

1 TSP with fixed-wing drones

The optimal trajectory of a fixed-wing drone that must fly at a constant speed over a given sequence of points in 2D is made by rectilinear segments and circumference arcs of given radius.

The problem of optimizing the trajectory when the sequence is given is non-linear and convex and it can be solved with NLP solvers. It has been already addressed in a master thesis.

The problem of optimizing both the sequence and the trajectory additionally requires discrete enumeration algorithms (D.P. or branch-and-bound).

Reference: S. Biscotti, master thesis, 2022.

Suitable for a master thesis or a project for the O.R. Complements course.