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Generation of Power Quality Disturbances Required for the Performance Assessment of Different Power Quality Monitoring Algorithms using Multiple Approaches

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Abstract: *This paper presents multiple approaches for the generation of Power Quality Disturbances (PQDs) and the development of the dataset required for evaluating the effectiveness of various PQDs detection and classification algorithms. In today's power networks, power quality is an important issue. Three PQDs, namely the voltage sags, swells, and interruptions, are considered under study in this research paper. In today's electricity grid, these PQDs are thought to be more prevalent and common. Today's end-users demand high-quality supply for the operation of their sensitive equipment. The utility must keep an eye on PQ and take the required actions to maintain it in order to deliver a supply of high quality. The creation of reliable and efficient PQ monitoring algorithms is a major goal for many budding researchers. The PQD signals or dataset of PQDs are required for the development and performance assessment of these PQ monitoring algorithms. The different approaches available for the generation of PQDs and dataset are discussed in detail in this research paper. This research work focuses on generating PQDs through the use of MATLAB programming, simulation of PQD models in the MATLAB Simulink environment, and experimental methodology. This paper will serve as a useful resource for budding researchers working in the PQ domain.*

Keywords: Power Quality Disturbances, Power Quality, Power Quality Monitoring Algorithms, Classification.

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