

# 中央研究院統計科學研究所

## 博士後演講

講題：Parameter Optimization in Smart Manufacturing: A Surrogate-Based Sequential Approach with Case Study

演講人：Prof. Ping-Yang Chen ( 陳秉洋 助理教授 )

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時間：2024-06-19(Wed) 14:00-15:00

地點：Auditorium, B1F, Institute of Statistical Science; The tea reception will be held at 13:40.

備註：Online live streaming through Cisco Webex will be available.

### Abstract

In the manufacturing process, tuning parameters typically relies on the expertise of experienced workers. However, rapid market changes and the production of small quantities of diverse products make it difficult to accumulate substantial experience, thereby increasing production costs and time. Therefore, efficiently lowering the cost of experiments is a key challenge. In this talk, we introduce the concept of surrogate-based modeling techniques that optimize manufacturing parameters within the framework of Design and Analysis of Computer Experiments (DACE). To demonstrate the application of the DACE approach, I will present a case study involving complex constraints on manufacturing parameters in the heavy industry, where production cycles are long and underqualified products cannot be reworked.

Key words and phrases: Efficient global optimization, Gaussian process model, Smart manufacturing.



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