Study of Ball Bearing by the Application of Adaptive Noise Cancellation Technique

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ABSTRACT

Ball bearings are the most important elements in the machine system that used to support the rotating spindle and to carry the load. The conditions of bearings not only influence the working properties of machine but also affect the safety of the system. The vibration of incipient failure of bearings will be masked by the background vibration signal of machine system in the process of measurements. So the results of measurements can not detect the incipient failure of bearings directly under low signal-to-noise density ratio (SNR) condition. The objective of this study is to set up the adaptive noise cancellation (ANC) method that can treat the vibration signal of low signal-to-noise density ratio (SNR). This technique can be used to monitor the state of bearings in running conditions to achieve the objective of real-time monitoring.

Keywords : Ball Bearing ; Adaptive Noise Cancellation ; Failure Monitor ; Bearing Diagnosis ; Multi-input

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