

# NISA - Dymes

A general purpose program for static, kinematic, and dynamic analyses of constrained multibody mechanical systems undergoing large, nonlinear, three-dimensional displacements. DYMES/Control has been integrated with DYMES for controlled mechanical system simulations.



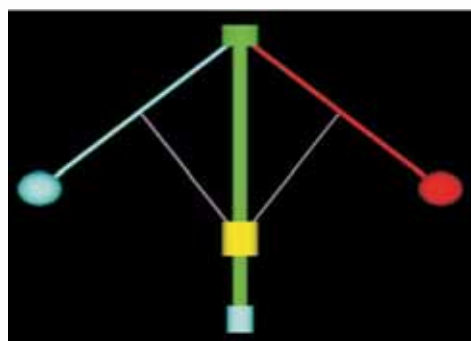
Air Plenum Door Operating Mechanism



Controlled Motion of Puma Robot

## HIGHLIGHTS

- Well organized free format input with excellent readability and flexibility for modification
- Integrated with DISPLAY III/IV for model creation and graphical results interpretation
- Enhanced graphics with animation in the post-processor for easy visualization of highly nonlinear motion of complicated mechanisms
- Sophisticated full vehicle or suspension system modeling
- Large library of standard and composite joints for modeling mechanical systems
- Many sophisticated force elements to simulate cables, springs, dampers, actuators, beams, bushings, etc.
- DYMES/Control for controlled mechanical system simulation



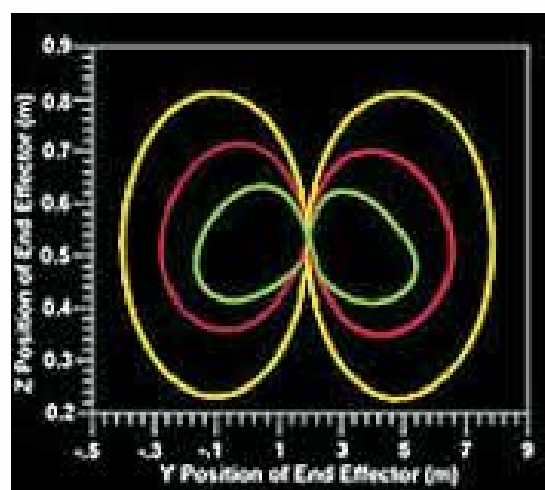
Governor Mechanism Motion Analysis

## ANALYSIS CAPABILITIES

- Assembly Analysis
- Redundancy Analysis
- Static Equilibrium Analysis
- Quasi-Static Equilibrium Analysis
- Dynamic Analysis
- Kinematic Analysis
- Inverse Dynamic Analysis

## SALIENT FEATURES IN DYMES/Control

- Single-Input Single-Output (SISO) and Multiple-Input Multiple-Output (MIMO) control system modeling
- Actuation of mechanical system according to controller commands
- Feedback of variables from mechanical system to control system
- Transfer function matrix generation
- Vector import and export of control blocks
- Accessibility of all node and state variables
- Parameter variation study
- Pure control system simulation



End Effector Trajectories with Different Gain Settings

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