Title:	Modeling, simulation and control of single actuator magnetic levitation system
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Keywords:	Magnetic levitation Electromagnets Magnetic levitation Mathematical model Magnetomechanical effects
Issue Date:	2014
Publisher:	IEEE Computer Society
Citation:	2014 Recent Advances in Engineering and Computational Sciences, RAECS 2014
Abstract:	This paper aims at Design, Fabrication and Control of a single actuator magnetic levitation system. A physical design model of Magnetic Levitation System have been presented at the initial phase. Modeling and Simulation of this non-linear magnetic levitation system is proposed with feedback linearization where a non linear state space transformation is used to linearize the system exactly. After this, experimental setup and construction of actual magnetic levitation system is presented. Experimental Levitation data is collected and compared to the theory. Magnetic levitation system considered in this study is taken as a neodymium magnet suspended in a voltage controlled magnetic field. Dynamic behavior of the system was modeled by the study of electromagnetic and mechanical subsystems. State space model was derived from the system equations. For high accuracy in position detection, Hall effect sensor SS49E was utilized. The successful operation of this system was obtained using relatively cheaper and simpler magnetic levitation subsystems and components.
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