



Euler-Bernoulli beam with tip mass and passivity-based control

By Maja Miletic

AV Akademikerverlag Nov 2015, 2015. Taschenbuch. Book Condition: Neu. 220x150x10 mm. This item is printed on demand - Print on Demand Neuware - In this work, time evolution of a cantilever with a tip body is considered. The cantilever is modeled by the Euler-Bernoulli beam equation. A passivity based dynamic feedback controller is applied at the free end to include damping. The main question considered in this work is the long-term behavior of such controlled systems, in particular the asymptotic stability. To perform the stability analysis, the system is posed as an evolution problem. Identifying an appropriate Lyapunov functional proves to be fundamental for the analysis. Demonstrating the precompactness of system trajectories, the asymptotic stability follows from La Salle's invariance principle. However, when the control law includes nonlinearities, the proof for the precompactness of the system trajectories is difficult and a novel approach needs to be developed. Another considered problem is a numerical method for the controlled Euler-Bernoulli beam system. The finite element method is utilized for the space discretization, and the Crank-Nicolson scheme for time discretization. To illustrate the effectiveness and dissipativity of the developed numerical method, simulation results are presented. 168 pp. Englisch.



READ ONLINE
[6.89 MB]

Reviews

Definitely among the best book I have got possibly study. I am quite late in start reading this one, but better then never. Once you begin to read the book, it is extremely difficult to leave it before concluding.

-- **Olga Ledner MD**

Complete guide for publication enthusiasts. I have read and i am sure that i will going to study again once again in the future. Your way of life period will be transform once you total looking over this publication.

-- **Shayne O'Conner**

Other PDFs



On the Go with Baby A Stress Free Guide to Getting Across Town or Around the World by Ericka Lutz 2002 Paperback

Book Condition: Brand New. Book Condition: Brand New.



Joey Green's Rainy Day Magic: 1258 Fun, Simple Projects to Do with Kids Using Brand-name Products

Fair Winds Press, 2006. Paperback. Book Condition: New. Brand new books and maps available immediately from a reputable and well rated UK bookseller - not sent from the USA; despatched promptly and reliably worldwide by Royal Mail;



Learn at Home:Learn to Read at Home with Bug Club: Pink Pack Featuring Trucktown (Pack of 6 Reading Books with 4 Fiction and 2 Non-fiction)

Pearson Education Limited. Paperback. Book Condition: new. BRAND NEW, Learn at Home:Learn to Read at Home with Bug Club: Pink Pack Featuring Trucktown (Pack of 6 Reading Books with 4 Fiction and 2 Non-fiction), Catherine Baker, Alison Hawes, Jon Scieszka, Margaret Clyne,...



Six Steps to Inclusive Preschool Curriculum: A UDL-Based Framework for Children's School Success

Brookes Publishing Co. Paperback. Book Condition: new. BRAND NEW, Six Steps to Inclusive Preschool Curriculum: A UDL-Based Framework for Children's School Success, Eva M. Horn, Susan B. Palmer, Gretchen D. Butera, Joan A. Lieber, How can inclusive early educators plan and deliver...



Unplug Your Kids: A Parent's Guide to Raising Happy, Active and Well-Adjusted Children in the Digital Age

Adams Media Corporation. Paperback. Book Condition: new. BRAND NEW, Unplug Your Kids: A Parent's Guide to Raising Happy, Active and Well-Adjusted Children in the Digital Age, David Dutwin, TV. Web Surfing. IMing. Text Messaging. Video Games. iPods. Kids today are plugged into...



A Dog of Flanders: Unabridged; In Easy-to-Read Type (Dover Children's Thrift Classics)

Dover Publications, 2011. Paperback. Book Condition: New. No Jacket. New paperback book copy of A Dog of Flanders by Ouida (Marie Louise de la Ramee). Unabridged in easy to read type. Dover Children's Thrift Classic. Reprint of original edition. Green edition. Mineola...