

Abstract

Master's dissertation of the second-year student, group PK-11mp of the Faculty of Instrumentation Vandzhura Anna on the topic: "Automated System of combined quality testing of railway tracks".

Master's dissertation consists of 90 pages, 23 figures, 19 references.

The master's dissertation is a statement and solution of the problem of describing the combined control system of railway tracks. The task of this project is to calculate the acoustic and electroacoustic paths of all ultrasonic sensors for rail monitoring, calculation of the overhead eddy current transducer. The master's dissertation contains the following calculations: acoustic paths, minimum and maximum voltage of the received signal by ultrasonic sensors, the absolute value of the voltage of the eddy current transducer and electrical elements of the ultrasonic system. The graphic part of the dissertation project contains a structural diagram of the ultrasonic rail inspection system, an assembly drawing of the ultrasonic inclined sensor, an electrical circuit diagram of the system, and a specification for the electrical circuit diagram.

Keywords: ultrasound, rails, ultrasonic flaw detection, echo-pulse method, combined method.

Purpose of work: to design a device that can effectively control the railway tracks to find all kinds of defects.

Subject of research: methods of automated control of railway rails.

Object of research: railway tracks.