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Compressor Stall Warning Using Nonlinear Feature Extraction Algorithms

This cutting-edge gas turbine technology uses robust algorithms to detect small disturbances and trigger compressor stall warnings sooner, ensuring safer operations and eliminating flow instability.

Researchers at Purdue University have developed robust algorithms which can detect small disturbances and therefore trigger stall warnings sooner than traditional compressor stall warnings. The technique works for both modal-type and spike-type stall inception, and is compatible with a variety of compressors. By reading inputs from transducers, changes in engine operating conditions can be logged such that the system can react before catastrophe takes place. This cutting-edge gas turbine technology ensures safe operations for compressors and gas turbine engines.

Advantages:

-Detection of small nonlinear disturbances prior to compressor stall

-Extremely accurate

-Works for variety of compressor types

-Works with both modal and spike type stall inceptions

-Eliminates flow instability

Potential Applications:

-Gas turbinesin aviation and power

-Process compressors

-Aircraft operations

-Engine health monitoring (EHM)

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