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### **Instantaneous state parameters during electromechanical transients.**

Estimation of magnitude, frequency and phase values of steady-state regime parameters (current and voltage) is an urgent problem nowadays for dynamic processes study in non-linear systems (in power systems in general as well as in generators particularly). Modern phasor measurement units provide measurements of 50 Hz sampling rate (one measurement point per 20 ms) according to the IEEE C37.118-2005 standard. To date there is a number of methods employed for state parameters calculation. These techniques are based on the assumption of signal parameters permanence. It is in conflict with non-linear characteristics of electrical systems equipment. Existing approaches to state parameters estimation with sampling rate equal to fundamental frequency don't allow to precisely calculate state parameters values at the arbitrary time points during transients. In order to overcome the shortcomings of these methods improved Hilbert transform is proposed based on the assumption that signal magnitude and frequency may vary.

*Key words: canonical Hilbert transform improved Hilbert transform, instantaneous state parameters, state parameters, transients.*

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