**Calibration Function for the Dependence of Dielectric Permittivity on Moisture**

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In this work, a calibration function was constructed to determine the functional relationship between the dielectric permittivity of the geophysical properties of the roadbed and the moisture content of these layers. To achieve this, an experiment was conducted with the following content. A flask was filled with layers composed of the main components of the roadbed: fragments of asphalt pavement; crushed stone of various fractions; ballast, and a subgrade soil layer. A stream of water was injected at the bottom of the flask.

Then, the moisture content of the roadbed layers was determined using an MG4 moisture meter. The water supply to the flask was recorded using a water flow meter. A series of measurements were conducted, based on which the calibration function was constructed. The experiments were carried out to determine the moisture level in the layers at which the delamination of the roadbed layers occurs. By solving the inverse problem in one way or another, determining the geoelectric section, and taking into account the relationship between this data and the moisture content, it is possible to predict the condition of the roadbed in sections where defects have been identified.

Experimental studies were conducted in laboratory conditions at the Serikbayev East Kazakhstan University to determine the dependence of the dielectric properties of various roadbed layers on moisture. The roadbed consists of the following layers: fine-grained asphalt; coarse-grained asphalt; reinforced concrete mixture; crushed stone with a 0.4 fraction; crushed stone with a 0.8 fraction; and subgrade soil (loam). A roadbed model was created, for which a cylindrical plastic flask with a height of 240 cm and a base diameter of 18 cm was used. The layers were evenly placed in the flask sequentially: the fourth layer was soil, followed by a ballast layer, then layers of crushed stone, and finally, in the upper part of the flask, fine-grained and coarse-grained asphalt layers were placed.

The purpose of this experiment is as follows. During the operation of road surfaces, certain sections collapse. The cause of this is either poor road construction or the excessive moisture content of the subgrade soil layer, which leads to the delamination of the roadbed layers. Therefore, it is important to determine the relationship, i.e., to construct a calibration function for the dependence of dielectric permittivity on moisture. Thus, by determining the geoelectric section using ground-penetrating radar systems based on engineering and technical methods or mathematical modeling, and having the calibration function, it is possible to predict the delamination process of the roadbed layers. The task of the experiments also includes determining the peak delamination point.