

ABSTRACT

Thesis contains: 80 p., 6 tables, 30 fig., 2 add. and 20 references.

ORIENTAL, UNIONED GRAPH, SPECTRUM, MATRIX OF
COMPATIBILITY, WAYS, LENGTH OF A WAY.

The theme: “The problem of finding paths with using spectral graph theory”.

The task of finding ways is very important in our lives. The purpose of this work is to create a software product that will calculate the number of paths of fixed length. For the solution of this problem, the spectral theory of graphs is used. The object of the study is the paths in the graph. The subject of the study is the spectral theory of graphs.

For a clear example of the relevance of this task, the problem of finding a route with the minimum number of transplants was formulated and solved. As a graph, the scheme is low-cost airlines, where the top of the graph - is the city, and ribs - the routes of connections between cities.

For further research and improvement of this work, it is possible to add to the input data the price of the tickets or the flight time and the duration of stay in the city of the transfer, in order to find not only the path with the minimum number of transmissions, but also the cheapest and fastest variants of the flight.