Output q Matrix

INPUT

OUTPUT

DRC Sim

cancel this for now

Convert q Matrix

C++ Q Matrix

Kneeling Simulation

Our Analysis of 3D Plots

Inverse Position Kinematics

Output q Matrix

Q MATRIX

3D Plot

3D Plot w/ Sliders (update on Slider release)

End Effector Polygons

Minimum Footprint Polygon

Minimum Footprint Polygon

Plot Minimum Footprint Polygon

3D Plot

Use plot for motion planning and visual checks of CoM

Kinematics

Q STATE: Joint Angles

Position Kinematics

Transformation Matrices

Joint XYZ Positions

Joint XYZ Positions

Plot ATLAS

q

Q STATE + 1

Time Increment

Joint Angular Velocities

q_dot

Joint Angular Velocities

Link Masses

Link Lengths

Link Centers of Masses XYZ

Link Centers of Masses XYZ

CoM XYZ

CoM XYZ

Plot CoM

not sure about this arrow...

Dynamics

WE DON'T NEED JACOBIANS FOR NEWTON EULER??

r_e, r_c

r_e, r_c

w

Link Angular Velocities

Joint Angular Accelerations

Newton-Euler Dynamics Forward Recursion

Newton-Euler Dynamics Backwards Recursion

Link Forces

Link Moments

Joint Torques

Joint Torques

tao(q,q_dot,q_dot_dot)

Minimum Hydraulic Pressure

Minimum Hydraulic Pressure

Check that the pump can reach the required joint torques

a

Joint Angular Accelerations

Link Angular Accelerations

Link Inertias

q_dot_dot