

As the neural network based on matrices automatically forms a number of neurons in the output layer equal to the matrix dimension, it was supposed that the NN of the back propagation of error algorithm divides the matrix into n vectors with arrays consisting of n amount of elements in the second layer after having processed the matrix in the first (hidden) layer. Therefore, it can be assumed that there must be an inter-layer neuron connection only between neurons of the output layer in the valid three-dimensional network as the inter-layer connection in the hidden layer will spoil initial data. So, it will be logical to connect neurons which handle vectors but not matrices.

CONCLUSION

The study has shown that “pseudo-three-dimensional neural networks” have properties of three-dimensional neural networks due to a great number of separate NN. It is possible that such a model of the neural network will help to get higher accuracy of the forecast for electric load than two-dimensional networks because of weekdays taken into account and averaging of data which is not used in this case.

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