Yang

# Impulsive Control Theory

The concept of impulsive control and its mathematical foundation called - pulsive di? erential equations,or di?erential equations with impulse e?ects,or di?erential equations with discontinuous righthand sides have a long history. In fact, in mechanical systems impulsive phenomena had been studied for a long time under di?erent names such as: mechanical systems with impacts. The study of impulsive control systems (control systems with impulse e?ects) has also a long history that can be traced back to the beginning of modern control theory. Many impulsive control methods were successfully developed under the framework of optimal control and were occasionally called impulse control. The so called impulse control is not exactly the impulsive control as will be de? ned in this book. The reader should not mixup these two kinds of control methods though in many papers they were treated as the same. - cently, there is a tendency of integrating impulsive control into hybrid control systems. However, this e?ort does not have much help to the development of impulsive control theory because impulsive systems can only be studied by the very mathematical tool based on impulsive di?erential equations. The e?ort to invent a very general framework of hybrid control system for stu- ing impulsive control and other hybrid control problems will contribute no essential knowledge to impulsive control.

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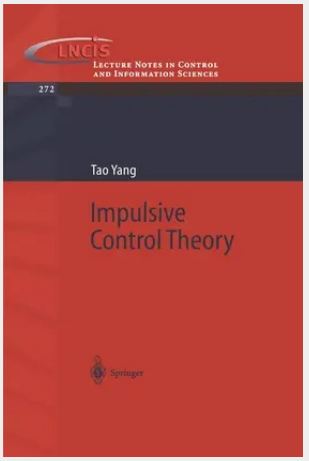


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