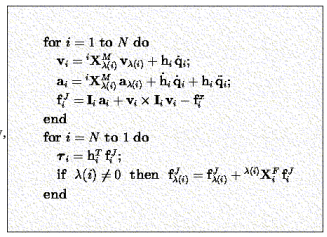
Robot Dynamics
Organizers & Chairs: Roy Featherstone, David Orin

Robot Dynamics: Equations and Algorithms
R. Featherstone[1] and D. E. Orin[2]
[1]University of Wales and [2]Ohio State University

- Reviews accomplishments in robot dynamics research
- Equations given for most important computations
- Recursive Newton-Euler, Composite-Rigid-Body, and Articulated-Body Algorithms
- Closed-loop systems & global analysis techniques discussed



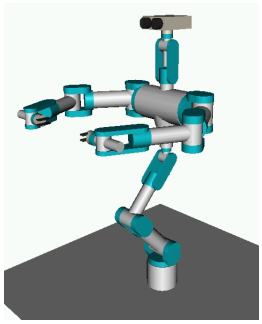
Practical Models for Practical Flexible Arms
W. J. Book[1] and K. Obergfell[2]
[1]Georgia Institute of Technology and [2]Seagate Technology

Computational Robot Dynamics Using Spatial Operators
A. Jain and G. Rodriguez
California Insitute of Technology

- Computational dynamics techniques for robotic systems
- A review of the Spatial Operator Algebra framework
- A look at standard dynamics problems, as well as novel ones, eg. diagonalized dynamics
- Open areas of research such as sensitivity analysis and optimization

Operational Space Dynamics: Efficient Algorithms for Modeling and Control of Branching Mechanisms
Kyong-Sok Chang and Oussama Khatib
Stanford University

- Branching Mechanisms
- Task/Posture Behavior Control
- Modified Spatial Notation
- Efficient Recursive O(n) Algorithms



Forward Dynamics Algorithms for Multibody Chains and Contact
D. K. Pai, U. M. Ascher and P. G. Kry
University of British Columbia

- Framework for derivation of forward dynamics algorithms.
- Formulate augmented matrix; block matrix elimination.
- Derives many algorithms: existing (ABM, CRBM) & new (contact evolution). Stability.
- Framework unifies many forward dynamics algorithms and contact evolution.