

عنوان مقاله:

Effect of Damping Tube to Reduction of Gas Turbine Blade Vibration

محل انتشار:

همایش یافته های نوین در هوافضا و علوم وابسته (سال: 1394)

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خلاصه مقاله:

High vibrations of turbine blades can produce dynamic stresses more than permitted limit, which may causes fatigue in high rotational velocity. Blade vibration reduction is an important task in gas turbine blades in order to avoid the risk of blade failure due to the overcoming of fatigue limit. In this paper, the effects of damping tube on vibration behavior of first stage rotor blades in a power turbine at working condition such as rotational velocity and gas pressure had been examined. In first step, after modeling the blades using cloud points technology and para solid model of the blade, which was transferred to ANSYS software finite element for extracting natural frequencies, mode shapes of single blade and 6 blades groups which through damping tube are connected to each other. By analyzing mode shapes, it can be deduced that damping tube considerably improves resonance frequencies of the blades in a way .that does not wrap in gas turbine working range

کلمات کلیدی:

Gas turbine blade; Natural frequency; Vibration analysis; Campbell diagram

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