

## Topographic change by mining in Bor mine, Eastern Serbia.

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Bor City, located in the eastern part of the Republic of Serbia in Eastern Europe, contains the Bor copper mine, where mining has been conducted since 1903. Today, three open pits and one underground pit exist at the copper mine. Drilling of the oldest pit, the Old-Bor mine, started in 1903, and the second pit, the Veliki Krivelj pit, was excavated in 1979. Drilling of the old-Bor is finished, but the excavation of the Veliki Krivelj pit is still ongoing, and drilling has also started in the Cerovo pit since 1993. Overburdens and tailing dams are placed near the open pits, and these wastes are easily moved and diffused to the surrounding area because of transportation/erosion by wind and rain. They contaminate the soil of the surrounding cultivated land and residential area, and they are deposited on the floodplains of rivers. In addition, acidic mine wastewater contaminates the river water and groundwater causing considerable impact to the environment. In addition, the Bor River passing through this mine joins the Danube River, and therefore, the pollution affects the Danube River as well. In this research, to clarify the influence of this Bor mine on the environment, we investigate the change in the local topography due to the mining activity, including the effect of creating an open pit, overburden, and tailing dam. Comparing this artificial change of the environment with the river bed sediments and the river water concentration downstream of the mine, we can obtain the amount of diffusion of mining waste. To quantify the artificial change to the local topography, we calculate the change in the waste weight per volume of sediment by comparing the present topographic map with the past topographic map and the density of each substance through a field survey and values reported in the literature. For this purpose, we obtained a 1:25000 topographic map published in 1969 of the Veliki Krivelj pit area, and we use an old topographic map of the Old-Bor mine area. For the comparison, we used the current 5-mesh-DTM topographic map acquired by a sensor mounted in ALOS acquired in 2003–2008. In this presentation, we report the progress of the investigation on the change of the topography around the Veliki Krivelj pit.

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