and international conferences (>90). She has published several papers in prestigious Current Contents journals, her scientific reputation is evident from a large number of citations to her work (>100).

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