FUZZY POSITION CONTROL

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ABSTRACT

The purpose of this project is to implement a control system using fuzzy logic controller which controls the position of the output shaft in the DC servomotor.The controller was designed based on the FuzzyTECH software. By applying fuzzy algorithms for single input and single output (SISO) problem in a DC servomotor, this project will investigates the possibility of faster and more accurate response compared with Proportional plus Derivative *(PD)* controller.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Fuzzy logic has rapidly become one of the most successful of today's technology for developing sophisticated control system. With its aid, complex requirements may be implemented in amazingly simple and easy to maintain. The same fuzzy technology, in the form of approximate reasoning, is also resurfacing in information technology where it provides desicion-support and expert system with powerful reasoning capabilities bound by a minimum of rules.

In a similar of that, fuzzy logic control *(FLC)* had been introduced which enables for non-control-specialist to design control system. The explanation is that a fuzzy controller works with verbal rules rather than mathematical relationships. Rule base control schemes have been developed since the 1970's within the field called "expert control", "rule based control" or "knowledge based control" [1]. Fuzzy control is a branch of this field. Nowadays fuzzy controller are used more and more in industry for controlling robots, machinery, various electrical system and other several applications.

1.2 The fundamental of control

Control ideas are part of our everyday lives. The progression of human existence from a primitive state to the present complex technological world was paced by learning new and improved methods to control the environment. Simply stated, the word control means method to force parameters in environment to have specific values. This can be simple as maintaining the room temperature at 21° C or as complex as guiding a spacecraft to the moon.