

## **Enhancement of power systems stability based on wams data control.**

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The paper presents an algorithm for determining PMU optimal installation locations and the subsequent justification for possibility of using additional voltage and frequency control of power plant synchronous generators according to the data of the wide-area measurement system in mathematical model «North-West of Russia – Center – Belarus» UPS. The algorithm for coordinating of control systems settings has been improved to increase the level of small-signal and transient stability. The analysis of the effect of the additional phasor difference feedback in automatic frequency and power regulators of power plant on transient stability using a joint calculation of the transient processes and the extended equal area criterion has been conducted.

*Key words: steady state stability, transient stability, wide area measurement system, synchronous generator, automatic voltage regulator, power system stabilizer, automatic frequency control, graph.*