

Characterization and Control Dynamics of an Unmanned Flexed Winged Micro Air Vehicle

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Abstract

The use of micro air vehicles during operations in combat environments provides challenges in control during flight. The flexible and morphing wings designed with these aircrafts allow for efficient deployment, durability and storability. These vehicles are small, lightweight, and have the need to be easily and quickly controlled by a soldier in the field. This paper attempts to study and characterize control dynamics, and initial design of a controller capable of obtaining better handling characteristics of an unmanned flexed winged micro air vehicle so that it is easily operated by a pilot on the ground with limited view of the aircraft. The control system will have limited control, but will meet the needs for stable flight and simple pilot handling qualities.

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