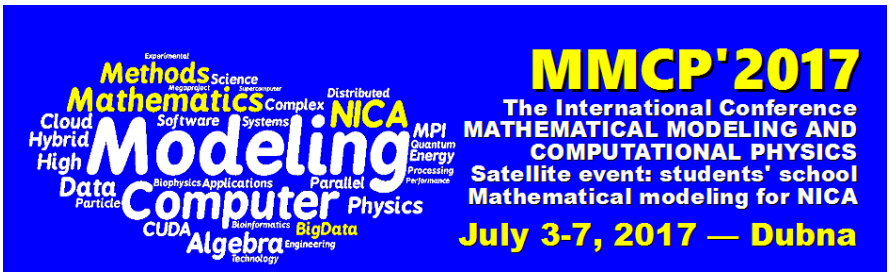

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Application of artificial neural networks and singular-spectral analysis in forecasting the daily passenger's traffic in the Moscow Metro

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In this paper, we developed a methodology for the medium-term prediction of daily volumes of passenger traffic in the Moscow Metro. It includes three variants of the forecast:
1) on the basis of artificial neural networks: a multilayer perceptron (MLP) was used, on the input of which a set of factors affecting the daily volume of passenger transportation was supplied; 2) using the singular-spectral analysis implemented in the package "Caterpillar"-SSA: in this case, only the data of the time series of daily passenger
traffic were analyzed; 3) joint use of the MLP and the "Caterpillar"-SSA approach: to the input of the neural network, in addition to the above factors, the forecast data computed using the package "Caterpillar"-SSA were supplied. The developed methods and algorithms allow one to conduct with an acceptable accuracy a medium-term forecasting of the passenger traffic in the Moscow Metro.

Primary author: Mr OSETROV, Evgeny (JINR / FTI "Rostransmodernizatsiya)

Co-author: Prof. IVANOV, Victor (JINR, LIT)

Presenters: Mr OSETROV, Evgeny (JINR / FTI "Rostransmodernizatsiya); Prof. IVANOV, Victor (JINR, LIT)

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