



## **Modeling Soil Erosion For The Catchment Of A Lignite Mining Dump Using Monitoring Data**

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Modeling Soil Erosion For The Catchment Of A Lignite Mining Dump Using Monitoring Data

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Matter input caused by soil erosion from lignite mining dumps is, in addition to groundwater influx, one of the primary influencing factors for the condition of water in mining lakes.

An aim of the study was to assess the relevance and range of soil erosion within the watershed of the “Bockwitzer See” mining lake, which is located on a lignite mining dump in the Central German Lignite Mining Region in Saxony. The method consisted of a combination of continuous field measurements at plot scale and of model calculations using the physically-based model Erosion 3D.

Data acquired from two years of monitoring rainfall, runoff, erosion and soil moisture will be presented, and the modelling results will be discussed.

For instance, in order to place the long term monitoring plot to collect representative field data on the dumpsite, aspects of scale as well as accessibility of the venue due to reasons of rock mechanics had to be considered.

Concerning the modelling results, a good correlation between observed and modelled runoff and erosion could only be achieved by an event-based calibration of model parameters for infiltration and erosion resistance on the plot scale. This may have been caused by erosion relevant properties of the dump substrates due to the mining process, and this has to be taken into account for the long term modelling of erosion within the total surface watershed of the “Bockwitzer See”.