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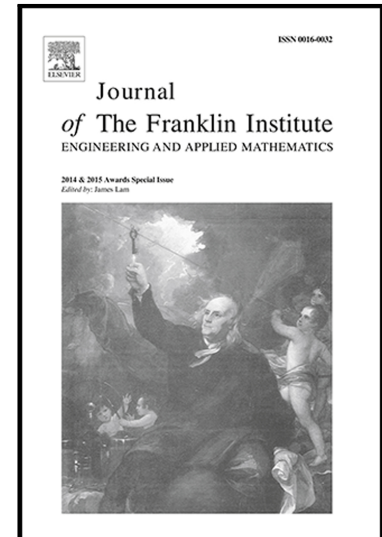
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PII: S0016-0032(17)30340-X  
DOI: [10.1016/j.jfranklin.2017.07.026](https://doi.org/10.1016/j.jfranklin.2017.07.026)  
Reference: FI 3065

To appear in: *Journal of the Franklin Institute*

Received date: 20 March 2017  
Revised date: 27 June 2017  
Accepted date: 3 July 2017

Please cite this article as: Wei Kang, Jun Cheng, Bo Wang, Ju H. Park, Habib M. Fardoun, Event-triggered reliable control for Markovian jump systems subject to nonuniform sampled data, *Journal of the Franklin Institute* (2017), doi: [10.1016/j.jfranklin.2017.07.026](https://doi.org/10.1016/j.jfranklin.2017.07.026)



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# Event-triggered reliable control for Markovian jump systems subject to nonuniform sampled data

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## Abstract

This paper investigates the problem of event-triggered reliable control for Markovian jump systems subject to nonuniform sampled data (SD). Compared with recent existing results, a new mode-dependent event-triggered mechanism (ETM) is proposed which makes full use of the information of ETM and nonuniform SD. By constructing a newly Lyapunov-Krasovskii functional and utilizing a convex optimization approach, some sufficient criteria for  $\mathcal{H}_\infty$  reliable control are deduced in an inequality form. Finally, a numerical example is given to demonstrate the effectiveness of the theoretical results.

*Keywords:* Markovian jump system; Event-triggered; Reliable control; Sample-data control.

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## 1. Introduction

During the past decades, there has been an increased interest in the development of theories and applications for Markov jump systems (MJSs). With the help of Markov chain, many dynamic processes subject to stochastic switching can be modeled by MJSs, which have been widely discussed by many researches, such as networked control systems, financial and economic science, and so on [2,4,8,43,44]. Up to now, some significant advances have been arose for MJSs in the field of stability analysis and controller synthesis, for example, stability analysis [1,40], passivity analysis [4,5,33,35],  $\mathcal{H}_\infty$  control [9,10,41], fuzzy control [3,6,7,34,36], sampled-data control [11-13], and robust control [37-39,42].

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