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Determine the effective thermal comfort in a car by using fuzzy controller / Nur Muhd Firdaus Aminullah Ibrahim.

Lihat sebelah

DETERMINE THE EFFECTIVE THERMAL COMFORT IN A CAR BY USING FUZZY CONTROLLER

by

Nur Muhd Firdaus Aminullah Bin Ibrahim

This Final Year Project submitted in partial of fulfillment of
the requirements of the award of the degree for
Bachelor of Science (Computational Mathematics)

DEPARTMENT OF MATHEMATICS
FACULTY OF SCIENCE AND TECHNOLOGY
UNIVERSITY MALAYSIA TERENGGANU
2009

DEPARTMENT OF MATHEMATIC
FACULTY OF SCIENCE AND TECHNOLOGY
UNIVERSITY MALAYSIA TERENGGANU

VERIFICATION FORM

By this form, avowed and authorized that Final Year Project with title Determine The Effective Thermal Comfort In A Car By Using Fuzzy Controller oleh Nur Muhd Firdaus Aminullah bin Ibrahim, Matrix Number: UK 14041 have been checking and all suggestion correction already done. This Final Year Project submitted in partial of fulfillment of the requirements of the award of the degree for Bachelor of Science (Computational Mathematics), Faculty of Science and Technology, UMT.

Satificated by:

.....

Supervisor Name: DR. MOHD LAZIM BIN ABDULLAH
Official Stamp: Pensyarah
Jabatan Matematik
Fakulti Sains dan Teknologi
Universiti Malaysia Terengganu
21030 Kuala Terengganu.

Date: 5/5/2009

.....

Head of Department
Name:
Official Stamp:

DR. HJ. MUSTAFA BIN MAMAT
Ketua
Jabatan Matematik
Fakulti Sains dan Teknologi
Universiti Malaysia Terengganu
21030 Kuala Terengganu

Date: 5/5/2009

DECLARATION

I hereby declare that this Final Year Project entitled Determine The Effective Thermal Comfort In A Car By Using Fuzzy Controller is the result of my own research except as cited in the references.

Signature : 

Name : NUR MUHD FIRDAUS AMINULLAH IBRAHIM

Matrix No. : UK 14041

Date : 5 May 2009

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DETERMINE THE EFFECTIVE THERMAL COMFORT IN A CAR BY USING FUZZY CONTROLLER

ABSTRAK

Providing thermal comfort and saving energy are two main goals of heating, ventilation and air conditioning (HVAC) systems. Thermal comfort influenced by many variables such as; temperature, relative humidity, air velocity, environment radiation, activity level and cloths insulation. Reason of this, a controller with temperature feedback cannot best achieve the thermal comfort. A car compartment thermal comfort model has been developed to aid the automotive engineers in the evaluation and selection of vehicle design parameters to optimize human comfort. This model has as a unique feature the calculation of the thermal comfort of each vehicle occupant as a function of the prevailing local passenger compartment conditions of air temperature, mean radiant temperature, air velocity, air relative humidity, direct solar flux as well as the level of activity and clothing type of each individual.

MENENTUKAN KAEDAH KAWALAN HABA YANG PALING EFFEKTIF DALAM KERETA DENGAN MENGGUNAKAN FUZZY KAWALAN

ABSTRAK

Menyediakan haba persekitaran yang selesa dan penjimatan tenaga adalah merupakan dua sasaran utama Sistem Pemanasan, Peredaran Angin and Penyaman Udara (HVAC). Haba persekitaran yang selesa dipengaruhi oleh banyak faktor antaranya; suhu, kelembapan udara, kelajuan udara, radiasi persekitaran, peringkat aktiviti dan jenis pakaian dan cara berpakaian. Semua ini disebabkan satu kaedah kawalan dengan maklum balas suhu yang menjadi kunci pencapaian bagi persekitaraan yang selesa. Sesebuah kereta dengan kelengkapan model kawalan haba yang telah dibangunkan bersama kejuruteraan automotif dalam menghasilkan parameter untuk mengoptimumkan keselesaan pengguna. Model ini juga mempunyai unsur pengiraan yang unik bagi setiap model kenderaan dalam berfungsi memberi keselesaan kepada pemandu terutamanya. Ini kerana model ini mengambil kira perubahan suhu persekitaran, purata suhu radian, kelajuan udara, kadar kelembapan udara, kadar sinaran terus matahari di samping faktor individu seperti tahap aktiviti yang dilakukan dan jenis serta cara berpakaian.