

## **The activity of the Geoscience Research Group exemplified by the study using ground penetrating radar (GPR) method for the Slup water dam investigation in the Męcinka.**

Marcin Jakubowicz <sup>\*1,2</sup>, Kamil Gromnicki <sup>1</sup>, Makary Musiałek <sup>1,2</sup>, Dominika Ciapka <sup>1</sup>,  
Mateusz Szczęśniewicz<sup>1</sup>, Karolina Szostak <sup>1</sup>, Jarosław Wajs <sup>1</sup>, Anna Gogolewska <sup>1</sup>

<sup>1</sup> *Faculty of Geoenvironment, Mining and Geology, Wrocław University of Science and Technology, Na Grobli  
15, 50-421 Wrocław, Poland*

<sup>2</sup> *Remote Sensing Business Solutions, Jana Długosza 60A, 51-162 Wrocław, Poland*

\*Corresponding author: e-mail

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The Geoscience Research Group at the Wrocław University of Technology conducted a comprehensive geophysical study on May 4, 2023, to locate the reinforcement in the concrete structure of a hydraulic dam at the Slup reservoir. The study deployed various tools, including the Mala ProEx ground-penetrating radar (GPR) with 800 MHz and 1.6 GHz antennas, along with GPS equipment for marking the start and end points of the profiles. The echograms were processed using the GPRPy software. A total of 84 profiles were investigated, selected due to visible structural damage and based on preliminary estimations of reinforcement depth in the concrete structure. The results were consistent across both longitudinal and transverse profiles, with the detected reinforcement depth varying from approximately 9 to 15 cm. While acknowledging the potential error due to the experimental nature of the measurements, this study provides vital preliminary insights into the depth of the reinforcement in the dam structure, laying a foundation for detailed further analysis.