

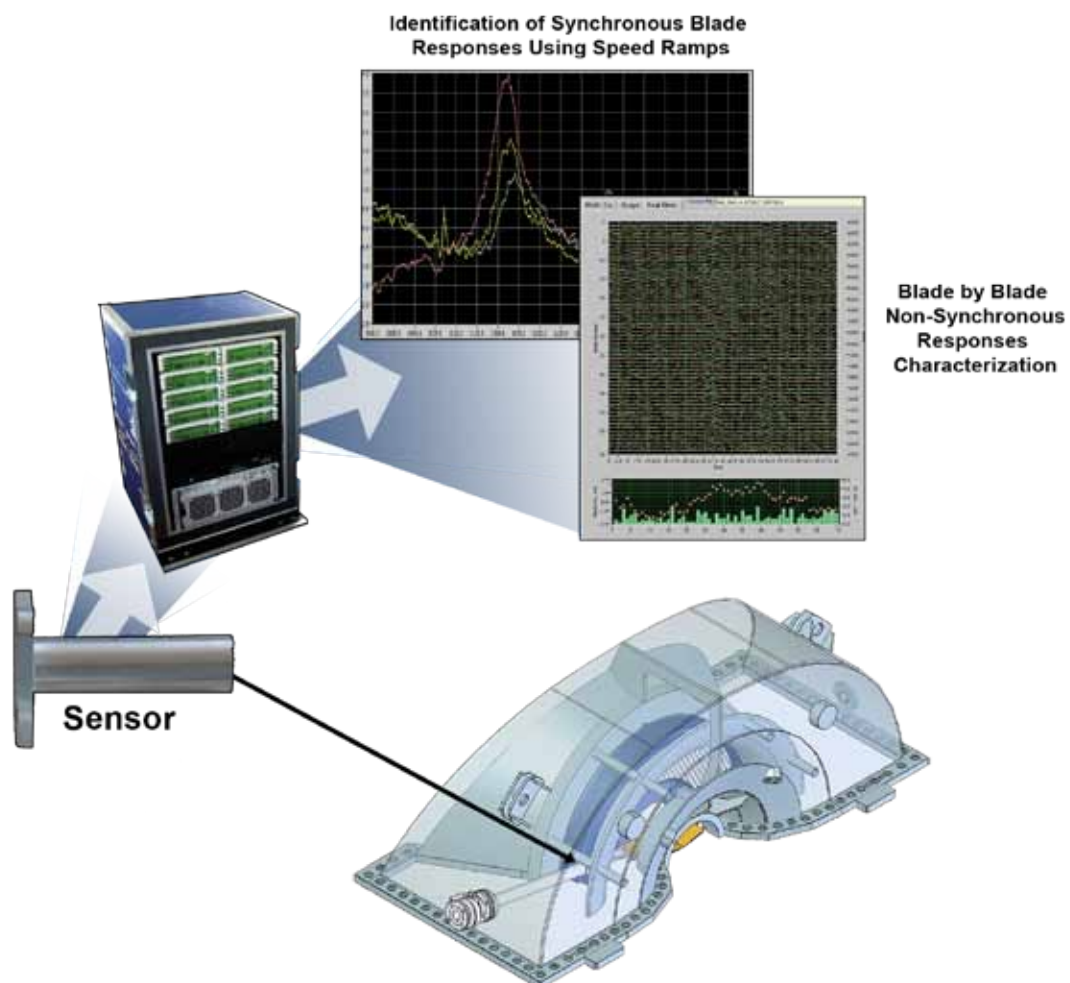
Blade Vibration Monitoring for Turbomachinery



High-Cycle Fatigue (HCF) is a critical failure mode for turbine and compressor blades. HCF can be rapid and therefore, typical inspection intervals of several years are inadequate to protect the equipment against this type of failure. In addition to the lost generation capacity, HCF failures can result in significant consequential damage and are a potential safety risk. The operational risks associated with HCF failures as well as other failure modes including stress corrosion cracking (SCC), disk burst etc. can be effectively managed by the use of a non-contact blade vibration monitoring system where the health of each blade can be assessed on a continuous basis. By leveraging continuous health monitoring capability for each blade, this technology also offers the potential to expand safe operational limits for turbines and compressors and potentially generate additional MWs during peak-demand periods.

Benefits :

- Real-time Assessment of Blade-tip Vibration Amplitude for Each Blade
- Real-time Estimates of HCF Damage for Each Blade
- Expand Turbine Operational Map
- Detect and Quantify Non-Synchronous and Synchronous Blade Vibrations



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