SELECTED ABSTRACTS OF D.SC. and PH.D. THESES

Selected abstracts of D.Sc. and Ph.D. theses submitted at Moscow State University of Railway Engineering

Garbuzov, I. I. Influence of on-board compensating devices on power quality parameters of AC electric locomotives. Abstract of Ph.D. (Eng.) thesis. Moscow, 2015, 24 p.

The author offered a model of traction network system with AC electric locomotives equipped with reactive power compensators, to assess their impact on power quality indicators taking into account dynamic changes in electromagnetic parameters of network sections between substations (typical length of 145 km). The method was developed to assess active, reactive and apparent power consumption when the locomotive driving with trains that offers different kinds of impact of on-board compensating devices and corresponding reactions of traction network system.

Goncharov, D. I. Estimates of dynamic load of railcars' bearing structures. Abstract of Ph.D. (eng.) thesis. Moscow, 2015, 23 p.

The scientific novelty of research is related to creation of methodology for assessing the impact of power plant work on the loading of railcars' body. As part of the methodology was developed a mathematical model of a railcar on the basis of object-oriented finite element model of the body, taking into account expected effects, which are defined for dynamic load of bearing structures, and in relation to the fatigue life of body parts, and from the point of view of design of power plant parameters in the future.

Kolyadin, D. G. Management of transport company costs in the system of interaction with owners of railway infrastructure. Abstract of Ph.D. (Economics) thesis. Moscow, 2015, 24 p.

In the framework of the thesis were improved methods for accounting variable costs, was offered the procedure for determining their share at the expense of detailing according to cost elements, in particular it affected the system of budgeting and planning of transport company expenses in cooperation with owners of infrastructure facilities. Reasonable levels of a lower limit of tariff corridor, established on the provision of infrastructure services in the railways, were recommended.

Podsorin, V. A. Economic control methods for updating technical means and systems of a transport company. Abstract of D.Sc. (Economics) thesis. Moscow, 2015, 48 p.

The thesis substantiated scientifically theoretical positions and basic principles of control of the process of updating rail transport technical base in market intra-industry competition and high uncertainty in the external environment. The system of economic methods, corresponding to new transport business strategy and innovative development objectives of companies, was developed. The evidence was set out and dependences of targets of this development on methods for formation of sources of renovation and technical resources were formalized. The conceptual framework for assessment of innovative projects and amortization policy that fulfills the purposes of depreciation and technological progress were offered.

San Maung. Improving efficiency of production and restoration of wheel sets of rolling stock by improving cutting tool (on railways of Myanmar). Abstract of Ph.D. (Eng.) thesis. Moscow, 2015, 23 p.

The author showed a role of instrumental factor for wheel-turning on Myanmar railways, regularities of wear and destruction of the tool were set, including due to initial plastic deformation of contact layers of the cutting insert. A mathematical model of thermal state of such an insert at the time of operation was constructed and design of the tool was calculated, providing a decrease in thermal stress of the cutting blade during wheel-turning.

Yudaeva, O. S. Improvement of the system to ensure safe working conditions for conductors of passenger cars. Abstract of D.Sc. (Eng.) thesis. Moscow, 2015, 48 p.

The features of working conditions of conductor in rail cars of old and new design were analyzed in terms of impact on the human body of harmful environment factors (noise, vibration, working premises microclimate, chemical and biological indicators of air, light, functional load intensity). The comparison results showed clear advantages of modern equipment of cars, providing environmentally friendly WC facilities, air conditioning, efficient noise and vibration protection, ergonomic furniture and a number of other amenities that enhance comfort and safety. Separately, a study of fire safety in the train was conducted taking into account chemical factors of environment and estimated time for safe evacuation was set. The measures to improve sanitary conditions and information communication systems were offered. ●