

## **SUMMARY**

Explanatory note: 106 pages, 46 figures, 21 tables, 3 appendices, 19 sources in the list of links.

### **ARTIFICIAL NEURAL NETWORKS, MACHINE LEARNING, MULTILAYER PERSEPTRON, BACKWARD PROPAGATION, WIND POWER, PREDICTION**

The object of the study is a technical decision support system based on machine learning technology.

The purpose of this work is developing a machine learning application of wind power forecasting.

The research method of this work is investigation of using Artificial Neural Networks and machine learning systems for wind power forecasting.

The result of this study is software application that can be used for wind power forecasting at the nearest 8 hours with average accuracy at 80 or more percentage.

The actuality of the work - as the wind power industry is growing extremely fast, it's mandatory to have an opportunity of connection the huge power of wind electricity stations to industrial electricity grids. At the same time all modern European countries invest more and more in wind electricity stations. Besides, the electricity market becomes more and more influencing, and to be a part of the market players, wind power producers must have a reliable prediction system.