



SLT 14- Analysis of Resonance Related Problems

Topics Covered

Vibratory Motions - Critical Speed Problems - Resonance Related Problems - Bode Plot - Natural Frequency Testing - Mode Shapes - Polar Plots - Correction Methods - Case Study - Do's and Don'ts - Practical Tips - Exercise.

The significance

Every mechanical system has a series of natural frequencies, each of which has its own damping characteristics. The natural frequency/ frequencies will lie "dormant" in a system until they are excited by some external influence or forcing function. The vibration can be greatly amplified if a forcing function, such as unbalance, misalignment or a blade pass frequency happens to be within the range of a natural frequency. When such forcing frequencies coincide with or nearer to a natural frequency this phenomenon is known as "Resonance". This SLT covers the "Analysis of Resonance and Critical Speed Problems."