

ABSTRACTS OF D.SC. AND PH.D. THESES

*Selected abstracts of D.Sc.
and Ph.D. theses submitted
at Russian transport universities*

Bondarenko, N. V. Formation of the area of economically effective strategies for gradual development of the appearance and capacity of Vladivostok multimodal transport hub for container transit. Abstract of Ph.D. (Eng) thesis [*Formirovanie oblasti ekonomicheskii effektivnykh strategii etapnogo razvitiya oblika i moshchnosti Vladivostokskogo multimodalnogo transportnogo uzla dlya realizatsii konteinerogo transita. Aforeferat dis... cand. tech. nauk*]. St. Petersburg, PSTU, 2018, 16 p.

The expediency and urgency of allocation of a port zone in the south of Primorsky region, which is capable of ensuring transit of containers from APR to Europe, is justified in the dissertation. A systematic assessment of development possibilities of Vladivostok multimodal hub is given, a methodology for formation of cost-effective strategies for changing its appearance and capacity for increasing container traffic has been developed; a methodology for phased implementation of strategic tasks has been developed; a technology for managing long-term processes has been proposed; it takes into account the experience of mathematical modeling, system engineering, dynamic programming and experimental research.

Chin Wang Thanh. Development of an adaptive algorithm for automatic control of landing of a passenger aircraft on the basis of an anthropocentric approach. Abstract of Ph.D. (Eng) thesis [*Razrabotka adaptivnogo algoritma avtomaticheskogo upravleniya posadkoi passazhirskogo samoleta na osnove antropotsentricheskogo podhoda. Avtoreferat dis... cand. tech. nauk*]. Moscow, MAI, 2017, 26 p.

In the course of the study, an anthropocentric approach and an adaptive calculation principle are substantiated in creation and implementation of an algorithm for formation of a desired trajectory of a passenger aircraft landing in an automatic control mode. The identification of a mathematical model of the pilot's activity in the form of an optimal regulator is provided for piloting the aircraft during landing. A modification of a gradient algorithm for solving the problem of optimizing the control of aircraft movement during landing is proposed, as well as a simulation complex that implements the algorithms used in the C++ programming language.

Dementieva, Yu. V. Perfection of methods for analysis and prediction of occupational traumatism

in track facilities. Abstract of Ph.D. (Eng) thesis [*Sovershentvovanie metodov analiza i prognozirovaniya proizvodstvennogo travmatizma v hozyaistve puti. Avtoreferat dis... cand. tech. nauk*]. Moscow, RUT, 201, 24 p.

The author established and scientifically substantiated statistical dependencies of occupational traumatism at railway track facilities on the influence of various factors. She suggested a set of mathematical models for assessing the risks and causes of accidents, the severity of injury to the injured person, as well as a methodology for analysis and forecast, which, in contrast to their predecessors, allows more specific calculation of occurrence of injuries of workers at certain workplaces on the basis of empirical weighting coefficients of violations of labor safety requirements.

Nesterova, N. S. Methodology of designing a multimodal transport network. Abstract of D.Sc. (Eng) thesis [*Metodologiya proektirovaniya multimodalnoi transportnoi seti. Aforeferat dis... doc. tech. nauk*]. St. Petersburg, PSTU publ., 2018, 32 p.

The theoretical significance of the dissertation research is connected with formalized description of system representation of a multimodal transport network (MTN), its functioning and development in the form of a set-theoretic model. The proposed model reflects a complex four-level structure and serves as a mathematical basis for design methodology that allows to combine the methods of solving local problems in changing the appearance and capacity of MTN facilities for aggregating particular results into a single whole. The developed methodology helps investment assessment and feasibility study of network development strategies as of a set of multimodal transport corridors designed in the framework of a unified transport system of the country.

Shvetsov, A. V. Providing security and protection of subways against unauthorized interference and impacts. Abstract of Ph.D. (Eng) thesis [*Obespechenie bezopasnosti i zashchity metropolitenov ot nesanksionirovannogo vmeshatel'stva i vozdeistviya. Avtoreferat dis... cand. tech. nauk*]. Moscow, RUT, 2018, 24 p.

The matrix of trends of modern terrorism on the subway has been developed, factors of specificity of a transport object that determine the requirements for barrier devices have been substantiated, a technique has been proposed for placing antitank fences at stations on the outer perimeter. Methodical recommendations for assessing the risk of unauthorized interference and for the choice of location for inspection zones at metro stations are given.

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