International J. of Engg. Research & Indu. Appls. (IJERIA). ISSN 0974-1518, Vol.2, No.II (2009), pp 97-103

FINITE ELEMENT MODEL TO EXAMINE THE PERFORMANCE OF LINEAR INDUCTION MOTOR UNDER CONSTANT VOLTAGE FEEDING

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Abstract

The aim of this work is to present a finite element model for a Linear Induction Motor, which allows us to estimate its efficiency and power factor considering the winding space harmonics. This work is followed the strategy of research among rotary machines with Time Harmonic Finite Element (THFE) analysis of IMs with nonlinear materials. The THEF analysis of Induction Motors with non-linear materials is very attractive for modeling motional eddy currents. It is generally used when the magnetic field in the air-gap is considered as a rotating wave. [3] The base of all the studies was the three phase asymmetrical Induction Motor. This is justified by the inbuilt asymmetry characteristics of LIM that comes from building aspects. The electromagnetic analysis of LIM through Finite Element Analysis has been done to estimate the Efficiency of the Linear Induction Motor.

Keywords:-Finite-Element Method, Linear Induction Motor, Space harmonics, Time Harmonic Finite Element.