

## ***ABSTRACT***

*One of the limitations in the design of the helicopter blade structure is the appearance of aeroelastic phenomena. One of the aeroelastic phenomena is the emergence of flutter where it will restrict the cruising speed of a blade design and will be catastrophic. In this research, looking for stability analysis of flutter speed by using the time domain. Mode shapes obtained by analyzing the structure of the dynamics of the structure so that a mode shape for the heaving and pitching. The quantity of steady-state aerodynamic forces was calculated using Theodorsen formulation then transformed into roger approach to transform from frequency domain to time domain. then the coefficients of roger approach is used to find the eigenvalues of which will determine the condition when the flutter and generate  $V-f$  and  $V-g$  graphs and flutter speed of the blade so that the helicopter can be known.*

*Keywords: aeroelastic, flutter, catastrophic, structural dynamics*