

Method for recording reflected GPR signals during the detection of subsurface cracks in asphalt concrete pavement relates to non-destructive testing of asphalt concrete pavement layers during construction and operation of highways, as well as remote sensing. Method consists in using single transmitting antenna, which emits electromagnetic field with single linear polarization, and two linearly polarized receiving antennas, whose polarization directions are oriented toward the polarization direction of transmitting antenna at specified angles, for probing road surface. Direct-path signal is recorded; then transmitting antenna, which emits electromagnetic field with single linear polarization, is activated, and road pavement structure is probed, simultaneously recording reflected electromagnetic field with two linearly polarized receiving antennas positioned orthogonally to each other and at specific angles to transmitting antenna, while the polarization direction of transmitter forms angles of 90° and 0° with the polarization directions of receiving antennas. Then, transmit-receive antenna system is rotated by 90° , and road surface is scanned; simultaneously, reflected electromagnetic field is recorded, and received electromagnetic field is converted into electrical signal, which is recorded and stored in digital form in computer memory. Dependence of the amplitudes of received signals on the polarization directions of transmitting antenna and two receiving antennas is analyzed using computer programs, and a conclusion regarding the detection of cracks in asphalt concrete pavement, including subsurface cracks, is made when discrepancies are identified between the amplitudes of signals received simultaneously by two receiving antennas. Technical result: improved reliability in detecting subsurface cracks in asphalt concrete road pavement and optimization of information regarding reflected signals being analyzed.