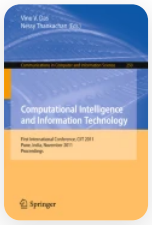
Design of a Feedback Compensator for Electric Vehicle Based on Indian Road Conditions

| Conference paper

| pp 741–743 | Cite this conference paper



Computational Intelligence and Information Technology

(CIIT 2011)

Poorani Shivkumar

Part of the book series: Communications in Computer and Information Science ((CCIS,volume 250))

Included in the following conference series: International Conference on Computational Intelligence and Information Technology

Abstract

A Novel approach of designing a feedback compensator for the Electric Vehicle Drive based on Indian Road conditions is dealt here. The performance analysis of PI controller as well as compensator design for the developed transfer function has been done.

Similar content being viewed by others

Effect of Road Profile on Normal Force Generated on Electric Vehicle

Chapter | © 2020

Nonlinear Model Predictive Control for Path Tracking in High-Speed Corner Entry...

Article | 03 October 2022

Robust Vehicle Speed Control Using Disturbance Observer in Hybrid Electric Vehicles

Article | 01 July 2020

References

1. Chan, C.C.: An overview of electric vehicle Technology. Proceedings of IEEE 81(9), 1202–1213 (1993)

Article Google Scholar

2. Ho, W.K., Hang, C.C., Zhou, J.H.: Performance and gain and phase margins of well known PI tuning formulas. IEEE Transactions on Control Systems Technology 3(2), 245–248 (1995)

Article Google Scholar

3. Nandam, P.K., Sen, P.C.: Analog and Digital speed control of DC Drives using proportional-integral and integral-proportional control techniques. IEEE Transactions on Industrial Electronics, IE 34(2), 227–233 (1997)

Google Scholar

4. Gillespie, T. D.: Fundamentals of Vehicle Dynamics. Society of Automotive Engineers Group (1999)

Google Scholar

5. Poorani, S., UdayaKumar, K., Renganarayanan, S.: Design of a fuzzy based controller for Electric Vehicles on Indian roads. Proceedings of the Institution of Mechanical Engineers, Part I, Journal of Systems and Control Engineering 221(1), 61–74 (2007)

Article Google Scholar

6. Dorf, R.C., Bishop, R.H.: Modern Control Systems, 8th edn. Addison-Wesley (1998)

Google Scholar

7. Sciarretta, A., Back, M., Guzzella, L.: Optimal control of parallel hybrid electric vehicles. IEEE Trans. on Control Systems Technology 12(3), 352–363 (2004)

Article Google Scholar

8. Serrao, L., Hubert, C., Rizzoni, G.: Dynamic modeling of heavy duty hybrid electric Vehicles. In: Proceedings of the 2007 ASME International Mechanical Engineering Congress and Exposition (2007)

Google Scholar

9. Bertsekas, D.: Dynamic Programming and Optimal Control. Athena Scientific, Belmont (1995)

Author information

Authors and Affiliations

EEE Department, Sona college of Technology, Salem, India
Poorani Shivkumar

Editor information

Editors and Affiliations

The IDES, Ouderkerk aan de Amstel, Amsterdam, 1191 GT, Netherlands
Vinu V Das

College of Engineering, Trivandrum, Kerala, India
Nessy Thankachan

Rights and permissions

Copyright information

About this paper

Cite this paper

Shivkumar, P. (2011). Design of a Feedback Compensator for Electric Vehicle Based on Indian Road Conditions. In: Das, V.V., Thankachan, N. (eds) Computational Intelligence and Information Technology. CIIT 2011. Communications in Computer and Information Science, vol 250. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-642-25734-6_129

.RIS .ENW .BIB

DOI
https://doi.org/10.1007/978-3-642-25734-6_129

Publisher Name
Springer, Berlin, Heidelberg

Print ISBN
978-3-642-25733-9

Online ISBN
978-3-642-25734-6

eBook Packages
Computer Science
Computer Science (R0)

Publish with us

Policies and ethics