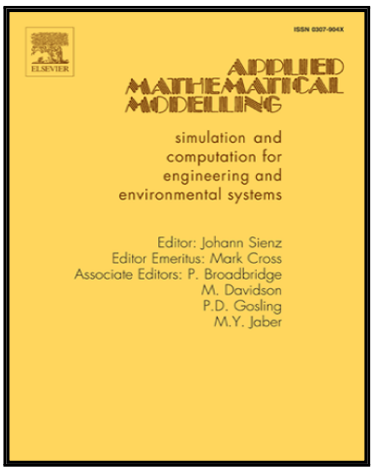

Boundary exponential stabilization of non-classical micro/nano beams subjected to nonlinear distributed forces

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Highlights

- Vibration suppression of cantilever beams used in AFMs and M/NEMS devices is studied
- The electrostatically actuated beam is subjected to Casimir and van der Waals forces
- Boundary feedback control law is adopted to exponentially stabilize a nonlinear PDE
- The strain gradient beam model is truncated using a nonlinear finite element method
- The controller increases pull-in voltage and extends the travel range of the actuator