

## عنوان مقاله:

In-Trim Flight Investigations of a Conceptual Fluidic Thrust-Vectored Unmanned Tail-Sitter Aircraft

## محل انتشار:

مجله علوم و مهندسی هوافضا، دوره 3، شماره 3 (سال: 1385)

تعداد صفحات اصل مقاله: 9

## نویسنده:

fariborz saghafi - sharif

## خلاصه مقاله:

The feasibility of using a stand alone Fluidic Thrust-Vectoring (FTV) system for the purpose of longitudinal trim of an unmanned aerial vehicle is the focus of the research presented in this paper. Since the fluidic thrust vectoring requires high pressure secondary air to deflect the engine exhaust gases, this research also provides an analytical toolset for preliminary sizing of a suitable secondary air supply. The study is based on a conceptual model of a VTOL tail-sitter type unmanned aerial vehicle in three common phases of flight named as Hovering, Transition and Cruise. A relationship is finally presented between the thrust-vectoring angle and the required secondary mass flow rate. It is found that the aircraft trim is possible only by using fluidic thrust-vectoring. In addition, the mathematical model developed in this study can be used as a preliminary tool for overall performance evaluation of such a conceptual aircraft, especially for sensitivity analysis of thrust-vectoring control and finding the optimum values of the parameters like centre of gravity and engine location.

## کلمات کلیدی:

Fluidic Thrust Vectoring (FTV), VTOL UAV, Tail-sitter Aircraft, Transition Flight

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1792754>

