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A NEW EXPRESSION FOR IMAGINARY POWER VARIATIONS OF SMALL SIZE INDUCTION MOTOR DRIVES

BY

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Abstract. Voltage source inverters (**VSI**) are often used for drives with induction motors (**IM**). A proper calculation of electric reactive power pulsations based on consideration of variations for nonlinear multiplication, different from the known expression of pulsations based on stator voltage and current variations respectively, is proposed. By considering voltage and frequency variation for the smallest volt per hertz ratio for a given speed reference, these variations determine magnetic flux oscillation that for small power IMs can cause instability. Experimental measurements at start with no load obtained with a real time digital oscilloscope will be presented.

Keywords: real time variations, incremental encoders.