ANTI-SWING CONTROL FOR AN OVERHEAD CRANE WITH FUZZY COMPENSATION

XIAOOU LI*, WEN YU**
* Departamento de Computación
** Departamento de Control Automático
CINVESTAV-IPN
A.P. 14-740, Av.IPN 2508, México D.F., 07360, México

ABSTRACT—This paper proposes a novel anti-swing control strategy for an overhead crane. The controller includes both position regulation and anti-swing control. Since the crane model is not exactly known, fuzzy rules are used to compensate friction, gravity as well as the coupling between position and anti-swing control. A high-gain observer is introduced to estimate the joint velocities to realize PD control. Real-time experiments are presented comparing this new stable anti-swing PID control strategy with regular crane controllers.