

**SOFTWARE FOR 6/4 SRM:
Flux Linkage Vs Current Computation and Interpolation**

This thesis is presented in partial fulfillment for the award of the

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ABSTRACT

This project involves developing a computer package to plot the graph of flux linkage versus current based on Modified Assume Flux Path's (AFP) technique. It focused on a single tooth 6/4 three phases Switch Reluctance Motor (SRM) and concentrates on the characteristics of the aligned and unaligned flux linkage versus current curve. These characteristics then are used as an input to interpolate the flux linkage versus current for different rotor angle by using Cosine Interpolation method.

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CHAPTER 1

1.0 INTRODUCTION

Switched reluctance machines (SRM) are perhaps the simplest of electrical machines. SRM can be categorized into 2 types i.e single salient and double salient. SRMs consist of a stator with excitation windings and a magnetic rotor with saliency. Rotor conductors are not required because torque is produced by the tendency of the rotor to align with the stator produced flux wave in such a fashion as to minimize the stator flux linkage that results from a given applied stator current. Although they are simple in construction they are somewhat complicated to control. It is only relatively recently that the widespread availability and low cost of micro and power electronics have brought the cost of the sensing and control required to successfully operate SRM drive systems down to a level where this system can be competitive with systems based on dc and induction motor technologies.

1.1 SRM principles operation.

Figure 2 shows the cross-sectional view of single tooth per pole type of SRM with six salient poles on the stator and four poles on the rotor, hence referred to as 6/4 three