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Abstract

A fuzzy logic based controller (FLC) has been developed to perform the function of the a power system stabilizer (PSS), in order to maintain the generator output voltage to 120 volts and frequency to 60 hertz by using the Frequency and AC voltages as the controller inputs variables to fuzzy inference system which created through the Matlab .

The complete range for the variation of each of the two controller inputs is represented by system rule base consist of (3x3) decision table 9 rules .the FLC design steps and a procedure for tuning its parameters are described Simulation studies for a variety of disturbances on the power system with the FLC based power system stabilizer demonstrate its effectiveness in improving system performance and the ability of the design to control the system to eliminate any non linearity resulting satisfied outputs .

مستخلص

تم تطوير متحكم المنطق الغامض لايجاد دالة مثبت ومنظم نظام الطاقه

وذلك من اجل تثبيت الجهد وحفظه عند 120 فولت والتردد عند 60 هيرتز لمخرج المولد

,وذلك باستخدام الجهد المتردد و التردد كمدخلات متغيرة القيمه.تم ادخالها لنظام المعالجه

الغامض والذى تم انشاءه باسخدام برنامج (ماتلاب),بحيث ان المدى المتكامل للتغيرفى كل

مدخله توضحه قاعده قرار النظام التى تتكون من (3*3) تسعه قرارات.

كما ان خطوات تصميم المسيطر المنطقى الغامض و اجراءات مؤالفة وضبط المتغيرات تم توضيحها.

دراسات محاكاة النظام فى التنوع فى الاضطرابات التى تحدث فى نظام الطاقة باستخدام

المسيطر المنطقى الغامض ذات اثر واضح فى تحسين اداء النظام ومقدرة التصميم للسيطره

على النظام وازالة اى عدم خطيه مفرز نتائج ومخرجات مقنعه.

Contents

DEDICATION

To the ones whom I care much about to my parents.

To the ones who supported me and gave me pleasure ,my brother, sisters and my Son Mohammed .

To the ones who are indeed friends.