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Sabin(10) **Pub. No.: US 2022/0360076 A1**(43) **Pub. Date: Nov. 10, 2022**(54) **SYSTEMS AND METHODS FOR
AUTOMATICALLY CHARACTERIZING
DISTURBANCES IN AN ELECTRICAL
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ABSTRACT

A method for automatically categorizing disturbances in an electrical system includes capturing at least one energy-related waveform using at least one intelligent electronic device in the electrical system, and processing electrical measurement data from, or derived from, the at least one energy-related waveform to identify disturbances in the electrical system. In response to identifying a disturbance in the electrical system, each sample of the at least one energy-related waveform associated with the identified disturbance is analyzed and categorized into one of a plurality of disturbance categories. The disturbance categories may include, for example, (a) voltage sags due to upline electrical system disturbances, (b) voltage sags due to downline electrical system faults, (c) voltage sags due to downline transformer and/or motor magnetization, and (d) voltage sags due to other downline disturbances.

