

# EVALUATION OF DUBINS FLIGHT PATH PERFORMANCE FOR UAV NAVIGATION

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**Abstract:** The small unmanned aerial vehicles are becoming more widely used for various practical applications. Because of national and international regulations for these flights, necessity of precise and predictable flight path or trajectory is becoming more and more important. However, flight path tracking algorithms which are used nowadays are imprecise and with lots of uncertainty. Taking this into account, one of the possible methods to improve UAV flight accuracy might be to use the Dubins paths. In these work mathematical evaluations of airplanes drift from the flight path is presented and the difference between classical methods and Dubins paths flight error mathematical values are shown. In these work numerical values of flight path error were collected by using different flight methods. These methods were used to check how the drift depends on different flight path shapes and turn angle size. After the evaluation it becomes clear that the Dubins paths trajectory becomes more predictable near the turns and flight path error is less.

**Keywords:** navigation algorithm, small unmanned aerial vehicle, flight path error, Dubins paths, mathematical evaluation.