Das, Sarit K.; Paul, Kaustav K.
Robust compensation of a Cart-inverted pendulum system using a periodic controller: experimental results. (English) [Zbl 1228.93095]
Automatica 47, No. 11, 2543-2547 (2011).

Summary: Based on [S. K. Das and J. Dey, “Periodic compensation of continuous-time plants”, IEEE Transactions. Atom. Control AC-52, 598–904 (2007)], this paper designs and implements a periodic controller to achieve, via zero-placement, robustness of a physical Cart-inverted pendulum system with respect to differential gain variations in the output sensors. Experimental results that verify the superiority of this controller over Linear Time-Invariant (LTI) ones are also presented.

MSC:
93D15 Stabilization of systems by feedback
70Q05 Control of mechanical systems
93B35 Sensitivity (robustness)

Keywords:
periodic controller; zero placement; Cart-pendulum system

Full Text: DOI

References:

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