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(54) Title: DYNAMIC SYSTEM CONTROL METHOD

(57) Abstract

Techniques are provided herein for reducing vibrations in various modes of a dynamic system. One such technique comprises incorporating vibration limiting and sensitivity constraints into a partial fraction expansion equation model of the system so as to reduce vibrations to specific levels. Another technique comprises shaping a command determined using the partial fraction expansion equation model to produce a desired output. The entire command may be shaped or only selected portions thereof which produce vibrations. Another technique involves commanding in current to produce saturation in voltage. By doing this, it is possible to command voltage switches. The times at which the switches occur can be set to reduce system vibrations. Other techniques are also provided. These include varying transient portions at the beginning, middle and/or end of a move and using Posicast inputs, among others.

