Objective

• The project is to develop a Flight Profile Management system based on Trajectory-based Operations (TBO) that maximizes flight profile efficiency, thereby reducing environmental impact and providing more efficient operations for aircraft.

Key Findings

• A complete mathematical model for Coordinated Complexity-Aware 4D Trajectory Planning has been developed and tested using a sub-airway network around Singapore centering on the waypoint BOBAG.
• A promising robustness measure based on Laplacian Energy, is proposed to optimize the resilience of air transportation networks.
• The model and solution methods have been tested using air network route map by Jetstar Asia Airway.

Publications

• Changpeng Yang, Jianfeng Mao*, Peng Wei; “Air Traffic Network Optimization via Laplacian Energy Maximization”; “Aerospace Science and Technology”.