METHOD FOR EXTRACTING FEATURE OF VIBRATION SIGNAL, AND DEVICE ANALYSIS METHOD AND APPARATUS

CROSS-REFERENCE TO RELATED APPLICATION

[1] The present application claims the priority of Chinese Invention Patent Application No. 202111420251.1, entitled "METHOD FOR EXTRACTING FEATURE OF VIBRATION SIGNAL, AND DEVICE ANALYSIS METHOD AND APPARATUS", filed with the China National Intellectual Property Administration on November 24, 2021, which is incorporated in the present application by reference in its entirety.

TECHNICAL FIELD

[2] The disclosure relates to the field of device fault detection and, in particular to a method for extracting feature of a vibration signal, and a device analysis method and apparatus.

BACKGROUND

[3] With the development of industrial modernization, the application of large-scale rotating devices is more and more extensive, from steel, coal, electricity and cement to subway, airplane, train, and ship, *etc.*, rotating devices are indispensable, and the stable operation of these rotating devices is more and more important to the development of national economy.

[4] In the long-term operation of the devices, various faults will inevitably occur. If the early fault symptoms are not found in time, with its development and expansion, when it reaches a certain critical point, the device is prone to sudden and serious faults, resulting in a lot of unplanned maintenance work. These faults may cause some economic losses, and even casualties.

[5] Minor faults such as wear and degradation occur in a certain part of industrial rotating equipment during work. Due to the weak macro-characterization, it is often impossible to effectively monitor a certain part of an industrial rotating device relying solely on manual identification, and it is time-consuming and labor-intensive. A vibration signal is generated and sustained with the operation of the machine. Even if the machine is in normal operation, it will vibrate due to small excitation.