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MODELING OF RELIABILITY OF TRUCK'S WHEEL BRAKE CYLINDER

Abstract

In the introductory part of the paper, a procedure for determination of distribution law of operation time until failure occurs is explained and applied to modeling of reliability of a wheel brake cylinder for the brake system of the truck. Brake cylinder's reliability estimate is based on the results of reduced research in exploitation conditions. A procedure for planning the open type research was used in order to define the optimal plan for reduced research qualitatively. Processing of data on operation time until failure of the wheel brake cylinder occurs was done with application of the computer and corresponding software. In the paper is demonstrated that the testing of the nonparametric hypothesis, besides the providing of the elimination theoretical models which have the great dissipation from the empirical distribution, gives the quantitative parameters as well, which comparison may obtain the best distribution that best describes behavior of the random variable. Finally, generality and importance of the applied procedure for determination of the optimal distribution model were pointed out.

Key words: reliability modeling, plan for reduced research, wheel brake cylinder.