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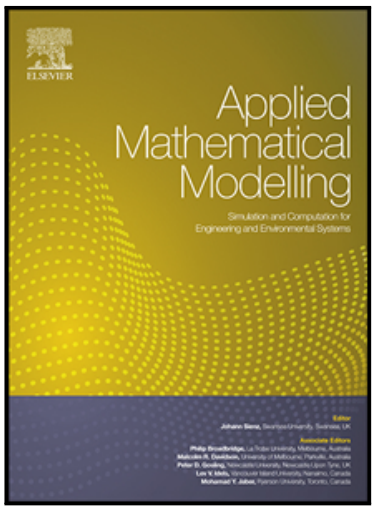

Terminal sliding mode control with non-symmetric input saturation for vibration suppression of electrostatically actuated nanobeams in the presence of Casimir force

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Highlights

- The Nonlinear ordinary differential equation is derived for an electrostatically actuated functionally graded nanobeam.
- A robust sliding mode controller is designed for the uncertain nanobeam.
- A disturbance-observer-based terminal sliding mode control is presented to suppress the nonlinear vibration of the nanobeam.
- Stability of the closed-loop system is proved in the presence of unknown disturbance and non-symmetric input saturation.

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