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## **Flood embankment testing with the ERT method - specificity of measurements and interpretation**

### **Abstract**

The electrical resistivity tomography (ERT) method is currently used for testing hydrotechnical constructions e.g. flood embankments. The results of such tests are normally interpreted quantitatively using 2D inversion technique which may lead to false interpretation. Presented work is devoted to this issue. Attention is paid to the specificity of the conditions under which such tests are conducted. In the case of measurements made on the embankment crest, the main problem is the impact of the construction geometry on the measurement results. This also applies to measurements taken in the vicinity of artificial or natural slopes. Single ERT measurements were carried out on the crest and at the base of the Vistula river flood embankment as well as ERT monitoring on a specially constructed experimental embankment. Selected results of these studies are presented and discussed. The influence of surface morphology on the ERT results cannot be easily separated from the response of the researched center, the geological/geotechnical structure of the embankment. In order to determine the possible influence of the embankment slope on the test results, analogue modelling was carried out in the laboratory conditions. It allowed to study the relationship between the ERT results and the model geometry.