Dynamic Model of 1R robot

With joint elasticity

**Assumption:** work on vertical plane

Studied as an actuated pendulum

Motor torques considered after reduction

**y**

**x**

Assuming joint and motor as cylinders

Kinetic energies for motor and joint

Inertia matrix

Coriolis & Centrifugal terms (why zero?)

Potential energies (gravitational and elastic)

Model