

國立中山大學應用數學系

學術演講

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講 題：Scalable Spectral Embedding via Roseland: Applications to LAD and LA-VDM

時 間：2026/10/02 (Friday) 13:10 ~ 14:00

地 點：理 SC4009-0 教室

茶 會：12:30

Abstract

Spectral embedding methods are fundamental tools in manifold learning, but their computational cost can be too high for large-scale datasets. In this talk, I will present two landmark-based methods: Landmark Alternating Diffusion (LAD), which accelerates Alternating Diffusion for recovering common structures across multiple sensors, and Landmark Vector Diffusion Maps (LA-VDM), which extends the landmark idea to Vector Diffusion Maps for capturing directional and connection information. Both methods extend ROSELAND by replacing the full graph construction with interactions between data points and a smaller set of landmarks, providing a scalable approach to spectral embedding while preserving the intrinsic geometric information of the data. To improve robustness, both methods incorporate user-defined normalization parameters to correct sampling density and reduce sensitivity to landmark selection. The talk will cover the main algorithmic ideas, theoretical guarantees, and applications to sensor fusion and geometric data analysis.

敬 請 公 告！ 歡 迎 參 加！

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