

# 國立中山大學應用數學系

## 學術演講

講者：Professor Weng Kee Wong  
Department of Biostatistics, UCLA

講題：Nature-Inspired Meta-heuristic Algorithms  
for Generating Optimal Experimental  
Designs

時間：2016/12/08（星期四）14:10 ~ 15:00

地點：理學院四樓理 SC 4009-1 室

茶會：15:00 於理 SC 4010 室（系辦公室）

### 摘要

Nature-inspired meta-heuristic algorithms are widely studied and used in computer science and engineering disciplines to solve high-dimensional complex optimization problems in the real world. It appears relatively few of these algorithms are used in mainstream statistics even though they are simple to implement, very flexible and frequently able to find an optimal or a nearly optimal solution quickly. These general optimization methods usually do not require any assumption on the function to be optimized and for some of these algorithms, like particle swarm optimization, the user only needs to input a few easy-to-use tuning parameters.

I will give an overview of such algorithms and demonstrate the usefulness of some of these algorithms for finding different types of optimal designs for nonlinear models.

Key words: approximate design, exact design, equivalence theorem, information matrix, multiple-objective optimal design

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