## An impedance-based CT saturation detection algorithm for bus-bar differential protection

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## Abstract-

This paper presents an algorithm for CT saturation detection based on the measurement of the power system source impedance seen from the relay location. The algorithm estimates this source impedance using a short-data window impedance-estimation algorithm. Samples are taken from the Current Transformer (CT) secondary current and bus-bar voltage. Following the changes of this impedance, the algorithm is able to detect a CT saturation. Due to its short data window, the algorithm is particularly adequate for fast tripping bus-bar differential relays.

Index Terms- Bus-bar protection, CT saturation detection, source impedance measurement

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