

6th International Conference on

Aerospace and Aerodynamics

August 02-03, 2018 | Barcelona, Spain

Optimization of bank angle and its analytical validation for unmaned air vehicles

Salahuddin, Vv.S. Dwivedi and A.K. Ghosh
Indian Institute of Technology Kanpur, INDIA

In this paper, optimization is performed for the computation of optimum bank angle for coordinated turning flight condition using sequential programming method (SQP). The optimization was carried out for two types of aircraft which categories as micro light Air vehicle(MAV) and unmanned air vehicle(UAV). Simulation results were validated analytically for both micro light air vehicle and unmanned air vehicle for the variation of bank angle with the velocity for a given turn radius. The validation was performed for fixed turn radii varying from twenty meters to hundred meters including infinite turn radius in straight and steady level flight using standard level turn methods. Throughout the analysis, the optimization results are closely following the analytical results for micro light air vehicle (MAV) as well as unmanned air vehicle (UAV).

qazisalahuddin@gmail.com

Notes: