

عنوان مقاله:

Helicopter Blade Stability Analysis Using Aeroelastic Frequency Response Functions

محل انتشار:

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خلاصه مقاله:

In the present paper, the aeroelastic stability of helicopter rotor blade is determined using Aeroelastic Frequency Response Function. The conventional methods of eroelastic stability usually use an iterative procedure while the present method does not require such approach. Aeroelastic Frequency Response Functions are obtained by inverting dynamic stiffness matrix of the aeroelastic system. Exciting each degree of freedom, system response could be obtained. The resulted response is then plotted and the behavior of this function is investigated to find out the stability criteria and system natural frequencies. The results of this method are compared with stability boundaries obtained from the conventional p-k method and it can be inferred that the present algorithm is of less numerical cost comparison to others.

کلمات کلیدی:

Aeroelastic Frequency Response Function, Helicopter blade, Loewy unsteady aerodynamic theory

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