

# 數學系演講公告

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講 題：On-Line Alternating Subsequences of Maximal  
Expected Length

日 期：100 年 05 月 17 日 (星期二) 下午 2:30 – 3:20

地 點：數學系(科學館 S433 室)

摘 要：

## Abstract

Let  $X_1, X_2, \dots, X_n$  be an i.i.d. uniform random variables over the interval  $[0, 1]$ . We can observe the sequence sequentially. We want to select a sub-sequence  $k_1, k_2, \dots, k_M$  of the sequence  $1, 2, \dots, n$  with the following property that  $X_{k_i} < X_{k_{i+1}}$  if  $i$  is odd and  $X_{k_i} > X_{k_{i+1}}$  if  $i$  is even. We want to maximize the expected value of  $M$ . In this paper, we derive an algorithm to select the sub-sequence  $k_1, k_2, \dots, k_M$  and also prove that the maximal expected value of  $M$  is approximately equal to  $(2 - \sqrt{2})n$  as  $n \rightarrow \infty$ .

歡 迎 參 加

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