



Position Control of Ultrasonic Linear Motor

By Don Isarakorn

LAP Lambert Academic Publishing Dez 2011, 2011. Taschenbuch. Book Condition: Neu. 220x150x6 mm. This item is printed on demand - Print on Demand Neuware - An ultrasonic linear motor has many excellent performances such as high precision, quick response, hard break with no backlash, high power to weight ratio and negligible EMI. A variety of ultrasonic linear motors have been developed and used as an actuator in motion control systems. In recent years, a number of control schemes have been proposed to control the position of ultrasonic linear motors, such as fuzzy reasoning control, neural network and adaptive control. However, these control schemes are complex and hard to apply to actual implementation. Hence, this book presents two-degree-of-freedom position control schemes for ultrasonic linear motor using pseudo-derivative control with feedforward gains (PDF) controller and I-PD controller incorporating with an input shaper, both designed by the coefficient diagram method (CDM), which is an efficient and simple method to design the parameters of controllers. The effectiveness of the proposed control schemes is demonstrated by the several simulations and experiments. 96 pp. Englisch.



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