

## ABSTRACTS OF PH.D. THESES

*The selected abstracts of Ph.D. thesis  
submitted at Moscow State University of  
Railway Engineering*

**Beryakov, S. N. Increase in efficiency of railway transport operation based on improvement of investment activity management system. Abstract of Ph.D. (Economics) thesis. Moscow, 2016, 24 p.**

The peculiarities of investment activity in railway transport are revealed, methods for evaluating the efficiency of complex investment projects, burdened with social component, introduced into the transport company, are improved, as well as existing methods of risk factor accounting, which arise in transport infrastructure operation. The encumbrance of the infrastructure project with the social component in order to reduce the resource intensity of the transportation process is justified from the economic point of view.

**Grigoriev, P. S. Forecasting the residual resource of industrial diesel locomotive frames. Abstract of Ph.D. (Eng.) thesis. Moscow, 2016, 24 p.**

The thesis offers a technique for modeling the dynamic loading of the frame of an industrial diesel locomotive, a methodology for estimating its fatigue damage based on a deterministic approach is developed. The effect of shock impacts from passage of rail track junctions on the diesel locomotive frame is studied, and dynamic loading and fatigue resistance of the frame under these conditions are evaluated.

**Diakov, A. I. Features of the force interaction of separately standing foundations with a ground base under low-cycle loads. Abstract of Ph.D. (Eng.) thesis. Moscow, 2016, 24 p.**

Scientific novelty of the work consists in refinement of the computational model of force resistance of separately standing foundations for forcing, taking into account the redistribution of normal contact stresses under the basement under low-cycle loads. The features of the interaction of centrally loaded foundations with a sand base, the effect of repeated loads on the load-bearing capacity of foundations during punching were experimentally revealed. A model is shown for determining the ordinates of the diagram of normal contact stresses under the base of the foundation with a variable coefficient of «bed» and a changing form of the diagram.

**Khripkov, K. N. Structural and technological solutions for construction of a roadbed in talic zones of the distribution of permafrost soils. Abstract of Ph.D. (Eng.) thesis. Moscow, 2016, 24 p.**

The author offers a technique of technological regulation that provides an increase in the bearing capacity of bases with active taliks and the stability of the roadbed on the principles of direct and reverse connection between the characteristics of the foundation soils and the parameters of building loads. A schematic diagram of the functioning of the dynamic system «foundation of the roadbed—complex technology», including directional regulation of construction loads and monitoring of the state of frozen soils is formed. The technological regimes of three stages of improving the physical and mechanical characteristics of the soils of the active layer and talik in the basement are developed: 1) the installation of a drainage system; 2) the use of intensive technology; 3) hardening of unstable parts of the roadbed.

**Kishkurno, K. V. Improving the traction power supply system with the use of regulating devices and compensating reactive power plants. Abstract of Ph.D. (Eng.) thesis. Moscow, 2016, 24 p.**

Methods and technical solutions for the analysis of electromagnetic processes in the traction power supply system have been developed that provide for the possibility of regulating the voltage of the transformer under load and the presence of longitudinal and transverse capacitive compensation installations included in the traction network, which take into account the longitudinal and transverse asymmetry of the system parameters and the real parameters of traction external power supply schemes. The method of matrix calculation of equalizing currents is substantiated in a joint examination of traction and external power supply systems. Methods and algorithms for local, zone and centralized regulation of voltage and reactive power in the traction network by regulating devices and compensating installations based on a mathematical model are proposed.

**Kuznetsov, K. S. Methods of increasing the efficiency of management of flows of material and technical resources of railway transport. Abstract of Ph.D. (Economics) thesis. Moscow, 2016, 24 p.**

A method for estimating the optimal parameters for management of supply of material and technical resources, taking into account the risks of losses and allowing to significantly reduce the total costs of logistics, a method for managing warehouse freight flows based on operational accounting has been developed, and a methodology for assessing efficiency has been adopted to optimize the technology for processing stockpiles. A complex economic and mathematical model for managing the supply chain of resources has been created, which differs from existing models in the combined strategy of inventory management in the distribution of resources by consumers and increases in economic efficiency of logistics for railway transport.

