Route Optimization Methods for Unmanned Air Vehicle Launched from a Carrier

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Abstract—In this paper, we propose two route optimization methods for a carrier-launched Unmanned Air Vehicle (UAV). In a real life use case, the carrier keeps on moving on its own route as the UAV executes its own mission of visiting the targets dispersed on a geographical area. Due to carrier mobility, determining the UAV take-off and land-on locations with a route which minimizes the total tour length is a crucial research question and a practical challenge. In order to resolve this problem, we have designed one solution based on the Genetic Algorithm (GA) and another one using the Nearest Neighbor (NN) heuristic. We have observed the performance of the proposed approaches on some well-known TSP problems and compared the performance of both methods.


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Manuscript received July 25, 2014. This work was supported in part by the Atılım University.

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