Locus Diagrams of Net Magnetic Field Vector of Dual Winding Induction Motor

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***Abstract*— The rotating magnetic field is the major concept of induction and synchronous machines. For a three phase induction motor, locus of net magnetic field of single winding stator is a circle which radius is equal to 3/2 times of one phase's magnetic field peak value. This paper introduces the locus diagram the net magnetic field of Dual Winding Induction Motor (DWIM). One of the stator winding is fed from a different frequency while the other one is fed with nominal frequencies. Hence the different rotating magnetic field speeds (synchronous speeds) are obtained by individual windings. Locus diagrams are obtained with different frequencies. This diagrams obtained for different frequencies are same as petaled flower that is a famous mathematical curve in polar coordinates. The total rotating magnetic field variations obtained in this way will affect the torque values obtained at the motor shaft.**

***Keywords*—induction motor; rotating magnetic field; dual stator winding; net magnetic field; locus diagram**

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