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Aleksander Sładkowski *Editor*

Modelling of the Interaction of the Different Vehicles and Various Transport Modes

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Application of Artificial Neural Networks for Short-Term Forecasting of Container Flows in Kazakhstan

Zhomart Abdirassilov, Aleksander Śladkowski, Aliya Izbairova and Sugerali Sarbaev

Abstract International container transport plays an important role in the exchange of goods between China and Europe, and accordingly, the efficiency of the transportation increases with the organization of special container lines (land and sea). Due to its geographical location, the territory of Kazakhstan has become one of the main international land lines for passage of container cargo in recent years. Priority is given to solution of such problems as reduction of cargo delivery time, simplification of customs operations, setting attractive and competitive tariffs, ensuring a high degree of cargo safety, development of transport infrastructure, assessment of the transit potential of railway network of the country, predicting future cargo flows. This work shows the use of artificial neural networks (ANN) for predicting container train flows in the direction of China–Europe. For this purpose, a three-layer perceptron with a learning algorithm, based on the back-propagation of the error signal was used. A concrete example shows how the ANN training process is conducted and how the adjustable parameters are selected.

Keywords Container train · Predicting container flows · International transport corridor · Artificial neural networks

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