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Contribution to the minimization of vibration ofrotating machines

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Abstract : Rotating machines are used in areas as diverse as transport (trainsmotorized vehicles, etc.) Production industry, or appliances. Thevibrations from them may êtregênantes; they are the source of somenoise radiated by this machine and are therefore undesirable forusers, they can be transmitted to neighboring structures andaccelerate deterioration or aging, can also damage the rotatingmachines-they mêmes.il is therefore of interest to develop methodsto reduce the vibration level of the machines, as well as that of theirenvironment direct.Ces optimization methods (minimization) canminimize the natural vibrations using against vibration generatedby actuators requiring external power. The objective of this work isto develop a method of minimizing vibrations of a rotating machine,which aims to reduce the vibrational level of an area of its outercasing. This field can then be used for attachment of this machineand so help to minimize the amount of vibration it transmits to itsdirect environment. A new method also converge to the globaloptimum (minimum vibration value), and take into account possiblevariations of vibrational disturbances to eliminate. It allows asignificant reduction of vibrations, without changing thecharacteristics of the system.

Keywords : Rotating machines, vibration sensors, optimization.