SELECTED ABSTRACTS OF PH.D. THESES

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

Khusainov, I. I. Design of «structural geomassif» in difficult geological conditions. Abstract of Ph.D. (Eng.) thesis. Moscow, 2015, 24 p.

The author found regularities of influence of technological parameters of jet grouting on strength and deformation properties of grouting elements of silty-clay soils with liquidity index $0 < I_L < 0,5$, to increase bearing capacity of the base and at the same time minimizing consumption of materials. The technique of search for rational constructive decisions of foundations on the basis of artificially enhanced soft soils, methods of reinforcement of jet grouting were offered, considering staging of construction and seismic conditions.

Kuzmin, D. V. Organization of a regional network of piggyback terminals. Abstract of Ph.D. (Eng.) thesis. Moscow, 2015, 24 p.

This author analyzed and categorized problems and prerequisites for development of piggyback transportation in the country, based on the hierarchy method piggyback system selection algorithm was proposed. A simulation model of regional piggyback transportation was developed based on needs and their demand for quality criteria, availability of appropriate terminal network. Combination of approaches to simulation for study of transportation system functioning at the regional level was justified.

Nguyen Van Hung. Methods for calculation of immersed tube tunnels on seismic effects. Abstract of Ph.D. (Eng.) thesis. Moscow, 2015, 24 p.

The author has developed a model of granular water-saturated media, which allows to determine speed of propagation of seismic waves in bottom sediments, as well as methodology and subprogram for estimating parameters of oscillations in layered soils under seismic actions. A simplified method for determination of dynamic characteristics of interacting tunnel lining of immersed tube and soil mass, methods for calculating stresses and soil movements on the border with water medium and at the time of propagation of surface Rayleigh waves. The results of studies are planned to be used in drafting national regulations concerning seismic resistance of Vietnamese transport tunnels.

Rozhkov, A. D. Assessing the impact of rail transport on macroeconomic effectiveness. Abstract of Ph.D. (Economics) thesis. Moscow, 2015, 24 p.

The author assessed in terms of value factors, characterizing the influence of railways on price reduction of goods exchange processes, highlighted and structured those that hinder development of passenger transportation. Adapted mechanism of risk assessment and cost of capital when considering investment projects involving industrial companies and the state were assessed, including the use of integrated indicators of primary accounting and macroeconomic indicators of economic activity was justified.

Sokolov, O. O. Improving resource of traction electric machines of DC electric locomotives. Abstract of Ph.D. (Eng.) thesis. Moscow, 2015, 24 p.

The mechanism of reducing dielectric properties of insulating structures of traction electric machines (TEM) of DC electric locomotives was clarified, conditioning of processes was defined, method of calculating insulation aging, taking into account thermal, thermo-mechanical and electrical wear, was improved. An original device to control volume moisturizing of insulating elements of TEM capable of timely identification of traction machines with low electrical resistance of structures to prevent insulation breakdown and extend operating life was developed.

Tran Xuan Lin. Stress-strain state of cylindrical shells, including interacting with surrounding soil, with elastic and elastic-plastic deformation. Abstract of Ph.D. (Eng.) thesis. Moscow, 2015, 24 p.

The study assessed the effect of different types of non-linearity on stress-strain state of T-connection of cylindrical shells of pipeline and railway tanks, an algorithm was created that gives an opportunity to link three spatial soil models: Fuss-Winkler base, elastic layer model and bulk density. The refined formula was obtained for reduced modulus of elasticity of the elastic layer. An approximate method for taking into account the sequence of construction of underground structure by introducing into a calculation field model initial stress gained in earlier stages of installation was offered. ●