

Unmanned Aerial Vehicle Landing Based on Ultra-Wideband Localization System and Optimal Strategy for Searching Optimal Landing Point

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Abstract : Unmanned aerial vehicle (UAV) landing technology is a common task that is required to be fulfilled by fly robots. In this paper, the crazyflie2.0 is located by ultra-wideband (UWB) localization system that contains 4 UWB anchors. Another UWB anchor is introduced and installed on a stationary platform. One cost function is designed to find the minimum distance between crazyflie2.0 and the anchor installed on the stationary platform. The coordinates of the anchor are unknown in advance, and the goal of the cost function is to define the location of the anchor, which can be considered as an optimal landing point. When the cost function reaches the minimum value, the corresponding coordinates of the UWB anchor fixed on the stationary platform can be calculated and defined as the landing point. The simulation shows the effectiveness of the method in this paper.

Keywords : UAV landing, UWB localization system, UWB anchor, cost function, stationary platform

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