DEVELOPMENT OF MODELS FOR ON-BOARD COMPUTER CONTROL SYSTEM

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The modern railway transport uses a computer control system (CCS). It is a real-time system that allows you to perform the task of minimizing energy consumption and traffic safety. A similar computer control system is used on the first domestic diesel trains of the DEL-02 series with a traction asynchronous drive.

This system should be improved in order to obtain computer-readable data on the parameters of processes, the results of which can be used to assess the efficiency of both the entire diesel train and its individual units. The combination of modern mathematics and advanced hardware and software allows the system to be modernized.

Computer control system of the diesel train DEL-02 should perform the optimal control of the diesel train and the high-quality implementation of transmission characteristics. It is necessary for the system to be able to calculate in advance for each stretch of the route the optimal guidance option, based on various external factors [1]. The system should offer the operator the best way of guidance in the form of the current controller positions. One of the methods to accomplish the task is the control method with the model, when control is calculated first on the model, and then applied on a real object. On this basis, it is necessary to get the object model and its implementation in a software component of the CCS.

The thesis focuses on methods and means of control of asynchronous drive, as well as their mathematical models, algorithms and structures. As a result of the analysis of the existing TAD control schemes, the TAD model was implemented in the modeling package. This model is a part of the diesel train model and can later be used as a software component for an onboard CCS.

References: 1. *Мезенцев Н.В.* Синтез системы векторного управления тяговым асинхронным электроприводом локомотива / *Н.И. Заполовский, В.И. Носков, Н.В. Мезенцев* // Вісник Національного технічного університету "Харківський політехнічний інститут". – Харків: НТУ "ХПІ". – 2005. – № 56. – С. 151 – 156.