

DESIGN AND ANALYSIS OF FLEXVATOR

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ABSTRACT

We proposed this topic because the economy and weight of the aircraft is the major challenge in the aviation industry. This idea of flexvator can reduce the weight of the aircraft and can increase aircraft efficiency, so keeping all these parameters in mind we are considering this to be major part of our project. If we consider the aircraft elevator we have many control surfaces, if we consider control surfaces there are a lot of parameters involved in the operation of the control surfaces.

As a solution for this, we are undergoing design and analysis on a new concept called flexvator. This idea of flexvator can be applicable to the wing rudder and elevators, for simplified study of this idea on the elevators of the aircraft. Which are used for the pitching movement of the airplane? By applying this concept on the elevators or wings, we will be getting reduced weight, increased speed, can and help us to carry more fuel long range cruise. The economy and weight of the aircraft is the major challenge in aviation industry. This idea of flexvator can reduce the weight of the aircraft and can increase aircraft efficiency, so keeping all these parameter in mind we are considering this to be major part of our project.

We are proposing this idea because in the present scenario the wings of aircraft carry heavy weight for control surface like flaps, and ailerons can help us to reduce the maximum percentage of weight on the wings. Elevators and rudder this idea of flexibility was introduced in the conceptual car of BMW. By taking that to implement it on consideration we are planned to implement it on aircraft wings to gain more efficiency, speed, and controllability by reducing additional loads like hinges, extra rods and balancing lead rods on the wings.

KEYWORDS: *Flexvator*