

## **Review of emergency control methods of power system modes based on machine learning methods.**

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Today there are significant changes in the structure and principles of modern power systems management. An increase in the share of renewable energy sources together with the decommissioning of fossil fuel power units, the introduction of converters based on power electronics and a change in the functioning principles of the electricity and power markets lead to a change in character and speed of transient processes in power systems with synchronous increase in the uncertainty of electrical modes. These factors have a negative impact on the emergency control reliability, realized on the basis of using a deterministic analysis of electrical modes. In the new conditions for the power systems functioning, special attention is given to machine learning methods that allow building implicit models for controlling the power systems modes based on training data. The paper presents modern methods meta-analysis of emergency control modern methods of the electric power systems modes based on machine learning methods. The advantages and disadvantages of the considered methods are identified, conclusions about possible directions for further research are made.

*Key words: electric power system, emergency control, dynamic stability, static stability, machine learning, phasor measurement units, digital signal processing.*