

# 國立交通大學應用數學系

## 學術演講公告

主講人：羅元勳教授 (屏東大學 應用數學系)

講題：Random and Deterministic Schemes for  
a Collision Channel without Feedback

時間：109 年 12 月 22 日(星期二) 下午 14:00 –15:00

地點：(光復校區) 科學一館 223 室

茶會：當天下午 13:30 (科學一館 205 室)

### Abstract

There are two main medium access control (MAC) approaches to a slot-synchronous collision channel without feedback: random (slotted ALOHA) and deterministic (protocol sequence-based) schemes. Unlike the traditional slotted ALOHA, protocol sequence-based scheme is a deterministic way to guarantee a positive individual throughput within an expectable period of time, even the time synchronous is hard to be achieved. In the first part of this talk, I will survey some results on protocol sequence-based schemes, including user-irrepressible (UI) sequences and conflict-avoiding codes (CACs), which have some interesting combinatorial structures. Then, for a fair comparison, deadline-constrained slotted ALOHA schemes will be introduced to maximize the probability that a packet can be successfully received within an pre-assigned deadline. Some recent progress including the uniqueness of the optimal transmission probability that maximizes the successful delivery probability under multiple-packet reception (MPR) technology is addressed as well.

敬請公告 歡迎參加

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