



統計科學研究所

INSTITUTE OF
STATISTICAL SCIENCE



統計所學術演講



中研院統計所

學術演講

講題：Kronecker Product Approximation for Matrix
Approximation, Denoising and Completion

講者：Prof. Rong Chen (陳嶸 教授)
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時間：2022年11月14日(星期一)，10:00-11:00

地點：統計所B1演講廳

Abstract

We consider the problem of matrix approximation, denoising and completion induced by the Kronecker product decomposition. Specifically, we propose to approximate a given matrix by the sum of a few Kronecker products of smaller matrices, which we refer to as the Kronecker product approximation (KoPA). Because the Kronecker product is an extensions of the outer product from vectors to matrices, KoPA extends the low rank matrix approximation, and include the latter as a special case. Comparing with the latter, KoPA also offers a greater flexibility, since it allows the user to choose the configuration, which are the dimensions of the two matrices forming the Kronecker product. As the configuration to be used is usually unknown, an extended information criterion is used to select the configuration. The model is extended to allow for multiple terms with different configurations (hybrid-KoPA) for more efficient approximation and denoising. It is also used for matrix completion tasks, with superior theoretical and numerical properties.

※ 茶會：上午9：40開始。

※ 英文演講，實體與線上視訊同步進行。