ABSTRACT

OPTICAL METHODS FOR CONTROL CONTACT'S WIRES

Workload – 76 pages;

Number of illustrations - 24;

Number of tables - 25;

The number of sources per link - 18.

Topicality. Most of the achievements and discoveries in our world have been due to the tendency of people to be precise, humanity has always tried to raise this factor in many areas, and eventually it becomes an increasingly urgent task. The development of methods and instruments for research and measurement is extremely important. The accuracy of the results achieved in the measurement process depends on the reliability of the description of the objects under study and the reliability of the model of the surrounding world. Therefore, this is very important for most areas of natural and scientific and technical research, in technical, military, medical and biological fields. Of all known measurement methods, optical is considered to be the most accurate.

It is important that the optical methods of control are non-contact and have the ability to ignore some of the errors that are dazzled by contact methods. Modern technologies, including electronic and computer, as well as other scientific and technical achievements, give the opportunity to increase the accuracy and sensitivity of dozens of times, but with the qualitative image that forms the lens. The intrinsic property of the results of optical measurements and studies is their visibility and reliability.

The purpose of the study is to study the optical methods of control of wear of contact wire.

Objectives of the study:

1. Identify the main characteristics of the contact systems of power supply of rail transport.
2. Conduct an analysis of existing systems for monitoring the transverse dimensions of wires and cables.
3. Propose a new method and justify its benefits.
4. To conduct a preliminary analysis of possible errors of the proposed method.
5. To substantiate the necessity of using digital image processing to detect places of damage to the contact wire.

Object of research: the process of determining the wear of the contact wire of the railway transport by optical methods.

The subject of the study is the study of optical methods for controlling the wear of contact wire.

Publications. According to the materials of the master's dissertation, one article in the scientific collection and one patent for a utility model have been published.

1. XII scientific and practical conference of students and postgraduates. "A Look at the Future of Instrumentation" A collection of abstracts. Authors: Kucherenko O.K., Vishnevsky D.O. «Shadow method for controlling the wear of wire for rail transport» 2018, page - 103.
2. Patent for Utility Model No. 129646 dated November 12, 18, bulletin №. 21. «Device for control of wear of contact wire of railway transport»
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Key words: *pin wire, wire wear control methods, fiber bend, measurement errors, digital image processing.*