

A Digital Filter for Symmetrical Components Identification

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Abstract : This paper presents a fast and efficient technique for monitoring and supervising power system disturbances generated due to dynamic performance of power systems or faults. Monitoring power system quantities involve monitoring fundamental voltage, current magnitudes, and their frequencies as well as their negative and zero sequence components under different operating conditions. The proposed technique is based on simulated annealing optimization technique (SA). The method uses digital set of measurements for the voltage or current waveforms at power system bus to perform the estimation process digitally. The algorithm is tested using different simulated data to monitor the symmetrical components of power system waveforms. Different study cases are considered in this work. Effects of number of samples, sampling frequency and the sample window size are studied. Results are reported and discussed.

Keywords : estimation, faults, measurement, symmetrical components

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