
POSSIBILITIES OF EXTRAPOLATION OF DIGITAL TERRAIN MODEL RASTER DMR 5G

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Airborne laser imaging (LiDAR) has been carried out throughout the Czech Republic, enabling the creation of raster of digital model of terrain. This material is widely used in various fields. From the point of view of hydrology demands, however, the shortcoming of this technology resides in the absence of accurate/complete channel topography due to the absorption of the near-infrared laser beams by water. Therefore, it is necessary to correct the data by replacing parts the original raster by more accurate data, such as geodetic or sonar measurements. However, there are some procedures that allow extrapolation of the geometry directly from the original rasters, based on the bank slopes within cross sections. In this work, linear and double-linear procedure applied by Mersel et al. [1] is used.

The presented paper is an introductory step towards the use of similar extrapolation procedures. In total, 82 cross sections were measured by theodolite. Subsequently, raster DMR 5G (Digital Model of Relief 5th Generation) was used for the extraction of 82 corresponding cross sections, on which the extrapolation was performed. The analysis revealed that the linear estimation method by Mersel et al. [1] results in slight overestimation of the minimum level of the bottom over the actual measured values (measured in situ). However, it should be noted that the analysis has so far been performed purely on the basis of comparison with the minimal level within cross sections, not taking into account the impact on the results of hydrodynamic modelling, for instance.