



航空学报 » 1990, Vol. 11 » Issue (3) :188-193 DOI:

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直升机“地面共振”力学模型的探讨

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A STUDY ON MECHANICAL MODEL OF THE HELICOPTER "GROUND RESONANCE"

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摘要

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Abstract: The key problem for the calculation and optimization design of the helicopter "Ground Resonance" is to correctly build up a mechanical model. In the past the literature only concerned with the lag modes of the rotor blade and the flap modes were neglected. But such approaches should be reconsidered now. In order to study the influences of rotating multiblades rotor on the degrees of freedom but also the Hap "Ground Resonance of a helicopter it is necessary to consider not only the lag degrees of freedom but also the flap degrees of freedom. Using Lagrangian equation a dynamical equation of the space model for helicopter Ground Resonance" was deduced for the first time. Some computation results show that the mechanical model including both lag DOF and flap DOF are more reasonable.

Keywords: hlicopter Ground Resonance dynamical instability

Received 1988-12-29; published 1990-03-25

引用本文:

顾仲权. 直升机“地面共振”力学模型的探讨[J]. 航空学报, 1990, 11(3): 188-193.

Gu Zhongquan. A STUDY ON MECHANICAL MODEL OF THE HELICOPTER "GROUND RESONANCE"[J]. Acta Aeronautica et Astronautica Sinica, 1990, 11(3): 188-193.

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