Inverted Pendulum

Group 12

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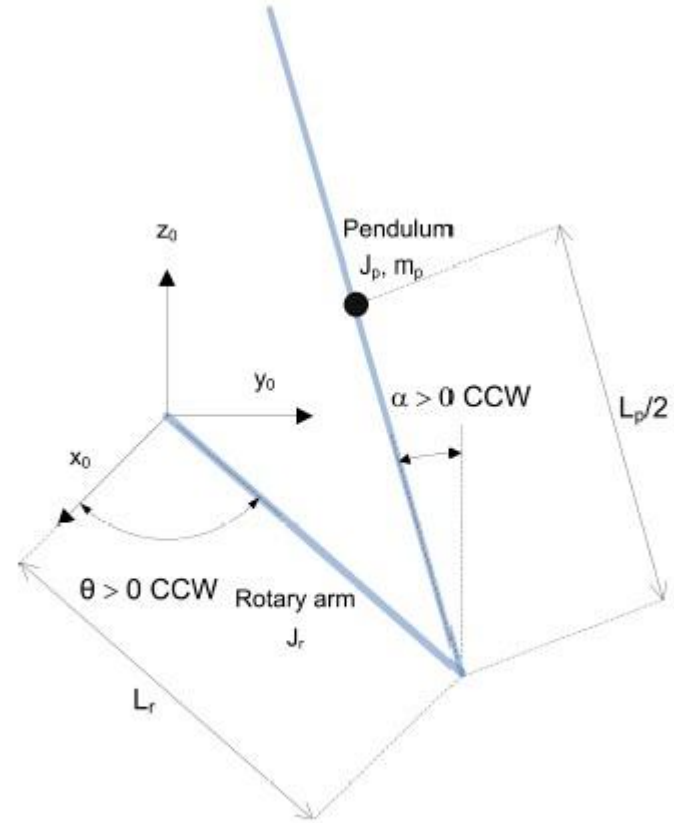
Introduction

- The Furuta Pendulum was invented by Katsuhisa Furuta and his

  colleagues in Tokyo in 1992.

- Used for teaching control theory

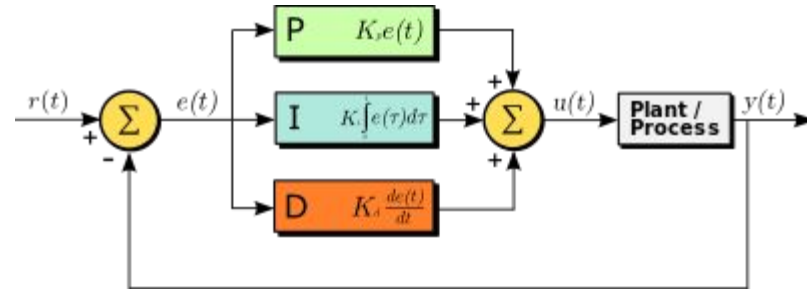- Example of non-linear oscillating system

Modeling

- Simple model of system

- Used to derive state space equations

- Modeling provides a connection between theory

  and application of concepts

- Connecting Matlab to Copelia software
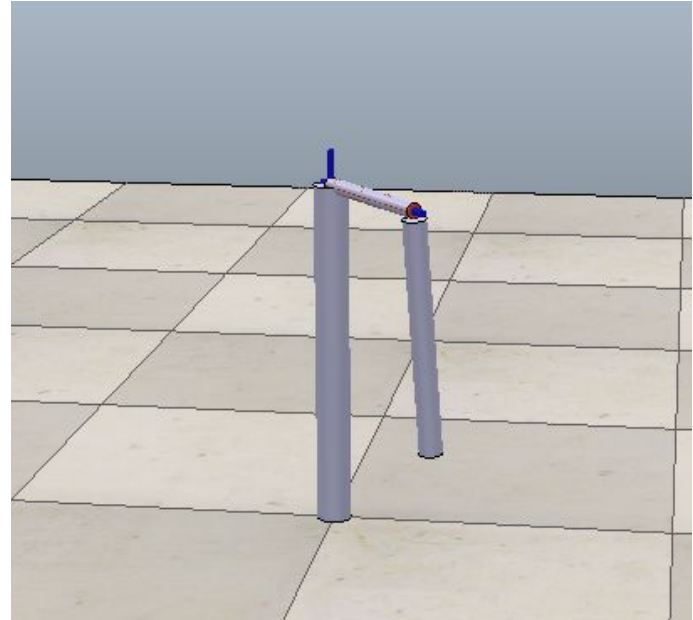
Controller Design

- Equations of motion

- Euler Lagrange equation

- Generalized forces

- Linearization

- State Space

PID Controller

Simulation

- Tool for optimization

- Confirmation of function before

  hardware purchase

- Copelia communication with other

  programs such as matlab

Conclusion

- Goal

- Method