Inverted Pendulum

ANDREA POSADA CÁRDENAS[1], SANTIAGO HINCAPIE POTES[2]
[1]Mathematical Engineering Student, Universidad EAFIT, Medellin, Colombia (e-mail: aposad31@eafit.edu.co)
[2]Mathematical Engineering Student, Universidad EAFIT, Medellin, Colombia (e-mail: shinca12@eafit.edu.co)

Corresponding author: Andrea Posada Cárdenas (e-mail: aposad31@eafit.edu.co).

ABSTRACT TODO:Add abstract

INDEX TERMS TODO:Add keywords

I. INTRODUCTION

THE

A. EQUATION SYSTEM

B. NON-LINEAR STATE SPACE MODEL

1) state space variables

$$
\begin{aligned}
x_1 &= x && \text{cart position} \\
x_2 &= \dot{x} && \text{cart velocity} \\
x_3 &= \theta && \text{pendulum angle} \\
x_4 &= \dot{\theta} && \text{angular velocity} \\
u &= F && \text{input force}
\end{aligned}
$$

C. STATE SPACE EQUATION SYSTEM

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