Passivity based control for tip position regulation of a flexible link

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ABSTRACT

A passivity based control for the regulation of the tip position of a flexible link is proposed. By using a model obtained from a finite element decomposition, we first show that, for an adequuate selection of the output variable, it is possible to render a linear approximation of the model feedback equivalent to a passive system via static state feedback. We then propose a robustly performant simple output feedback controller to regulate the reflected tip position.